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Foreword

These proceedings are the outcome of the 8th annual joint conference on "Universities Entrepreneurship and Enterprise Development in Africa" between the University of Cape Coast, Ghana and Hochschule Bonn-Rhein-Sieg University of Applied Sciences, Germany, held on 19-20 February 2020 on Campus Sankt Augustin, Hochschule Bonn-Rhein-Sieg University of Applied Sciences. The conference was developed in the context of the bilateral university partnership project **"BET Ghana - Building Expertise and Training for growth in the consumer goods and food processing industries in Ghana"** between the universities named above, generously funded by the German Academic Exchange Service (DAAD) and the German Federal Ministry for Economic Cooperation and Development (BMZ). The conference was made possible by further financial support from the Chamber of Commerce and Industry Bonn/Rhein-Sieg. Our joint project began as a small cooperation to establish incubators at the University of Cape Coast and learn from each other's experiences in incubation, entrepreneurship, and application orientation in teaching and research. In doing so, we initiated a reflection process on the university's role in the professional life and orientation of students and their responsibility to the local economy and society in general. The project aims to create a platform for actors from different sectors to build networks between universities, students and graduates, companies, and government representatives, between Germany and African countries. Each year, our conference has grown as a format for networking and knowledge sharing. It has attracted more and more attention and awareness of the possibilities of doing business with African partners. We believe that there is still growth potential and will continue to promote international and cross-sectoral exchange and contribute to the discussion on entrepreneurship and development in Germany and Africa.

Since the beginning of our cooperation, our relationship has strengthened to the extent that we will continue cooperating at other levels. The conference is just one example of this and will take place next time in Ghana, organized by the University of Cape Coast, at the beginning of September 2021.

Our special thanks go to Christine Freitag, Daniel Agyapong, Priscilla Mensah, Kezia-Beryl Godwyll, conference contributors and paper peer reviewers for supporting Oghenekome Umuerri in the publication of these proceedings.

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A process for start-ups growth through expansion into emerging markets

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Abstract

One of the biggest challenges faced by many tech start-ups from developed markets is to have validated market-fit products/services and to see their solutions implemented. In several sectors, stringent regulations, and the law of handicap of head start at home can be hurdles that limit the development and even the survival potential of theses start-ups.

Tech start-ups seeking implementation, learning, and legitimacy may have a solution in expanding into emerging markets. Emerging markets offer both business opportunities in sectors in need of new technologies as they are “fertile grounds” for developing and testing internationalisation business models.

We present here a process designed to help tech start-ups to identify, access, shape and seize these opportunities and to overcome their own specificities and emerging markets specificities. The three phases of the proposed process cover entry node concept, partnership, and business, operating and revenue joint models’ development. Design Science Research Paradigm is used for the design and evaluation of the process. To show the relevance of this process, a case study on the expansion in Morocco of a Dutch start-up active in e-health is used. The study shows the importance of the process for the embeddedness in a local relevant value network with a relevant adopter’s system, a key enabler to achieve time and cost-effective expansion in that specific business and institutional contexts. A pilot to assess the proposed models and evidence of benefits is under development.

To boost their chances of growth tech start-ups from developed markets should consider expansion into emerging markets in their strategy. It would be beneficial that policy makers adopt a strategy by which to assist tech start-ups in accessing value networks in emerging markets. It is also important for policy makers from emerging markets to consider developing schemes to attract tech start-ups from developed markets.

Keywords: Start-ups, technology, design, internationalization, emerging markets, institutions, resources, network, transaction costs, Design Science Research, case study

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Introduction

Start-ups as Small Medium Enterprises (SMEs) play a crucial role in fostering competition, inducing innovation and supporting the emergence of brand-new sectors (Colombelli et al., 2016). Unlike Multinational Corporations (MNCs), start-ups, as SMEs, have the ability to launch rapidly new products and services, to continuously improve them, and to change them according to the response of the customers. Unlike MNCs, SMEs and start-ups can be satisfied with a small-scale local replicable business opportunity in small cities or even rural area and then expand into larger cities later.

Rapidly replicating and scaling up is important for start-ups to grow. It is often a race against time. Unfortunately, many start-ups and even scale-ups fail before reaching the maturity level. 42 % of them fail because of "lack of a market need for their product" (Mansfield, 2019). Many innovative, potentially game changers tech start-ups from developed markets, may find themselves in this situation as there is a risk of facing two tough hurdles at home:

1. The law of the handicap of the head start,
2. Stringent regulations that lengthen the go-to-market process.

These two hurdles may be good reasons for these tech start-ups to consider internationalisation of their business. Expansion into emerging markets with relevant business opportunities and less stringent regulations may offer a way out of the stalemate. These opportunities can be found in offering solutions that enable affordable access to quality services such as healthcare, education, clean drinking water and energy. Next to reaching early adopters and speeding up their development, the goals of this tech start-ups expansion may be validation of their product-market-fit, acquiring new skills, learning, developing their implementation process.

Using terms from 'dynamic capabilities' concept (Teece, 2007), the challenge for a start-up would be in sensing relevant emerging markets and accessing, shaping and seizing business opportunities there in a time and cost-effective way.

Emerging markets are nations' economies experiencing increasing incomes and high and rapid Gross Domestic Product (GDP) growth. Next to offering new business opportunities, they challenge existing business models from developed markets and are then "fertile grounds" for developing and testing new internationalisation processes (Hoskisson et al., 2013; Wright et al., 2005). The goal of this paper is to propose a process that could be used by tech start-ups or scale-ups for their expansion into emerging markets. This process takes into account the following specificities of start-ups and of emerging markets.

Start-ups specificities may be summarised as:

- Creative: They create new product categories and new business models (Teece, 2012).
- With liabilities: Next to the lack of resources, start-ups have four important liabilities for internationalisation: liability of smallness (Aldrich & Auster, 1986), liability of newness (Stinchcombe, 1965), liability of foreignness (Johanson & Vahlne, 2009; Zaheer, 1995) and liability of outsidership (Johanson & Vahlne, 2009). These liabilities raise the issue of legitimacy of start-ups, i.e., being perceived as worthy, competent, and effective (Zimmerman & Zeitz, 2002)

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- Without relevant track record of accomplishment and of assets: this gives the perception that thy may not /cannot deliver sustainably. As a consequence, prospective customers in emerging markets, often SMEs or governments, tend to prefer doing business with large, well established western companies.

Emerging markets specificities may be summarised by the characteristics described by Xu and Meyer (Xu & Meyer, 2013):

- Less efficiency due to imperfections in the institutional framework, also known as institutional voids (Khanna & Palepu, 2010; Larimo et al., 2015; Meyer & Grosse, 2018), less transparency, more extensive information asymmetries, and higher monitoring and enforcement costs,
- Governments and government-related entities are not only setting the rules but are active players in the economy. These markets have often what can be described as government driven business,
- Network-based behaviours are common, in part because of the less efficient markets, but arguably also due to social traditions,
- Risk and uncertainty are high due to high volatility of key economic, political, and institutional variables.

Another challenge is related to the psychic distance defined in terms of factors such as differences in language, culture, political systems, etc. which disturb the flow of information between a firm and the market (Vahlne & Wiedersheim-Paul, 1973).

One can then ask the question: given these characteristics, is it worth the effort, for a start-up, to take a risk to lose focus on their business objectives at home and go to an emerging market? The careful design of a tailor-made process for guiding the expansion process is expected to be instrumental in achieving the targeted development and growth objectives at affordable costs and in short time. This gives rise to two questions:

1. Is this process useful (relevance)?
2. Can it be validated in an emerging market context and replicated to home country context?

To cover the study of its relevance sand of its evaluation, Design Science (DSR) paradigm (Hevner, 2007) is used. By definition, the core of a DSR process is to design a purposeful artifact to address a (previously identified) relevant problem (Nunamaker et al., 1990). DSR generates generic knowledge, but typically not universal knowledge. It is rather mid-range theory, only valid for a specific application domain. To generate generic knowledge, Hevner (Hevner, 2007) developed an approach based on a complementary three cycles model (Figure 1.a):

1. Design cycle- to iterate between the activities of developing and evaluating the design artifact,
2. Relevance cycle, to bridge the contextual environment with the design science activities,
3. Rigour cycle to connect the design science activities with the knowledge base.

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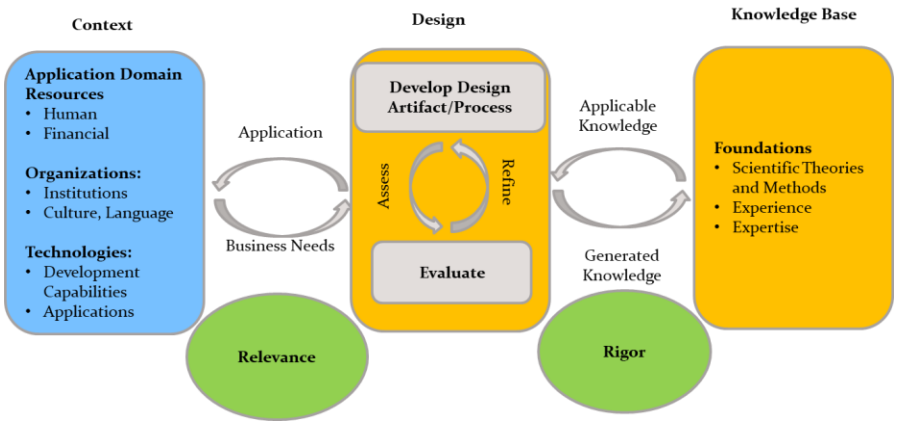

Figure 1.a. DSR three cycles model (Hevner 2007)

Seizing opportunities in emerging markets

The specificities of emerging markets on one side and of start-ups, their need for rapid return on investment on the other side lead to limited options for emerging markets entry modes. An incremental process as proposed by Cavusgil (Cavusgil, 1980) and Johanson and Vahlne (Johanson & Vahlne, 1977), for example, may prove to be inadequate. To speed-up sensing and shaping relevant business opportunities in an emerging market, to reduce related costs and risks, it is important to view them from the points of view of transactions costs, institutions, network, and resources perspectives. Institutional theory (North, 1990), internationalisation theory (Johanson & Vahlne, 2009; Sandberg, 2013), transaction costs theory (Williamson, 1985; Yousuf, 2017), network theory (Costa et al., 2017) and resource-based theory (Barney, 1991; Olugbola, 2017) will constitute the knowledge base of the design of the process considered here.

Transaction costs and institutions

Transaction costs (Coase, 1937) are a critical factor in market and entry mode selection. There are ex-ante and ex-post transaction costs. Ex-ante transaction costs are the costs of searching, drafting, and negotiating a contract. Ex-post transaction costs of contracting are the costs of monitoring the other party to ensure that the agreed contract is fulfilled, costs of corrections of misalignment of incentives, costs of enforcing the contract if it is not fulfilled, bonding costs of effecting secure commitments, and costs of handling ex-post disputes. They may also include transportation costs (Petrovic & Krstić, 2011). North states that due to institutional environment transactions costs are higher in developing countries than in developed countries (North, 1990). To create a competitive advantage or to remain competitive firms must find ways to minimize transaction costs as much as possible. Many researchers, such as Dyer and Yousuf (Dyer, 1997; Yousuf, 2017) have investigated how firms decrease transaction costs. Williamson (Williamson, 1975) suggests that transaction costs reduction is one of the goals that firms may pursue by going in partnerships. For a start-up, lacking financial resources, finding ways to avoid or reduce these transaction

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costs is key. Reduction of transactions costs could be a sufficient argument to consider partnership as an entry mode when expanding into an emerging market.

Resources

Another argument to consider partnership is to have access to leverageable, complementary resources. For a tech start-up, lacking resources by definition, it is not the resources themselves that can create a sustainable competitive advantage as stated by the resource-based view (Barney, 1991), but rather how it uses capabilities and technologies to create a unique value. Knowledge and implementation of innovative technologies are the assets of interest to a potential value network and its adopters' system as defined by Nieuwenhuis (Nieuwenhuis, 2018). Studies of supporters of the transaction costs theory encompass the idea that networks exist because this is the only affordable way that some organisations can gain access to resources (Oliver & Ebers, 1998). To avoid investment in resources for their expansion, start-ups must seek ways to be embedded in a relevant value network to gain access to resources (Chung et al., 2000).

Network

Vahlne and Wiedersheim-Paul (1973) state that firms are expected to enter markets with successively greater psychic distances (Vahlne & Wiedersheim-Paul, 1973). As a tech start-up from a developed market, entering an emerging market with a large psychic distance is close to being a born global firm as defined by Knight and Cavusgil (Knight & Cavusgil, 2004), namely "entrepreneurial start-ups that, from or near their founding, seek to derive a substantial proportion of their revenue from the sale of products in international markets." This work aims to design a time and cost-effective three phases process that is expected to help tech start-ups to succeed in expanding into emerging markets. Figure 1.b. gives the DSR model used here for the design and evaluation of the process. For the evaluation of the designed process, case studies are used. (Costa et al., 2016; Hak & Dul, 2008).

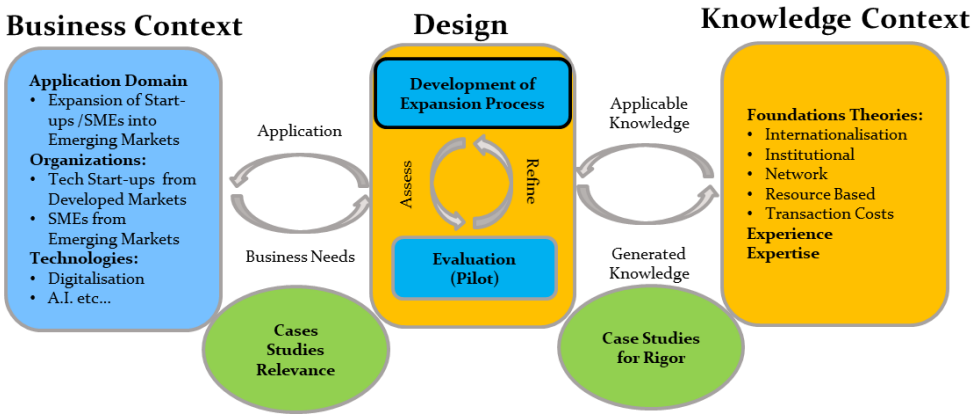

Figure 1.b. DSR three cycles model (Hevner 2007) applied to the design of the process of expansion of tech start-ups into emerging market

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The proposed process design has three phases (cf. Figure 2), namely:

1. Assess and access
2. Partner
3. Design, test and validate an implementation process and related practical joint models, namely the business model and its operating and revenue components.

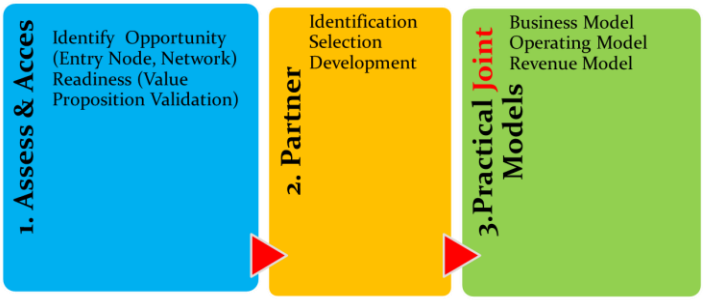

Figure. 2. The three phases of the proposed process for expansion into emerging markets

The first phase of the process is an assessment of business goals and own readiness to expand, of potential opportunities in a target emerging market and of and relevance to potential partners there. Many questions have to be answered in this step: How to know that there is a relevant opportunity that fits with the business goals? Does the product or services fit with the local needs and context? Are the potential required adaptations feasible and capabilities and resources to do them available? These and other questions can be answered through a value proposition validation process. This is key for the success of the implementation of the proposed solution, i.e. its embedding in practice and its use as intended. Greenhalgh states that this success is dependent of the interplay between three core elements (Greenhalgh, 2017):

- Fitness with the context where it is implemented,
- Level of facilitation of the implementation process. This is linked to the readiness of the value network to invest in equipment and in staff and customers training for a smooth and a swift solution integration,
- Evidence of cost effectiveness and benefits of intervention in the given context.

This value proposition validation is essential for the assessment of these three elements. For conducting this value proposition validation in the target emerging market, it is important to be embedded in a value network with compatible goals, complimentary capabilities and resources to gather insights and analysing them. This embeddedness is the role of the entry node. Identifying and engaging the right entry node to the right value network in an emerging market is key. Having an entry node and its value network guiding the process of market entry (Lopez et al., 2009) will speed up the value proposition validation.

The second phase of the process is the identification, selection and development of a local partner. The goal of this step is to bridge the start-up expansion goals to potential development and growth opportunities in the targeted emerging market. Potential partners should have the formal and informal local networks, the resources, the

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capabilities to achieve the development goals. Several authors give detailed partners selection processes (Bamford et al., 2003; Cavusgil et al., 2002; Hitt et al., 2000; Schaan & Kelly, 2007). Given the institutional and cultural contexts in emerging markets, next to business fitness, a good process for building a partnership focuses first on building relations and trust. In transaction costs economy, and certainly in emerging markets, two main sources of transactions costs are bounded rationality because of information complexity and informational uncertainty and opportunistic behaviours (den Butter, 2012). Opportunistic behaviours refer to "self-interest seeking behaviour". This is unlikely to happen when the selected partner is a member of the chosen value network. This implies low risk for the time and money to be invested in shaping and seizing business opportunities.

The third step is to develop the practical building blocks of the expansion process, namely the business model and mainly its operating and revenue models. Early assessment of evidence of cost effectiveness and benefits, context fitness and the level of facilitation by the value network is key for developing a business model that sustainably bridges adopters to the value network and delivers expected social and financial benefits. This step is to be done together with the partner as it helps to develop and align on a common vision, map out operating practices, on how expenditures will be done and how income will be generated, managed and eventually shared within the value network.

The joint business model design framework given by Figure 3 is inspired by de Man's alliance design framework (de Man, 2013). The successful co-development of this model requires the consideration of the local business and institutional environments and good communication and exchanges interfaces between partners to manage culture, language differences and resources. The co-development process helps checking partners commitment and cooperation levels, building trust. If the partners cannot be open about their own business models and agree on a joint business model, namely on the joint value proposition and operating and revenue models, further collaboration development does not make much sense. Jian and Hansen (Jiang & Hansen, 2016) aggregated the nine building blocks of the business model canvas proposed by Osterwalder and Pigneur" (Osterwalder & Pigneur, 2010), into four blocks, namely Value Proposition, Value Creation, Value Delivery and Value Capture (See Figure 4). Basic definitions of operating and revenue models are given below.

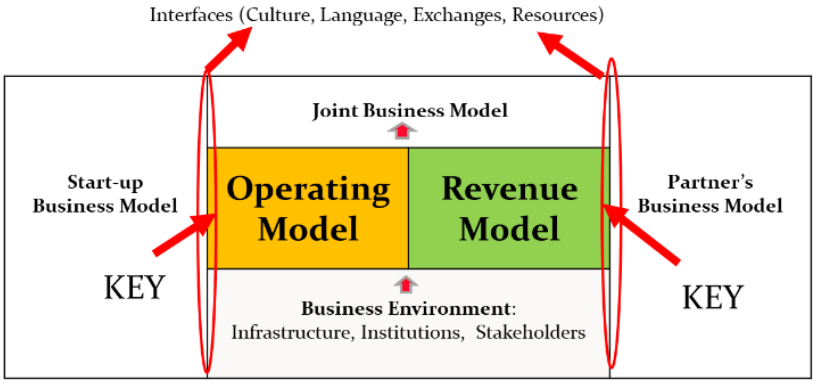

Figure 3. Partnership and joint business model design framework

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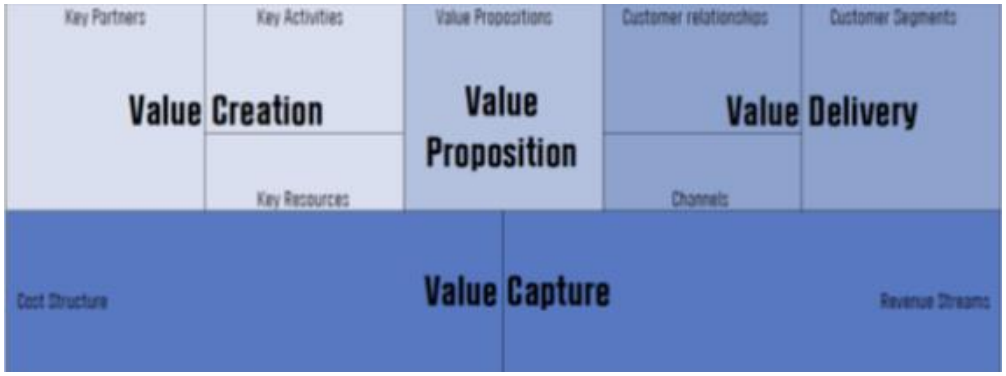

Figure 4. The four aggregated blocks of the business model canvas (Jiang & Hansen, 2016)

Operating model

Vahlne and Wiedersheim-Paul (1973) state that firms are expected to enter markets with successively greater psychic distances (Vahlne & Wiedersheim-Paul, 1973). As a tech start-up from a developed market, entering an emerging market with a large psychic distance is close to being a born global firm as defined by Knight and Cavusgil (Knight & Cavusgil, 2004

Operating models can be seen as the conceptual components that serve as a bridge between strategy and effective execution (Blenko, M., Garton, E., Mottura, L., 2014). The operating model will help to determine who contributes what. Flows of materials, information, money and staffing have to be carefully designed and managed. The design and optimisation of the value network is then key for having an effective operating and revenue models.

Revenue model

The revenue streams represent the money a company, here the value network, generates from each customer segment. Given the weak institutional environment, the high share of informal sector and of the large low-income segment in emerging markets, challenges in this revenue model are pricing and the mode of payment. Taking this into account, careful identification of the first adopting system is key for the success of the implementation and subsequent replication and scale up phases. Readiness and preparedness of the value network to implement a new technology requires evidence of benefits for the value network and for its adopter's system. It is important to have a quantifiable validated operating and revenue models. These models should be used to assess activities of the value network members and their related costs and benefits. This assessment is an iterative process that will help to eliminate activities with poor value – cost relationship, and ultimately optimise the value network configuration so that self-sustaining business model is possible (Gamble et al., 2004). This not an easy task.

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Kimble (Kimble, 2015) gives five local for local telemedicine case studies in developed countries and five in emerging countries. Most of the business models described there are not self-sustaining and require some sort of fee from the user and rely directly or indirectly on external funding from governments or non-governmental organisation. Zipline (Wikipedia contributors, 2020) an American start-up created in 2011 and muted into a drone company operates in four developing economies (two in Africa, two in Asia). Zipline succeeded to go beyond small-scale projects to replication and scale up through securing important contracts with governments to develop distribution centres for delivery between large hospitals and health facilities or delivery of emergency medicine.

Evaluation of the process

Application Context

For the operationalisation and the evaluation of the proposed three phases process the case study considered here is the expansion of a Dutch e-health start-up, LIVV, into Morocco. Founded in 2011, in partnership with a hospital in the Netherlands. LIVV focuses on the provision of care at distance to patients. One of the product-service bundles provided by LIVV is a mobile arrhythmia monitoring system based on: a) a 1-lead electrocardiogram (ECG) measurement device (physical product, referred below as Heart Event Recorder), b) applications to be installed on patients and/or on care providers smartphones, c) an online platform linking care providers and their patients. LIVV is owner of the last two elements. The first one is a third-party sourced product. This system enables a 24/7 access to cardiology care (explicit service). LIVV proposes a concept of a Cardiology Call Centre (CCC) based on mobile arrhythmia monitoring system above. Given its slow development in the Netherlands, for speeding up the validation and development of their CCC offering, LIVV considered looking for early adopters outside the Netherlands. Morocco was among the targets.

Patients in Morocco, as broadly in emerging markets, face two hurdles for access to affordable and quality care:

1. Logistics costs in time and money and their high share in burden and the total cost of access to care: traffic congestion in large cities, lack of reliable access to transportation, inadequate transport infrastructure in rural area.
2. Shortage and ill distribution of specialised healthcare facilities: Specialised medical staff and facilities such as in clinical specialities and in clinical analysis laboratories are concentrated in few urban areas.

All this hinders continuity of care and negatively affects patients' outcomes.

Smart combination of technology and transformation of health care delivery systems can give access to care to more people than any other kind of traditional healthcare systems (Tas, 2018).

To assess, access, shape and seize this potential opportunity in Morocco, the three phases of the process described above are applied.

4.2 Phase I: Identify, assess, access

The latest official figures, published by the Moroccan ministry of health in 2019 show with that 54% of the doctors spread out across the country work in the private sector (Minsitère de La Santé Marocaine, 2019). For implementation

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acceleration reasons, the choice is made here to focus on the private health sector were the potential value network and the adopter's systems are easier to identify and quicker to access than in the public sector.

LIVV used as entry node a professional living in the Netherlands with Moroccan roots, a business experience in Morocco and with a good link to cardiologists running private cardiac clinics in Casablanca. Cardiologists approached where first sceptical to some degree given the small size, age and experience of LIVV but have shown interest in the CCC concept, the learnings it brings, its combined product-service model and its value proposition, namely:

"Wherever you are, live with the assurance that professional and medical help is 24/7 within reach."

To assess the benefits, the reason to believe in the value proposition and its discriminator, it was proposed to gather insights on the receptivity of the adopters' system here formed by cardiac professionals, also clinics owners, and patients. This insight gathering was done through a series of interviews with cardiologists and their patients. The participants in the study have been nine (9) cardiologists and forty-one (41) patients. The cardiologists were identified through an influencing cardiologist from the value network. Patients were randomly chosen from the waiting rooms of interviewed cardiologists. The interviews were carried out using a set of open-ended questions. An interview guide was provided for each of the cardiologists in advance. Given the potential of high level of illiteracy among patients, a direct interview with closed questions was used.

From the interviews with cardiologists one can draw the following conclusions:

1. **Benefits:**

   For cardiologists, benefits are mainly related to:

   - Enabling access to a wider population mainly to patients living far (extension of geographical reach through offering offsite care),
   - Ensuring continuity of care for patients with chronic conditions that requires frequent inspections and treatment,
   - Filtering patients before coming to the clinics to focus on patients suffering from heart diseases that need direct contact,
   - Reducing emergency room visits.

2. **Reason to Believe**: The CCC concept being under test by renown cardiologists and general practitioners in the Netherlands gives confidence in it. Evidence of financial benefits are required.
3. **Discriminator**: Access to a platform that can be managed and controlled locally involving local cardiac care providers, institutions and IT capabilities differentiates this concept from exiting ad-hoc solutions.

The main concerns expressed by interviewed cardiologists about the concept are:

a. **Easiness of use for elderly**: the elderly (illiteracy, convenience) may have difficulties to independently use devices and to familiarize with non-direct contacts with care providers,
b. **Pricing**: The total price of using the CCC must be affordable for all patients as healthcare expenses are mainly financed by out of the pocket payments,
c. **Payment modes**: Currently, payments are mainly done in cash directly at medical cabinets,
d. A law that will enable cardiologists to be paid for the service provided at distance exists but not yet operational,

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e. **Revenue model**: It is important to give evidence that this model is financially attractive for care providers and balances efforts and benefits?
f. **The Heart Event Recorder is a 1**-lead ECG. It may be enough for arrythmia monitoring but having at least 3-leads would be better.

All participating cardiologists found that the CCC concept meets an urgent need, that the timing was good to develop it and were willing to participate to a pilot as a case study.

From the survey of the forty-one (41) patients, the following conclusions are drawn:

- The CCC is found to be a good solution for easing access to cardiac care and for its continuity. It will help to reduce the hassles of logistics, to overcome its inconvenience and its significant share in the total cost of access to care for patients and their accompanying persons.
- The costs of use of the mobile device and of the CCC should offset the total cost of logistics of the patients and their accompanying persons (transport, stay, time, …).

4.3 Phase II: Partnership

The value network includes four cardiologists and three general practitioners LIVV and medical appliance distributors. On the adopters' side one has patients and staff members of cardiology clinics and general practitioners' offices.

For the design of the Cardiology Call Centre in Casablanca (CCCC), of the related business, operating, revenue and implementation models, identifying a local partner for LIVV linked to the value network was a must. The following list of criteria was established together with cardiologists:

- a good network in the healthcare providers ecosystem,
- a close working relationship with cardiologists and general practitioners,
- a good knowledge and experience with medical devices regulations and registration institutions and processes in Morocco,
- a relevant collaboration experience with European companies,
- an infrastructure that leverages modern digital technologies,
- the following capabilities or be willing to develop them:
    - providing services to care providers and patients,
    - training in the use of the mobile arrythmia system,
    - call centre operating capabilities.

Based on these criteria, the identification of a potential partner for LIVV for developing the CCCC led to the only distributer of cardiology related medical appliances based in Casablanca. He was interested in developing telemedicine activities in Morocco. Both LIVV and the distributor agreed on considering an informal partnership for developing first a pilot for the CCCC. This partnership will be supervised by cardiologist from the value network. This important to manage risks sus as opportunistic behaviour. At this phase they agreed to postpone financial and legal arrangements until after the successful completion of the pilot project and focus on decision making process and on

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who does what for the pilot to demonstrate evidence of cost effectiveness and benefits of the CCCC (Bamford et al., 2003). Until then, every member of the value network will finance his own activities.

4.4 Phase III: Develop, test and validate practical joint models

To test and validate the operating and revenue models, to develop a fit for use pricing strategy and payment model, to optimise the value network configuration for the replication phase, to test the exchange interfaces between LIVV and the distributer-partner and to assess patients experience it was agreed to design and carry out a CCCC pilot. LIVV and the medical appliances distributer agreed to work together on using the pilot to design a joint business model for the CCCC using the framework given by Figure 5 and on developing interfaces required for a smooth communication and exchange between the two organizations.

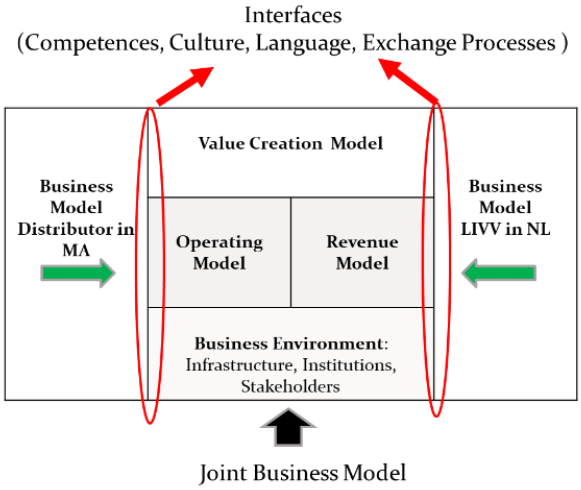

Figure 5. Partnership and joint business model design framework for CCCC

4.5 Operating model

The operating model must give insight in the flow of materials and money, and the data flow between all parties involved, namely the value network and adopter's system. It needs to simultaneously drive value, provide compelling implementation experiences to value network and adopters' system members and serve patients at competitive total cost of access to care and better outcomes. Several operating model scenarios were drafted taking into consideration the staffing, the integration of digital technologies, local mobile communication capabilities and revenue models scenarios.

4.6 Revenue model

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Cardiologists advised for a revenue model in which the patient purchases the heart event recorder, pays a subscription fee to get access to the online platform and for related consultation fees. 1-led ECG reviews done remotely by CCCC care providers staff could be done at a lower price than that applied for a standard 12-lead ECG review done when visiting a cardiologist or a general practitioner. As preparation and measurements are done by the patient where he is, the review will cost less time to do. It could be done by a to-be-trained cardiology nurse under the supervision of a cardiologist. This advice defines di—facto the patients to be considered for the pilot. Considering that LIVV will not adapt the mobile arrhythmia monitoring systems to the required context specifications, the focus will be on mobile literate, self-paying patients from middle class or pre-middle class to keep affordability in check.
Capturing these revenues will require considering alternative patient payment collections as today cash payment at the time of service is the leading payment method in Morocco.

4.7 Pilot Design

Four cardiologists and three related general practitioners agreed to contribute to the CCCC pilot and to recruit thirty-five patients for it (five patient / participant). LIVV will deliver the required professionals and customers mobile arrhythmia monitoring systems. The distributer-partner will set-up the operations, including staffing, manage the revenues model and, with the remote support of LIVV, will monitor the pilot.

5.0 Conclusion

The results of this study provide several relevant contributions to the field of development and growth of innovative tech start-ups and scale-ups from developed countries through their expansion into emerging markets. The three phases process proposed here is designed to help tech start-ups to sense, access, shape and seize development opportunities in emerging markets in a time and cost-effective way:

- Engaging an entry node with knowledge and experience of both cultures and businesses of home and host countries to identify and embed a relevant value network linked to an identified accessible adopter's system is key. A combined product-service offering is important for this embeddedness. Given the potential weak legal enforcement of contracts, being embedded in a value network gives legitimacy as an informal institution and helps to avoid opportunistic behaviour of potential partners.
- Informal partnering with a member of the value network without any formal written agreement being signed but under supervision the value network, helps to avoid transactions costs incurred in ex-ante and post-ante transactions costs.
- Local validation of the value proposition, codesign and iterative tests of operating and revenue models and of a pilot are key assessment steps of evidence, context fitness and the level of facilitation by the value network of the implementation of the solution. They are key building blocks of a self-sustaining business

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model. This helps also to reengineer and restructure the value network configuration so that a self-sustaining business model is possible.

- It is important to start as a business to business (B2B) project with a value network having an adopters' system members with a sufficient purchasing power and literacy to adopt the solution. Approaching adopters' segment with lower income members can be done in a replication phase. The large population in that segment in emerging markets gives a significant scale-up opportunity. A business to government model would be more adapted.
- The experience, learnings, legitimacy acquired are expected to ease the implementation process of the solution back in the home market.

The proposed process and learnings can also be used by technology-based SMEs.

5.1 Future Work and Challenges

Piloting is part of the rigorous evaluation of the proposed process. The pilot will be the one episode of the Quick & Simple DSR evaluation strategy (Venable et al., 2016). It will assess two aspects: a) that it works in a real situation (Shrestha et al., 2014), i.e., that the level of adoption and non-abandonment are high (Greenhalgh et al., 2017) and b) that it causes a significant improvement in tech start-ups development speed, learning and legitimacy through expansion into an emerging market.

It will be used to validate the joint business model and its operating and revenue models and to develop the required context-fit pricing strategy and payment model. It is also to optimize the value network configuration and deliver evidence of balanced efforts-benefits to each of its members. It prepares also for the replication beyond the first circle of adopters, in another context or with other start-ups will enhance the trust in its validity. The development of a case for a drone's start-up for using drones in the collection and delivery of test samples to medical analysis laboratories in Morocco is ongoing. Unlike the Zipline case (Wikipedia contributors, 2020) where the business model is Business to Government, the choice made here is to focus on B2B.

Once solutions concepts are proven, implementation, operating and revenue models for a self-sustaining business model are validated, reverse innovation may give tech start-ups legitimacy and is expected to ease the implementation of the solution at home.

5.2 Implication for Tech Start-Ups Managers

When there is a risk of slow development at home of a tech start-up from a developed market, it is relevant to consider expansion into emerging markets in its strategy. The process proposed here is expected to help start-ups managers to spot, assess and access relevant development opportunities, save time, avoid ex-ante and ex-post transactions costs and related risks, and speed-up their development and solution implementation.

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5.3 Implication for policy makers

Given the difficulties for tech start-ups to access value networks in emerging markets, it would be beneficial for policy makers from developed countries to adopt a strategy by which to assist them in having access to relevant entry nodes at home. Immigrant communities offer valuable and untapped networking opportunities. It is also important for policy makers from emerging markets to consider developing schemes to attract tech start-ups from developed markets in order to promote the development of local innovative entrepreneurial ecosystems.

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Exploratory Study of the Entrepreneurial Ecosystem in Central Region, Ghana

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Abstract

Research on entrepreneurial eco-systems is evolving with exhortations for empirical studies at regional and local levels to augment national surveys. The study, therefore, sought to explore the entrepreneurial eco-system of the Central Region, which is relatively well-endowed with natural resources but lags behind in economic advancement in Ghana. Through descriptive research design, quantitative data were collected using self-administered questionnaires from a convenience sample of 44 entrepreneurs under the presidential business support programme in the Central Region of Ghana, in 2019. Data were analysed, by conducting descriptive analysis such as means (M) and percentages and by exploratory factor analysis, with the IBM SPSS Version 25. Descriptive results of 37 valid responses showed that the respondents were satisfied, in varying degrees (M = 4.19-5.65), with 11 factors within the eco-system; the top three factors were demand, security and availability of raw materials. Respondents were, however, not satisfied with access to business development services, access to finance, rent charges and access to repairers of equipment and thus, pose as challenges to their entrepreneurial pursuits. Principal component analysis revealed inter-connectedness among the factors in the eco-system with strong loadings of measures of institutions and resource endowment under the two components of the solution. Based on the findings, it is concluded that the entrepreneurs surveyed were satisfied with more factors in the EES of the Central Region while they were dissatisfied with relatively few but critical factors in the EES, thereby posing as major challenges to their entrepreneurial activities. As an exploratory study, the findings suggest that the entrepreneurial eco-system of the Central Region of Ghana is, to some extent, supportive of entrepreneurial activities but has key challenges. To achieve maximum outcomes, policy interventions should collectively address, at a time, factors that interact strongly to influence entrepreneurship within the system.

Keywords: Eco-system, entrepreneurship, Ghana, institutions, resources

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A. Introduction

Entrepreneurs and entrepreneurial ventures constitute fundamental catalysts of wealth creation and economic development. Entrepreneurs stimulate the cyclical flow of economic life through the process of creative destruction and creative accumulation within their entrepreneurial ventures of which micro, small and medium-sized enterprises (MSME) form a dominant and essential cohort (Adusei, 2016; Meyer & de Jongh, 2018). Globally, in developed and developing economies, majority of enterprises are MSMEs, and they make significant contributions to employment and national income. For example, Rotar, Kontošić, Pamić and Bojnec (2019) report that in the European Union, MSMEs account for more than 99 percent of all enterprises in the non-financial business economy while in general, MSMEs contribute more than 66 percent of total EU employment and 57 percent of total value addition. Similarly, in African countries, such as Nigeria and Ghana, MSMEs constitute more than 90 percent of enterprises and contribute over 70 percent of gross domestic product (Johnson & Kotey, 2018).

Nevertheless, the ability of MSMEs to drive economic development depends to a larger extent on the entrepreneurial eco-system (EES), which comprises inter-dependent actors and factors that are strategically co-ordinated to promote productive entrepreneurship (Stam, 2015). Through the lens of institutional theory and resource-based theory, major factors within the EES are government policies and public and private infrastructure and services in the legal, regulatory, financial, educational, commercial, physical and social landscapes of a given geographic area (Kline, Duffy & Clark, 2018; Stam & van de Ven, 2019). Cavallo, Ghezzi and Balocco (2018) acknowledged the numerous perspectives, elements, and concepts of the EES and expressed the need to consolidate and to step up empirical research on the subject matter. This is because an appropriate and reliable body of research is critical to policy formulation for a healthy EES while a sound EES is an imperative for entrepreneurs to engage in productive and sustainable entrepreneurship that drives economic growth and development.

Although Ghana is considered a top economic performer in Sub-Saharan Africa, its EES is far from being supportive, especially for productive entrepreneurial activities that will place the country on the pedestal of transformational growth. For instance, a report, submitted by Koltai, Mallet and Musprat (2013) to the United Kingdom's Department for International Development (DFID), shows that although Ghana appears to be in a strong position to leverage entrepreneurship, its EES is not well-developed to promote entrepreneurial activities that will produce meaningful business and job creation. In addition, related national and international surveys indicate that Ghana is a low performer in the world in terms of ease of doing business, global competitiveness and trading across borders (Erastus, Stephen & Abdullai, 2014; Liedong & Frynas, 2018).While acknowledging the importance of country-level studies, it is essential to note that such studies could unfairly mask critical regional and local disparities and, as a result, prevent the disparities from gaining the right policy attention.

The objective of this study was, therefore, to explore the entrepreneurial eco-system in the Central Region of Ghana. Relative to other regions in Ghana, the Central Region is endowed with aquatic and marine resources, cultural monuments, top educational institutions, forests, and other resources that present business opportunities in the transport, fishing, tourism, agro and food processing sectors (Agyei-Mensah & Adolf-Schandorf, 2007). The region is, however, not economically vibrant. The latest Ghana Poverty and Inequality Report (Cooke, Hague & McKay, 2016)

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shows that poverty rate of the region is high (18.8%) as compared to Greater Accra Region (5.6%) while the formal industrial sector keeps dwindling with an estimated annual job loss of 606.

Moreover, it is generally claimed that the Central Region does not have effective and efficient entrepreneurial eco-system but there are virtually no studies that analyse the entrepreneurial eco-system and its elements. This paper sought to set the pace with an exploratory study guided by two major research questions: (1) To what extent are entrepreneurs satisfied with the factors within the entrepreneurial eco-system? (2) What are the challenges that entrepreneurs encounter in the entrepreneurial eco-system?

The paper makes two key contributions to literature. The first is a conceptual framework of the EES and the second consists of preliminary insights into the EES of the Central Region of Ghana. The study also buttresses the need for regional and local surveys in addition to national surveys. The remaining sections of the paper are dedicated to literature review, methodology, presentation of results and discussions, conclusions, limitations, and directions for future research.

B. Literature Review

The literature review is made up of two parts. The first part is dedicated to the meaning of the concept of entrepreneurial eco-system and how it compares and contrasts with similar concepts such as the business eco-system and entrepreneurial climate. The second part of the review focuses on the conceptual framework of the EES.

C. The entrepreneurial eco-system

The EES refers to inter-dependent actors and factors that enable or constrain productive entrepreneurship (Stam, 2015). The actors, including policy makers, suppliers of resources and entrepreneurs, create, enable and use the factors to drive entrepreneurship with the ultimate expectation of achieving positive entrepreneurial outcomes such as establishment of diverse growth-oriented firms, enhanced firm productivity, profitability and growth and, eventually, economic growth and development (Cohen, 2006; Spilling, 1996). The factors have been broadly categorised by Stam and van de Ven (2019) to consist of institutions and resource endowments. From the perspective of institutional theory by North (1990, 2016), institutions are the rules of the game in a society, and they could be formal, for example written policies, laws and regulations, or informal in the form of codes of conduct, norms and conventions.

Resources, on the other hand, are tangible and intangible assets such as human capital, organisational capital, financial capital, physical capital and relationship capital that are leveraged by individuals and entities to create value and special advantages (Kellermanns, Walter, Crook, Kemmerer & Narayanan, 2016). The resource-based theory by Barney (1991) illustrates that resources that are strategic, in other words are valuable, rare, inimitable and non-substitutable, offer opportunities for the creation of sustained competitive advantages. The two overarching components of the EES, that is actors and factors, have underpinned the evolution of the EES concept.

Emergence of the concept of EES is often traced to the pioneering works of authors such as van de Ven (1993) on the development of infrastructure for entrepreneurship, Moore's (1993) business eco-system and the entrepreneurial

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system by Spilling (1996). Both van de Ven (1993) and Moore (1993) demonstrated that innovation, which is at the core of entrepreneurship, is the outcome of co-operative and competitive complex interactions among actors, factors and functions within a particular jurisdiction. However, van de Ven (1993) set his discussions within the broader scope of development of industrial infrastructure that could positively or negatively influence entrepreneurship while Moore's business eco-system (1993) focused more on the nuances of corporate entrepreneurship and associated events across industries.

Conversely, Spilling (1996) provided a relatively extensive description and importance of the entrepreneurial system to economic development. According to Spilling (1996), the entrepreneurial system connotes the entrepreneurial capacity of a locality or region. It is made up of various elements, actors and the roles they play, as well as various institutions and environmental factors. Spilling (1996) noted further that the entrepreneurial system is critical to driving multitude of entrepreneurial actions that are needed to contribute to the dynamism, performance and long-term transformation of regional economies. Similarly, drawing upon insights from earlier scholars, Cohen (2006) defined the EES as diverse set of inter-dependent actors within a geographic region that influence the formation and eventual trajectory of entire group of actors and, potentially, the economy as a whole.

Comparison with the concept of entrepreneurial climate (Adomako, Danso & Ampadu, 2014) indicates that just like the EES, the former comprises elements, such as economic, political and socio-cultural factors, that shape the growth and performance of small businesses in a territory. However, the EEs can be distinguished from the entrepreneurial climate on the grounds that the latter is a component of the EES, as explained by Spilling (1996). The EES can also be likened to the entrepreneurial framework conditions, by the global entrepreneurship monitor (GEM), which are said to enhance or hinder new business creation (Beynon, Jones & Pickernell, 2017). Nevertheless, the EES is broader and complex in nature as it embraces actors, in addition to factors, that co-operate and or compete to influence entrepreneurial activities and eventual impact on the growth of a given territory.

Even though the EES also shares some commonalities, such as institutions and infrastructure, with concepts like the business eco-system, industrial districts, clusters and innovation systems, Nicotra, Romano, Del Giudice and Schillaci (2018) noted that the ESS is distinguished by its focus on entrepreneurs and start-ups as unique organisational entities with different capabilities and resources and on the role of economic and social contexts surrounding entrepreneurial processes. Song (2019) further explained that unlike industrial districts, the EES moves away from industry-specific analysis and assumes broader perspectives that cut across related industries and the elements that enable entrepreneurship including intrapreneurship, which underpin continuous business development.

Some major factors within the EES, presented by Kline, Duffy and Clark (2018), are government policies and support and accessibility and quality of public and private infrastructure and support services within the legal, regulatory, financial, educational, commercial, physical and social landscapes of a given geographic area. In addition, Hechavarría

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and Ingram's (2018) outline of the EES includes internal market dynamics, that is speed of market change, and internal market burdens, in terms of ease of entry into a market, as extra distinct EES elements.

Furthermore, Nicotra et al. (2018), in an empirical study, classified the elements of the EES into four major forms of capital, namely financial capital, knowledge capital, institutional capital and social capital. In the midst of the various classifications, Stam and van de Ven (2019) summarised and provided two broad categories of the elements of the EES, namely institutional arrangements and resource endowments. Institutional arrangements are synonymous to Nicotra et al.'s (2018) elements of institutional capital and social capital while the other elements such as physical infrastructure, talent and demand constitute resource endowments.

D. Conceptual framework of the entrepreneurial eco-system

Informed by the preceding review, the EES is conceptualised and defined in this paper as constituting inter-related actors and factors and their influence on the evolution and development of entrepreneurial activities and the eventual impact on economic growth and development of a given territory. Although concepts like the digital EES, as used by Sussan and Acs (2017), may defy the location-specific description often ascribed to the EES, this paper embraces the location-related definition of the EES due to the fact that it focuses on entrepreneurs within a particular geographical location. Therefore, from the tenets of institutional theory and resource-based theory, Figure 1 shows that the EES thrives when all the elements that are required to sustain productive entrepreneurship in a given territory are present and in good state while the contrary holds when the system is in a bad state (Stam & van de Ven, 2019).

The major components of the EES, as depicted in Figure 1, include actors, factors, effects and outcomes. In agreement with Spilling (1996), the elements comprise existing actors, their competence and support for entrepreneurial action, and the character of prevailing environmental factors in the geographic locality. Figure 1 shows three principal actors in the EES – policy makers, resource suppliers and entrepreneurs. Policy makers represent all persons, groups and organisations who enact, implement and sanction laws, regulations and policies within the EES. Suppliers of resources constitute individuals, groups and organisations that provide resources at a price or for free.

Suppliers could operate from all sectors within and outside the EES and may consist of entities such as the government, development partners, labour market, universities and creditors (Cavallo et al., 2018; Hechavarría & Ingram, 2019). Consumers form part of resource providers as they support the development of the EES through their purchasing power and consumption choices (Nicotra et al., 2018). Entrepreneurs have the distinct role of tapping into entrepreneurial opportunities created by the institutional conditions and resource endowments and, on the basis of that, carry out innovation and continuous entrepreneurial development which can be productive or unproductive (Baumol, 1996)

Insert figure 1

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The actors, as illustrated in Figure 1, have the responsibility of co-operating and collaborating, amidst competition, to promote conducive and sustainable entrepreneurial climate that support productive innovation and consumption (Cohen, 2006; Nicotra et al., 2018). For example, policy makers are expected to co-operate with entrepreneurs and suppliers of resources by soliciting their inputs in the development and implementation of relevant policies (Cunningham, Menter & Wirsching, 2019). Policy makers and resource providers, such as universities and research institutions, are also required to collaborate to promote research and human resource development that will drive entrepreneurship in the EES (Cunningham et al., 2019; Ratten, 2020). In executing their roles, the actors may also engage in multiple roles, thereby accentuating the complexity of the EES. For instance, entrepreneurs may engage in intra-group competition to secure resources for the pursuit of entrepreneurial opportunities; this phenomenon may extend to inter-actor competition when, for example, some resource providers and policy makers may be entrepreneurs or may be engaged in entrepreneurship and vice versa and compete for resources.

The activities and interactions of the actors define and or influence the institutional environment and resource endowments which operate together to create entrepreneurial opportunities (Figure 1. Therefore, the effectiveness and efficiency of the EES, as a whole, depends on the state, scope and application of institutional arrangements and resource endowments and their ability to continuously drive productive entrepreneurship, particularly innovation (Figure 1). The scope of application of institutions in the EES is broad as the body of institutions spans from the various actors to resource endowments and even to the outcomes within the EES. Institutions can support or can be inimical to entrepreneurship.

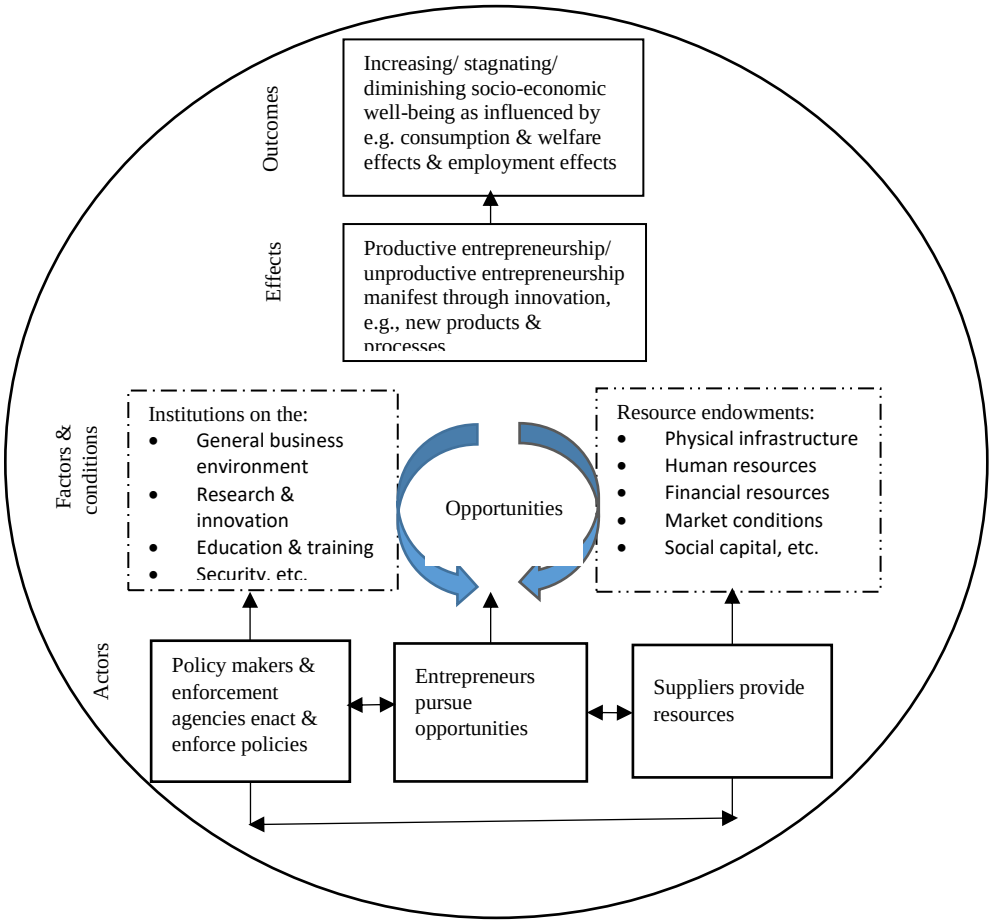

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Figure 1: Conceptual framework of the entrepreneurial eco-system
Source: Authors' construct

In that regard, studies, by Adomako et al. (2014) in Ghana, and Williams and Forley (2015) in Bulgaria, showed that formal institutions drive entrepreneurship and although informal institutions may foster entrepreneurship in the informal economy, they serve to hamper productive entrepreneurship. In addition, a related study by Eesley, Eberhart, Skousen and Cheng (2018) showed that national and regional differences in entrepreneurial activities in terms of entry, survival and growth can be better explained by the interactive influence of formal and informal institutions with informal institutions having more persistent effects when the two are misaligned. In terms of the causes of informality, research by Kamasa, Adu and Oteng-Abayie (2019) and the World Bank's (2019) doing business report showed that regulatory burdens and high cost of utilities, for example, drive up costs of operation and often promote informality and tax evasion in Ghana.

Business development services (BDS), that is non-financial services such as advisory services, training and capacity building, are also an important aspect of institutions since they constitute 'rules of the game'. BDS are known to help enterprises improve upon their performance, job creation, labour productivity and investment (Ovadje, 2010; Piza et al., 2016). For example, in Ghana, research by Ntiamoah, Li and Kwamega (2016) revealed positive effects of BDS provided by government and other institutions on the performance of enterprises. Resource endowments constitute the second set of elements in the entrepreneurial climate of the EES, as depicted in Figure 1.

Resources are tangible and intangible assets such as human capital, organisational capital, financial capital, physical capital and relationship capital that are leveraged by individuals and entities to create value and special advantages in a sustainable manner (Barney, 1991; Kellermans et al., 2016). The extent to which special advantages can be realised is dependent upon the ability of individuals, in this case entrepreneurs, to leverage the strategic resources to tap into opportunities that create the advantages (Kellermanns et al., 2016). Focusing on the EES for start-ups in Brazil, Arruda, Nogueira and Costa (2013) analysed the determinants of entrepreneurship in Brazil. Major findings were that access to finance, availability of basic skills for entrepreneurship development and market conditions in terms of market size and purchasing power were important to entrepreneurship.

Examination of Ghana's EES by Koltai et al. (2013) also revealed limited actors that deliver on their mandate, fragmented eco-system activities, finance gap and lack of "government-based champion of entrepreneurship". A related study by Baidoo and Awuakye-Odum (2016) in Cape Coast, Ghana, showed that respondents were dissatisfied with services by equipment repairers in terms of service quality, absence of working standards and availability of requisite component parts. Mensah, Fobih and Adom (2019) also examined the prospects and

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challenges of entrepreneurship development in Ghana and found major challenges such as limited funding availability and accessibility, and inadequate skilled labour, technology innovation and customer loyalty.

The upper portion of Figure 1 shows the interactive effects of the factors and conditions of the EES, manifest by booming/productive entrepreneurship and or unproductive entrepreneurship which could drive or retard the growth and development of the territory in question. Evidence of the desired ultimate outcomes encompass, for example, sustained increment in income, consumption, employment and general welfare. Examination of the quality of the entrepreneurial eco-system in the Netherlands by Stam and van de Ven (2019) showed that the prevalence of high-growth firms in a region is strongly related to the quality of its entrepreneurial eco-system.

The reality is that planned and adequate investment into the development of the EES produces positive and lasting outcomes, with spillover effects, while the lack of it makes the EES deficient and ineffective. For instance, Spilling (1996), through a case study of the 1994 Winter Olympics in Lillehammer, Norway, established that conscious development of the entrepreneurial system in Lillehammer nurtured and led to the growth of entrepreneurship which eventually brought about economic transformation of the host town and positive effects on the surrounding regions. On the contrary, a related study by Olutuase, Brijlal, Yan and Ologundudu (2018) on the effects of the EES on the entrepreneurial orientation and intention of university graduates in Nigeria showed a significant context-dependent variation in entrepreneurial orientation and intention. The authors raised the need to create a conducive EES to complement entrepreneurship education.

The foregoing review illustrates the four major components of the EES to comprise actors, factors, effects and outcomes. It is evident that EES research is evolving with much attention on country level analysis and limited focus on regional and local studies except, for example, that by Spilling (1996). Also, there are very limited scientific EES studies on Ghana and its regions and localities. Again, the review illustrates numerous perspectives, elements and concepts which warrant empirical studies for consolidation, as put forward by Cavallo et al. (2018).

E. Methodology

The study employed a quantitative, descriptive research design to explore relevant factors and conditions in the EES of the Central Region of Ghana (Zikmund, Babin, Carr & Griffin, 2013). The study subjects were 67 entrepreneurs who participated in the business and entrepreneurial training of the presidential business support programme in the Central Region, on 26th July 2019. The programme is one of Ghana government's initiative to bolster the country's EES which was described in 2013 by Koltai et al. (2013) as fragmented and largely incapable of fostering transformational entrepreneurship. The 2019 presidential business support programme, in the Central Region, was made up of persons from the various districts in the Region who qualified for support in 2019.
Participants of the programme were targeted as a result of their quest in seeking avenues to promote, grow and develop their enterprises, which is a critical dynamic in an EES. Respondents were selected through convenience

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sampling; that is, the study subjects consisted of persons who were available and willing to take part in the research. Convenience sampling was employed because the study sought to explore the EES and proffer initial insights for further research, without the aim to generalise the findings to the entire population (Etikan, Musa & Alkassim, 2016; Valerio et al., 2016). A total of 44 respondents participated in the study, representing a response rate of 66 percent.

Semi-structured questionnaire was designed for data collection. The questionnaire contained, among other things, an EES scale that was developed by the authors with insights from reviewed literature. Inclusion of items in the EES scale was guided by the principle of ensuring that an item directly related to the entrepreneurial activities within the EES so that respondents could easily identify with the issues under investigation. Table 1 shows the constructs, measures and some sources that informed the creation of the variable list in the EES scale. The scale consisted of 15 items. Three of the items encompassed institutions while the remaining 12 items focused on the resource endowments of the EES.

Table 1: Constructs and measures

Constructs (factors and conditions)	Measures and examples of sources
Institutions	• Availability and quality of services by regulatory agencies (van de Ven, 1993; Adomako et al., 2015) • Availability and quality of BDS/support services (Ntiamoah et al., 2016; Stam & van de Ven, 2019) • Security of people and property (Kline et al., 2018)
Resource endowments	• Access to labour (Kline et al., 2018; Hechavarría & Ingram, 2019) • Access to raw materials (Nicotra et al., 2018; Stam & van de Ven, 2019) • Access to finance (Hechavarría & Ingram, 2019; Stam, 2015) • Services by utility companies (Kline et al., 2018; Nicotra et al., 2018) • Rent charges (Kline et al., 2018) • Availability and quality of road network (Spilling, 1994; Stam & van de Ven, 2019) • Access to equipment (Baidoo & Awuakye-Odum, 2016; Nicotra et al., 2018) • Demand for goods and services (Arruda et al., 2013; Nicotra et al., 2018)

Source: Authors' construct (2019)

Institutions connote rules of the game; that is enforcement of policies and rules that govern entrepreneurship and as such legitimise, regulate and incentivise entrepreneurship in the EES (North, 1990; van de Ven, 1993; Stam & van de Ven, 2019). The institution-related items consisted of services by regulatory agencies such as the Ghana Revenue Authority (GRA) and the Metropolitan Assembly, BDS and security of people and property because they serve as

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important means for the translation and implementation of relevant policies that affect entrepreneurship in the eco-system (Table 1).

Resource endowments included number and quality of road network, access to finance, access to labour, level of rent and demand, access to raw materials and access to experts who repair machines and equipment, as a proxy for access to equipment (Baidoo & Awuakye-Odum, 2016; Kline et al., 2018; Nicotra et al., 2018). Access to labour was measured with three items, namely availability of qualified, trustworthy and committed workers. Similarly access to raw materials was measured as the availability, quality and affordability of raw materials. The Cronbach's alpha of the EES scale was .87 which is above the acceptable threshold of .70, indicating strong internal consistency among the 15 items of the scale (Wadkar, Singh, Chakravarty & Argade, 2016).

Data collection took place in July and August 2019 at the convenience of the respondents. In all, 44 self-administered questionnaires were retrieved but seven of them were excluded from the data analysis because they were either scanty or the respondents were not specific with the location of their businesses. Descriptive analysis and exploratory factor analysis were conducted with the IBM SPSS Version 25.

F. Results and Discussions

Results and discussions are presented in this section. The presentation begins with background characteristics of the respondents of the study. This is followed by results and discussions of the entrepreneurial eco-system.

G. Background characteristics

Eight background characteristics of the respondents and their entrepreneurial activities were analysed. Total responses for all the variables were 37. The variables included the sex, age and educational level of the respondents. The remaining five characteristics comprised business status, years of operation, sector of operation, level of employment and business location. There were more males (75.70%) than females (24.30%). The mean age of the respondents was 36 years (SD = 9.07). The standard deviation shows that the age of the respondents was widely distributed about the mean with the age of most of the respondents appearing around the lower end of the distribution (skewness = 0.15). As shown in Figure 2, all the respondents had attained education with the majority (70.30%) having tertiary education while those with basic education (2.70%) and technical and vocational education (2.70%) formed the minority.

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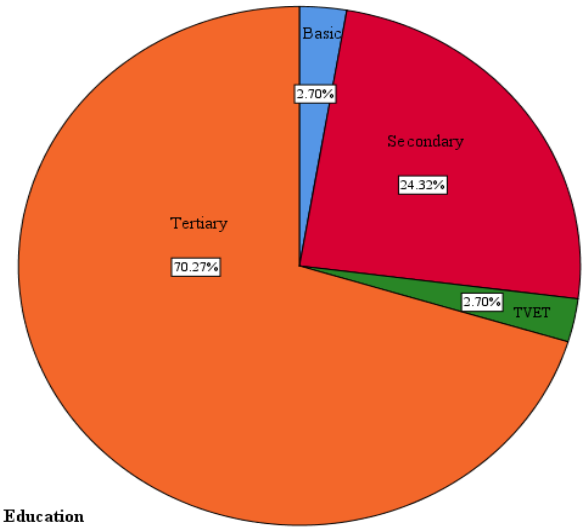

Figure 2: Highest Level of Education

Source: Fieldwork (2019)

The mean years of operation (3.94) coupled with high standard deviation (4.87), high skewness (3.03) and high kurtosis (12.35) mean that the age of the businesses were widely scattered about the mean with most of the ages below the mean age of 3.94, buttressing the fact that a greater percentage of the businesses were novice (57.58%), that is between 1 and 4 years (Figure 3). Further analysis showed that 30.30 percent of the businesses had been in existence for 5 years and above, while 12.12 percent of the businesses were nascent, that is at the start-up phase. The status of the businesses portrays inclusiveness of the president's business support programme in terms of embracing enterprises at various stages of the enterprise life cycle, thus with the aim of promoting entry, growth, survival and productivity of enterprises in the EES (Hechavarría & Ingram, 2018).

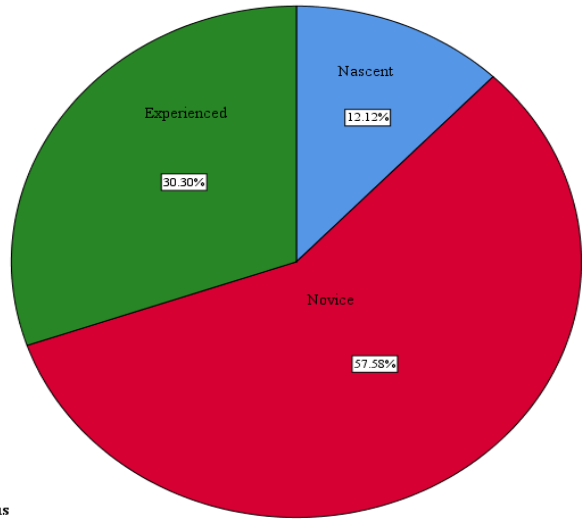

Figure 3: Business Status

Source: Fieldwork (2019)

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Relatively, more respondents were from the industrial sector (40.54%) with food processing and textiles production forming the predominant business activities while construction and software development were in the minority (Figure 4). The higher focus on the industrial sector reflects the government's priority to industrialise the Ghanaian economy through policy interventions such as the one-district-one-factory policy and one-region-one-industrial hub policy (Mensah, Dauda, Boamah & Salman, 2020; Obeng-Amponsah, Zehou & Dey, 2019). Figure 4 also shows that 35.14 percent of the respondents were engaged in agriculture while 24.32 percent were involved in the service sector. Farming was the leading agricultural sector activity while trading, education and transportation were typical service sector activities.

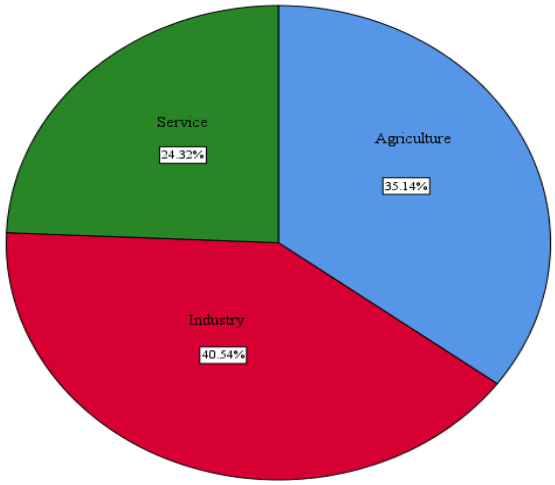

Figure 4: Sector

Source: Fieldwork (2019)

The mean employment was 4.2 workers but most of the businesses had less than 4 employees, specifically 1-2 employees as can be inferred from the skewness (3.99) and kurtosis (19.44) of the data distribution. Majority of the entrepreneurial activities (80%) were domiciled outside Cape Coast Metropolis and located in towns such as Elmina, Winneba and Kasoa, while the rest (20%) were situated within the Metropolis.

H. The entrepreneurial eco-system

The conceptual framework of the study (Figure 1) portrays the entrepreneurial climate of an EES to constitute factors and conditions, broadly categorised into institutions and resource endowments. The satisfaction of the respondents with institutions and resource endowment that directly relate to their entrepreneurial activities within the EES, were analysed to address the first research question of the study. The normality of the distribution of the EES data was within acceptable limits of ±2 skewness and below ±7 kurtosis (Kim, 2013), paving way for the mean to be reported as the measure of central tendency (Table 2). Descriptive statistics showed mean scores varying from 3.22 to 5.65, on a scale of 1, signifying least satisfaction, to 7, signifying highest satisfaction. Eleven factors had mean scores above the theoretical mean (M = 4), which is indicative of the fact that the respondents were satisfied,

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in various degrees, with those factors within the EES. As presented in Table 2, the factors, in descending order, begins with demand (M = 5.65) for the respondents' products and ends with services by regulatory agencies (M = 4.19) such as the Ghana Revenue Authority and the Metropolitan Assembly that enforce policies and laws on taxation and other related issues.

Table 2: Measures of the factors and conditions in the entrepreneurial eco-system

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Demand	34	5.65	1.515	-1.409	.403	1.919	.788
Security	37	4.76	1.770	-.625	.388	-.193	.759
Availability of Raw Materials	36	4.75	2.005	-.581	.393	-.794	.768
Utilities	35	4.74	1.738	-.399	.398	-.579	.778
Quality of Raw Materials	37	4.62	2.215	-.560	.388	-1.203	.759
Qualified Workers	37	4.51	1.693	-.006	.388	-1.075	.759
Committed Workers	36	4.50	1.828	-.178	.393	-.992	.768
Affordability of Raw Materials	37	4.41	2.047	-.359	.388	-1.121	.759
Trustworthy Workers	37	4.38	1.846	-.146	.388	-.834	.759
Road Network	37	4.24	1.754	-.165	.388	-.956	.759
Regulatory Agencies	36	4.19	1.802	-.122	.393	-.767	.768
Access to Repairers of Equipment	35	3.83	1.992	.014	.398	-1.105	.778
Rent Charges	34	3.50	1.863	.463	.403	-.530	.788
Finance	35	3.26	1.651	.436	.398	-.085	.778
BDS	36	3.22	1.726	.589	.393	-.070	.768
Valid N (listwise)	25						

Source: Fieldwork (2019)

The satisfaction of the respondents with the eleven factors within the EES signifies that the respondents have good impressions or experiences with demand for their products, security of people and property, access to raw materials, utilities and labour, and road network, which is the primary means of transportation in the EES, as well as services by the regulatory agencies. The findings corroborate the exhortation by Erastus et al. (2014) on the need to augment national EES surveys with regional and local surveys as there could be critical points of departure. For instance, contrary to the findings of this study, a related research by Mensah et al. (2019) at the national level, found access to skilled labour and regulatory framework among major challenges facing small and medium-sized enterprises in Ghana. The disparity could be attributed to the fact that the Central Region, as an educational hub in Ghana, has an ample pool of a versatile labour force that meets the current needs of its entrepreneurs.

Nevertheless, the fact that most of the mean scores tilted closely towards the theoretical mean (Table 2) points to the fact that there is more room for improvement in all the eleven variables. Regulatory burdens and high cost of utilities, for example, drive up costs of operation and often promote informality and tax evasion as established by Kamasa et al. (2019), and as reported by the World Bank (2019) in its 2018 doing business report. A brighter side to

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the findings is that although Ghana's business environment is generally considered far from being supportive of entrepreneurship (Adomako et al., 2014, Kamasa et al., 2019), the findings show that the EEs of the Central Region appears relatively attractive as it abounds in untapped business opportunities, and given the requisite purchasing power as evidenced by satisfaction with demand for products, the economic fortunes of the Region could be boosted through entrepreneurship development.

On the other hand, it is evident from Table 2 that four factors had mean scores below the theoretical mean suggesting that the respondents were not satisfied with them and, as a result, they pose as challenges to their entrepreneurial pursuits, in fulfilment of the second research question of the study. Thus, the respondents were not satisfied with the provision of BDS, access to finance, rent charges and access to repairers of equipment. The BDS market in Ghana is still evolving with government institutions, such as the National Board for Small Scale Industries and related Ministries such as the Ministry for Food and Agriculture, playing the dual roles of facilitation and service provision. BDS is generally known to help SMEs improve upon their performance, job creation, labour productivity and investment (Piza et al., 2016). In this regard, research by Ntiamoah et al. (2016) on the impact of support services, by government and other institutions, on firm performance revealed positive effects of BDS usage on the performance of the SMEs surveyed. It is, therefore, a step in the right direction that the respondents saw the need to access the BDS offered by the president's business support programme.

In addition to limited access to BDS, the other challenges are consistent with previous studies that established restricted access to finance (Koltai et al., 2013; Mensah et al., 2019), high rent charges (Akaabre, Poku-Boansi & Adarkwa, 2019) and limited access to requisite equipment and technology (Baidoo & Awuakye-Odum, 2016) as major challenges in Ghana's EES, particularly for MSMEs. Enterprises also have to grapple with high interest rates often within the range of 50 percent to 60 percent (Erastus et al., 2014). Finance and equipment and technology play critical roles in enterprise development. For example, finance serves as the primary medium of exchange in securing other requisite resources such as raw materials, rented premises, equipment and technology that are needed to operate an enterprise. These resources are, in turn, used in producing and or providing goods and or services that offer value to customers and competitive advantage to the enterprise. Thus, juxtaposing the important role that BDS, finance, rented premises and equipment and technology repairers play in enterprise development to their limited accessibility in the EES, implies that they are key challenges to the enterprises surveyed.

Factor analysis was conducted to ascertain the main EES factors that interact to explain the level of satisfaction of the respondents. With the exception of six items, the coefficients of the correlation matrix, produced through exploratory factor analysis, were within the conventional range of .3 to .7 (Pallant, 2011; Zikmund, Babin, Carr & Griffin, 2013). The six items included the three measures of access to labour and the three measures of access to raw materials which exceeded .7, signifying that each set of items measured the same construct. Consequently, as recommended in literature (Pallant, 2011), the respective items were transformed through averaging to arrive at single variables, namely, access to labour and access to raw materials. The rotated solution showed that the two

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components had several strong loadings of .4 and above, with each variable loading substantially on only one component except access to repairers of equipment which loaded strongly on both components but recorded the highest loading on the second component (Table 3).

Table 3: Factor loadings of the factors and conditions of the entrepreneurial eco-system

	Components	
	1	2
Access to Labour	.852	
Utilities	.733	
Security	.643	
Road Network	.619	
Regulatory Agencies	.613	.328
Demand	.561	
BDS		.866
Finance		.805
Rent		.587
Access to Repairers of Equipment	.466	.571
Access to Raw Materials	.334	.458
Eigenvalues	3.568	2.168
Total variance explained (%)	32.432	19.707
Cumulative variance explained	32.432	52.139

Source: Fieldwork (2019)

Six variables loaded strongly on component 1 with factor loadings from .852 to .561 which is an indication that the respondents, in their entrepreneurial pursuits, considered them as the most important set of factors in relation to their level of satisfaction with the local EES. The variables, in descending order, include satisfaction with access to labour, utilities, security, road network, service delivery by government regulatory agencies and demand for the respondent's product. Five variables with factor loadings from .866 to .458, loaded strongly on component 2 explaining 19.71 percent of the total variance. The factors are access to business development services, access to finance, rent charges, access to repairers of equipment and access to raw materials.

The findings suggest that the five factors strongly connect to influence the level of satisfaction of the respondents with their EES. Cross examination of the five factors in relation to the findings on the satisfaction of the respondents with their EES shows that, except access to raw materials, respondents were not satisfied with all the factors that loaded strongly on component 2. It, therefore, implies that the entrepreneurs are more likely to appreciate improvements in support services, access to finance, access to affordable rent and access to repairers of equipment when the factors are given due attention without compromising on any one of them. A further implication is that their level of satisfaction would encourage more entrepreneurial activities. Related studies, for example by Spilling

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(1996) and Stam and van de Ven (2019), showed that the prevalence of high-growth firms in a region is strongly related to the quality of its EES, buttressing the need for policy makers to consciously invest and build the EES. Apart from building high-growth firms, government policies and interventions for developing the EES have been found to be efficacious in promoting entrepreneurial activities among marginalised groups such as women (Hechavarría & Ingram, 2018).

Further inspection of the factor loadings, as presented in Table 3 showed that two measures of institutions, namely security of people and property, and services by regulatory agencies, loaded with resource endowment factors under component 1 while BDS loaded with other resource endowment variables under component 2. This is an indication of the inter-connectedness among the elements in the EES as captured in the conceptual framework in Figure 1. The findings support Stam and van de Ven's (2019) definition of the EES as consisting of inter-dependent factors and actors that enable or constrain entrepreneurial activities within a given territory. The need to promote effective and efficient institutions has been well acknowledged in literature. For example, Adomako et al. (2014) demonstrated, in a study of the institutional outlook in Ghana, that stronger antecedents of institutions lead to favourable entrepreneurial climate.

I. Conclusion

The purpose of this study was to explore the EES of the Central Region of Ghana. In line with that, the study sought to answer two research questions on the satisfaction of entrepreneurs with relevant factors in the EES and the challenges in the EES. Data collected, with a 15-item EES scale, from applicants of the 2019 president's business support programme revealed that respondents were satisfied, in various degrees, with 11 factors within the EES. The two leading factors were demand for the respondents' products and security within the EES while satisfaction with road network and services by regulatory agencies were relatively low. Respondents were not satisfied with four factors in the EES, which therefore pose as challenges to their entrepreneurial pursuits. The challenges, in order of magnitude, include access to BDS, access to finance, rent charges and access to repairers of equipment. Further analysis showed strong inter-connectedness among the factors in the EES.

On the basis of the findings, it is concluded that the entrepreneurs surveyed were satisfied with more factors in the EES of the Central Region while they were dissatisfied with relatively few factors in the EES but the factors with which they were dissatisfied, pose as major challenges to their entrepreneurial activities because they constitute resources and services that affect the survival and growth of MSMEs. As an exploratory study, the findings suggest that the entrepreneurial eco-system of the Central Region of Ghana is, to some extent, supportive of entrepreneurial activities but has major challenges. In order to achieve maximum outcomes, policy interventions should collectively address, at a time, factors that interact strongly to influence entrepreneurship within the system.

J. Limitations and Suggestions for Future Research

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The study has several limitations in scope and design. Being an exploratory study, the use of the applicants of the president's business support programme permitted a test of the constructed EES scale but future large-scale surveys are required to capture the perspectives of a representative sample of entrepreneurs in the Central Region. Thus, the limited scope does not permit generalisation of the findings of the study to the entire population of entrepreneurs in the Region. Moreover, the research design addressed only a section of the proposed EES framework, specifically environmental factors/entrepreneurial climate, and involved only one of the major actors in the EES, that is entrepreneurs. These gaps imply that the EES of the Central Region has to be studied extensively and from the viewpoint of the various groups of actors. Furthermore, test of relationships among the various elements of the EES can be the focus of future research.

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Personal Values and Electronic Waste Disposal Among Households in Cape Coast Metropolis

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Abstract

The study examined social values that accounted for electronic waste recycling and reuse behaviours. Via a cross-community survey of 193 of households in the Cape Coast Metropolis, a correlational design was employed in the study. Partial Least Squares-Structural equation modelling was used to analyse the data. Results from the analysis showed the influence of altruistic values ($\beta = 0.275$, $p < 0.05$) on reuse behaviour. Similarly, environmental awareness ($\beta = 0.213$, $p<0.05$) also showed significant influence on participation in recycling, whereas psychological ownership significantly influenced both reuse ($\beta = 0.319$, $p < 0.05$), and participation in recycling ($\beta = 0.339$, $p < 0.05$), The joint significance of altruistic values, environmental awareness and psychological ownership to explaining recycling participation was 21.3% ($R2 = 0.213$, $p < 0.05$) and that of reuse was 24.6% ($R2 = 0.246$, $p < 0.05$). The results of the study showed that individuals who are knowledgeable about the state of their environment were more likely to participate in recycling. On the other hand, individuals with altruistic values preferred giving unwanted electronic equipment to others for reuse. Altruistic values are particularly true of collectivist cultural orientation. Psychological ownership was significant in predicting both behaviours, however, the effect size on reuse was moderate. Psychological ownership due to waste aversion and frugality lead consumers to keep, and subsequently give to close relatives in their social network. It was recommended that individuals should be encouraged to patronize formal recycling services. as a way to show concern for the well-being of others by reducing pollution due to improper waste treatment. Again, like in developed economies, second-hand collection systems for unwanted electronic products can be developed, and made convenient for individuals with reusable items, who may be willing to donate or even resell.

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Introduction

The work of Dunlap and Van Liere (1978, 1984), on New Environmental Paradigm (NEP), propelled research in environmental studies distinguishing among behaviours and values that promote the general welfare of the biophysical environment. The NEP championed an ecological worldview called "environmentalism" which aimed to promote social progress and environmental welfare. Environmentalism attempts to encourage positive environmental behaviours, to avert environmental catastrophes popular among them is climate change which the entire globe is experiencing today. Bringing social order in human consumption and disposal related activities such as waste management has been a growing concern for both developed and developing economies.

Waste generation is a natural part of the biological life cycle of every living organism. The typical supply chain in a linear economy has been characterized by the one-way production system, where final goods end with consumers (Parajuly & Wenzel, 2017). Such production systems have been heavily criticized in the face of sustainability concerns across all circles. In contrast to the linear economy, end users are not only consumers of final products but, become the central and upstream suppliers of materials back into the production system in the circular economy. Circular economy practices at the household level have been codified into three main activities referred to as the waste hierarchy: reduce, reuse and recycle (Stahel, 2016; Geissdoerfer, Savaget, Bocken & Hultink, 2017). These activities have been popularised in the sustainability literature as the 3Rs. The 3Rs is conceptualised as a hierarchy where stakeholders are expected to "reduce" their waste generation or avoid waste where possible.

Waste cannot be avoided so far as we consume but can be reduced. Where one finds it impossible to reduce waste, the next most preferred option in the waste hierarchy is to "reuse" items or materials without any processing. For example, many household items can be cleaned or repaired to be reused, sold or gifted to other people. According to Parajuly & Wenzel (2017), such practices help to avoid the costs of energy and other resources required for recycling. In the stance where one cannot possibly reuse materials or items, the next option is to recycle. Recycling involves processing waste materials to make the same or different products. In the case where new items are of better quality, upcycling is used. St. James and Kent (2019), notes that upcycling, which is well resonated in the marketing literature as creative reuse, adds value to materials as they are created into new forms. Overall, reuse and recycling help keep materials in the productive economy, which benefits the environment by decreasing the need for new materials, consequently helping to conserve resources. Also, the 3Rs are not mutually exclusive. For instance, we can reduce waste generation by reusing items or associated components. Also, some materials recovered through recycling are used to refurbish or repair other items which are sold as second hand to be reused.

Within the space of electronic waste disposal, authors such as Alhassan et al., (2017); Echegaray and Hansstein (2017); Kianpour et al. (2017); Kumar (2019); Liu et al., (2019; Wang et al., 2019) have examined factors influencing individual's willingness to recycle from the perspective of the theory of planned behaviours. However, unlike, other types of solid waste such as plastic, owners of electronic products may still exercise possession even if it is not needed. Such feelings usually result from an attachment and emotional bonds created between the owner and the object over its lifecycle. Again, objects in our homes find themselves as part of our everyday routine. It is therefore important to consider the attachment processes and how it also influences reuse and recycling participation. Accordingly, empirical enquiry into electronic waste management should also examine the psychological ownership aspect.

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Meanwhile, Norm Activation Theory (Schwartz, 1977) and the Value-Belief-Norm theory of Environmentalism (Stern, 1999) has been used to predict environmentally significant behaviours such as an individual's willingness to participate in recycling and actual participation in recycling. Internalised normative values together with socially accepted standards of behaviour are linked to pro-environmental behaviours (Hedlund, 2011; Thøgersen, 2000). According to Schwartz, environmental awareness and helping values are important factors that influence pro-environmental behaviours. However, little is known on the interconnections among these social values, recycling and reuse behaviours. The purpose of the study was to examine the effect of environmental awareness, altruistic values and psychological ownership on recycling participation and reuse behaviour. The rest of the article is organized as follows: Literature review and hypotheses development, methods, analytical procedure and results, discussion, conclusion and policy contribution.

Literature review and hypotheses development

There is a growing awareness that disposal practices contribute to environmental problems such as air, land and water pollution (Kaplan, Henn, Park & Kurman, 2019; Alhassan, Asante, Oteng-ababio & Bawakyillenuo, 2017; Alhassan, Kwakwa, & Owusu-Sekyere, 2020), a decline in biodiversity (Cole et al., 2017; Parajuly et al., 2020b), and sustainability risk of rare earth metals (Ueberschaar & Rotter, 2015). Disposal practices are described as a consumer behaviour because, it is an immediate activity following consumption. In the waste management literature, individual perception towards waste disposal is described as a socio-psychological process, which is a consequence of the interplay of environmental, social, psychological and materialistic values. Accordingly, the Norm-Activation Theory of Altruism by Schwartz, (1970b, 1973, 1977 & 1994) is examined as basis for explaining disposal behaviour of individuals. Psychological ownership also explains the underlying theory behind the tendency to keep unwanted electronic possessions, especially when they are perceived to have some economic value, even when they are not in use. Consequently, Psychological Ownership Theory (Pierce, Kostova & Dirks 2001; 2003) is also examined.

Norm Activation

The Norm Activation Theory (NAT) by Schwartz (1973, 1977) has been adopted to examine pro-environmental behaviours such as adopting environmentally friendly transport, energy conservation and reuse behaviours. According to NAT, people in general, value environmental quality and accept the responsibility to care for it. Specifically, personal norms towards the environment lead to individual actions intended to ameliorate environmental quality. The activation of personal norms is largely known to occur through an internalisation mechanism involving awareness of the consequences of human activities on the biophysical environment. Personal norms, as described by Steg and Nordlund (2019), as the moral obligation to engage in or refrain from certain actions for the benefit of others.

Norm Activation Theory (Schwartz, 1977; Schwartz & Howard, 1984) holds that pro-environmental actions follow from the activation of personal norms. Personal norms are a product of awareness of consequences of behaviour and ascription of responsibility. Personal norms are stronger when people are aware of the problems their behaviour have contributed to and the moral obligation to reduce such negative impact. Again, it is stronger when people believe they have what it takes (i.e time, skills and resources) to contribute to reducing environmental problems.

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Drawing from the Value theory by Schwartz, (1992, 1994) and the New Environmental Paradigm (NEP; Dunlap, Van Liere, Mertig, & Jones, 2000), individuals exhibit a range of values. Out of these, four human values namely egoistic, bio spheric, altruistic and hedonic have been found to motivate individuals' consumption and disposal patterns. While egoistic and hedonic values are about the pursuit of self enhancement, bio spheric and altruistic values emphasise self-transcendence (Schwartz, 1994). Self-transcendence refers to state of treating others as equal and showing concern for their welfare. Altruistic values are socially cantered, where individuals pursue social and environmental goals. Armed with this assumption, the Norm Activation Model by Schwartz connects pro-environmental behaviours to altruistic value orientation (Stern, Dietz, & Kalof, 1993).

Altruistic value orientation was defined by Schwartz and Howard (1984, p. 229) as "self-sacrificial acts intended to benefit others regardless of material or social outcomes for the actor" In that study, arguments were put across as to what motivates helping behaviour. Schwartz & Howard (1981) maintains that an act that is motivated by the concern for the welfare of others is said to be an altruistic behaviour, to the extent that individuals take actions to contribute to such need. Described by Schwartz as helping value, individuals exhibit altruistic values, by donating unwanted electronic objects for the benefit of others. In the pro-environmental discourse, altruistic and bio spheric values accounted for significant pro-environmental actions. Beliefs about the impact of human activities on the environment and the effectiveness of one's action come into play between values and norms. Environmental norms influence sustainable actions. The Norm activation theory brings to fore the importance of environmental norms and altruistic behaviours to promote pro-environmental behaviours.

Empirical studies such as Barr (2007); Berglund, (2006); Hage et al., (2008); Miafodzyeva et al., (2013); Bissing-Olson et al., (2013) and Miliute-Plepiene et al., (2016) find moral norms to be a strong predictor of household recycling behaviour. Other studies have shown that altruistic value orientation influence people to engagement in pro-environmental behaviour. In Bissing-Olson et al., (2013) the authors investigate relationships between employees' daily affect, pro-environmental attitude, as well as daily task-related pro-environmental behaviour and daily proactive pro-environmental behaviour. Fifty-six employees working in small businesses completed a baseline survey and two daily surveys over ten workdays. They found that pro-environmental attitude positively predicted daily task-related pro-environmental behaviour. According to the authors, the results of their study suggest that fostering pro-environmental attitudes, and to some extent, positive affect among employees, could help organizations promote pro-environmental behaviour in the workplace. Similar findings are reported by Miliute-Plepiene et al., (2016), who found that depending on the growth of the recycling industry, the type of norms that influence behaviour differs. Specifically, they found that strong environmental norms are key when factors that make waste management convenient are under-resourced.

In Bissing-olson et al., (2016) an experiment conducted to test university students' engagement in pro-environmental behaviours over a three-day period found that pro-environmental behaviours such as avoiding littering and engaging in recycling were found among those who felt proud when engaging in environmentally friendly behaviours. Similarly, Onwezen et al., (2017) extending the Norm Activation Theory examined the role of anticipated pride and guilt, which is the basis of altruistic behaviours. From the analysis of 617 responses, collected through an online survey, it was

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reported that anticipated pride and guilt was confirmed by their study, and anticipated emotions mediated the effects of personal norms on behaviour.

Also, Park and Ha (2014), found that awareness of consequences influenced intentions to recycle, and also contributed to a positive attitude towards recycling. According to Miliute-Plepiene et al. (2016), an individual's fear of guilt and a bad conscience acts as a deterrent for behaviour that does not conform with his/her internal moral norms or to behave in a certain way. The authors state that people are generally more prone to think about themselves as socially responsible and, thus, are more likely than not to act in an altruistic way (Schwartz, 1977). Thus, it is expected that awareness of consequences of disposal practices will influence recycling and reuse behaviours.

Zhang, Liu and Zhao (2018) studied environmental complaint behaviours of selected citizens using the Norm Activation Model. Their findings are consistent with Miliute-Plepiene et al., (2016). According to the authors, the immediate predictor of environmental complaints was personal norms, whiles awareness of consequences was found to either directly trigger personal norm or to indirectly influence personal norm through the mediation of ascribed responsibility. In a related study by Wang, Wang, Zhao and Yang (2019), resident's awareness of consequences of not separating waste is positively and significantly associated with ascription of responsibility, and both of them are positively and significantly related to personal norm. Personal norm is positively associated with resident's waste separation intention. Similar to Wang, Zhao & Yang (2019), it was revealed that the association between awareness of environmental consequences of behaviour and personal norms was the strongest, and personal norm was the most influential determinant of pro-environmental binning behaviour (Esfandiar et al., 2020). From the discussions one can conclude that altruistic values and awareness influence recycling and reuse behaviours. Therefore, non-directional hypotheses were developed as follows:

Ha 1: Altruistic values has effect on recycling participation

Ha 2: Altruistic values affects reuse behaviours

Ha 3: Environmental awareness influences recycling participation.

Ha 4: Environmental awareness influences reuse behaviour.

Psychological ownership

Psychological Ownership Theory by Pierce, Kostova and Dirks (2001; 2003), entails the development of possessive feelings for targets of psychological attachment. This phenomenon has been cited to cause possessive feelings towards inanimate objects, and cause people to keep objects even when they longer need them. Waste aversion behaviours have been examined in the literature to be caused by frugality, creative reuse and general concern for the environment (Haws et al., 2012). Individuals who keep their objects even when they are not reusable usually have the desire to be careful with the use of economic resources, think about new ways of reuse and general concern for the environment. The logic behind it is that so long as people become attached to their possessions, they are more likely to handle the product with care, postpone its replacement or disposal, and repair it when it breaks down (Van Nes & J. Cramer 2006, Mugge 2007, Ramirez, Ko & Ward 2010; Cole, Cooper & Gnanapragasam, 2016).

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The purchase of electronic appliances for our homes and personal use leads to both legal and psychological ownership. It is believed that the "mine" feeling causes individuals to temporary or permanently store their waste electronic appliances. However, in line with the frugality argument of Haws et al., (2012) the tendency to keep waste objects could also be motivated by creatively reusing parts for other purposes or passing on to others for reuse. Again, concern for the environment may cause individuals to keep waste objects awaiting an opportunity to properly discard. The relationship between consumers and their possessions creates psychological and social resonance which requires physical and emotional detachment once disposal intentions ignite (Cherrier, 2009). Disposal of possessions is considered as fundamental activity and critical for subsequent purchase.

Reuse and recycling have implications for businesses, society, and the environment. These methods of disposal lead to the flow of possessions from one to another that generates positive social, economic and environmental impact. Disposal of unwanted products from households increases the orderliness of closets and promote the individual's psychological wellbeing (Cherrier, 2009). Besides, disposal leads to the purchase of new products (Cruz-Cardenas, Gonzalez, & del Val Nunez, 2016; Lang, Armstrong, & Brannon, 2013), which is important from a marketing perspective. Finally, the choice of disposal methods determines whether the product continues to circulate among other consumers or relegated to garbage dumps and landfills (Bianchi & Birtwistle, 2010; Cole et al., 2017). The relationship between psychological ownership and reuse behaviours have been documented. Jussila et al., (2015) found psychological ownership leads to positive evaluations about a product which also influences preference for continued use of a product or a brand. When consumers express psychological ownership of an object, their evaluations of that object increase (Kwok et al., 2018; Steketee et al., 2003). Based on these arguments, the following hypotheses were developed for empirical examination.

Ha 5: Psychological ownership influences recycling participation

Ha 6: Psychological ownership influences reuse behaviours

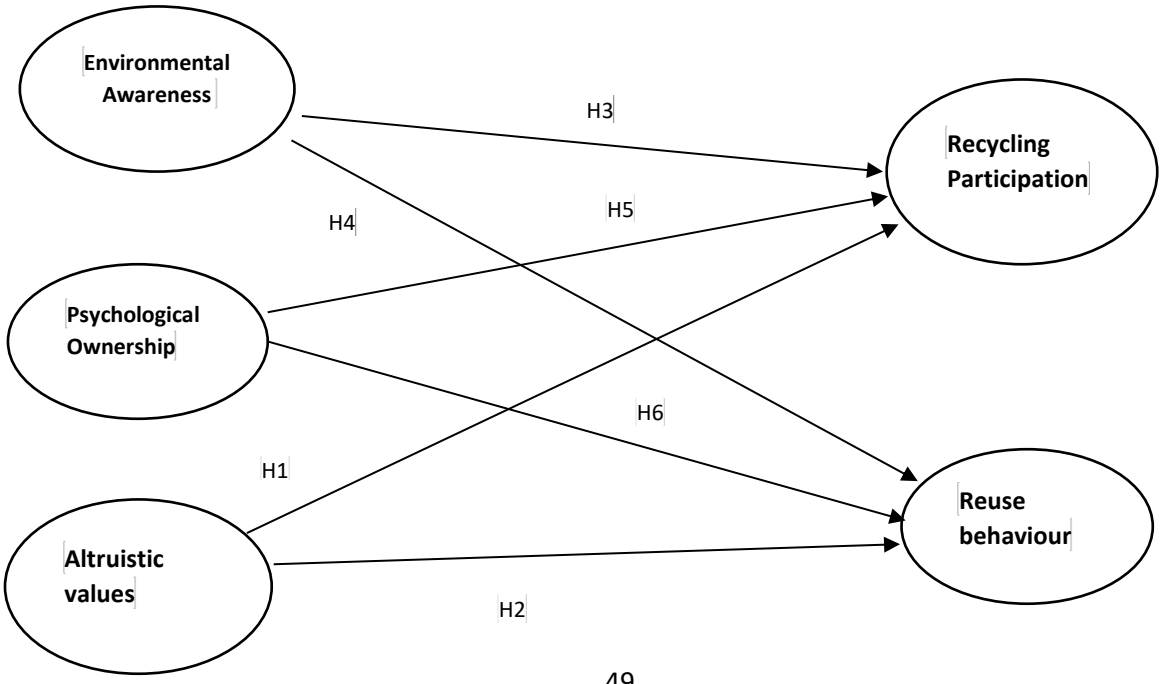

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Figure 1: Conceptual framework constructed based on review of the literature.

Materials and Methods

The study employed a correlational design. The population of the study comprised households in the Cape Coast Metropolis. The map in figure 2 shows the areas where the data was collected. Some of the questionnaires were administered by research assistants because of the language barrier. Consequently, rigorous checking of scores was done to ensure researcher biases and social desirability did not affect the data and the results. The statistical technique used was Partial Least Squares-Structural Equation Modelling (PLS-SEM).

The choice of this technique was based on its exploratory nature by allowing researchers to explore patterns in data to contribute to theory (Wong, 2013). In addition, PLS-SEM performs relatively well when a study is 'limited' by a smaller sample and data failing to meet normal distribution which is required in CB-SEM (Hair, Hult, Ringle & Sarstedt, 2017). The technique is more relaxed with distributional assumptions of data (Hair et al. 2014). Minimum sample size requirement for partial least squares structural equation modelling is relatively lower because of the technique high statistical power even for smaller sample size (Hair Jr et al., 2014; Sarstedt et al., 2014). The data was processed with SmartPLS 3 (Ringle, Wende, & Becker 2015).

The minimum sample size was determined by considering a significance level of 5%, a statistical power of 80%, an R2 value of at least 25% and the maximum number of arrows pointing at each dependent variable, which in this case were three (Hair et al. 2014). From Cohen (1992) sample size table, the minimum sample required, considering all the assumptions, was 37. However, the sample size was increased to cater for non-response as proposed by scholars in consumer research (Baruch & Holtom, 2008). A total of 300 questionnaires were subsequently sent out of which 193 usable questionnaires were used for the final analysis. A response rate of 64.3% was achieved.

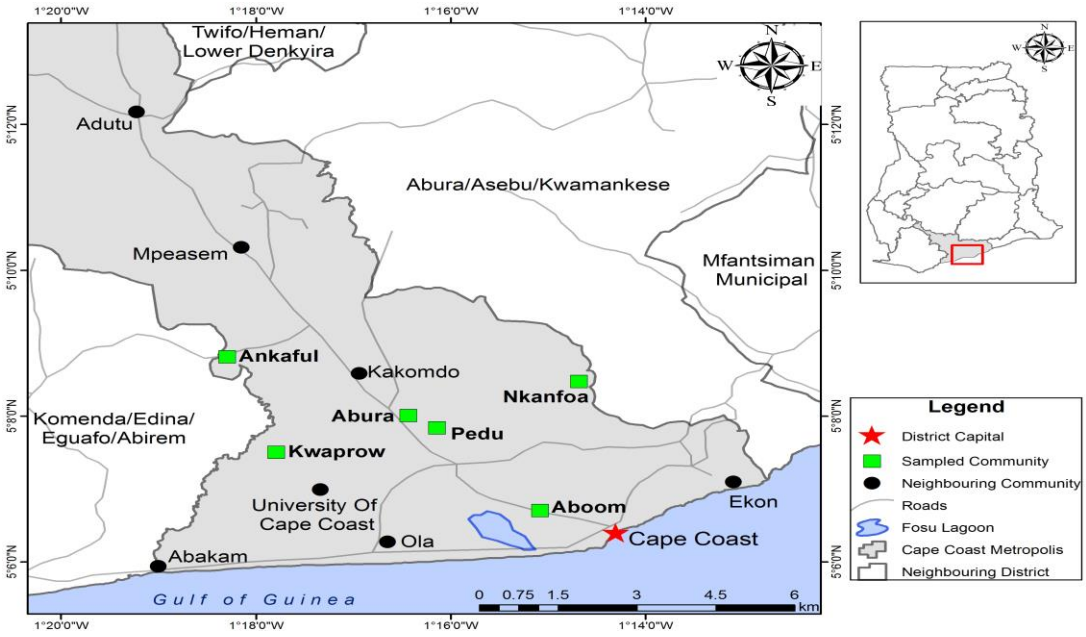

Figure 2: Map showing areas in the Cape Coast Metropolis where data was collected.

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Results and Discussion

Descriptive Statistics of Respondents

The descriptive statistics of the respondents include sex, type of residence and occupation. The sample included 96 (49.7%) males and 89 (46.1%) females. The rest did not indicate their sex. Also, respondents with tertiary educational status were 148 (76.7%). Those with no formal education were 11 (5.7%), primary 4 (2.1%), senior high school and vocational 26 (12.9%). In terms of occupation, 61 (31.6%) were professionals including lawyers, lecturers, accountants etc. The next highest category was service and sales workers which recorded 25 (13.0%). 18 (9.3%) are clerical support workers. Others are elementary occupations 20 (10.4%), craft and related trade 16 (8.3%), technicians and associate professionals 13 (6.7%) and skilled Agric/fisheries workers 18 (9.3%). About 22 (11.4) respondents did not indicate their professions. These categories of occupation are guided by the Ghana Living Standards Survey, (2014).

Table 1: Data distribution characteristics

Items	Mean	Standard Deviation	Excess Kurtosis	Skewness
ATT1	4.896	1.923	-0.902	-0.525
ALT9	5.534	1.651	0.958	-1.249
ALT10	6.031	1.318	2.962	-1.69
ALT19	5.803	1.816	1.274	-1.577
EA1	5.677	1.762	0.658	-1.325
EA2	5.796	1.523	1.242	-1.371
EA4	5.848	1.539	1.698	-1.479
EA5	5.503	1.669	0.373	-1.08
EA7	5.853	1.472	0.723	-1.213
EA8	6.058	1.444	1.83	-1.584
EA9	5.853	1.508	1.681	-1.447
OA2	4.267	2.069	-1.178	-0.248
OA3	4.09	2.087	-1.26	-0.201
OA5	4.217	2.086	-1.283	-0.175
OA6	4.476	1.944	-0.931	-0.441
OA7	4.272	1.922	-0.964	-0.241
OA8	4.257	2.11	-1.225	-0.285
SD3	4.305	1.881	-0.875	-0.372
SD7	4.900	1.834	-0.389	-0.728
SD8	5.011	1.817	-0.489	-0.736
SD9	4.526	2.074	-1.132	-0.396

Table 1 also presents the distribution of data. Although, normality assumption is not required for PLS-SEM analysis, one must also ensure data possess acceptable characteristics such as absence of outliers and collinearity (Hair et al.,

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2010). The table shows the mean, standard deviation, excess kurtosis and skewness. The skewness of a normally distributed data is 0 and kurtosis equal to 3. Excess kurtosis is determined by deducting 3 from the kurtosis. So essentially, excess kurtosis of a normally distributed data should also be 0. The data did not deviate so much from a normal distribution, which is usually the case with most primary data-based surveys in social sciences.

Assessment of measurement model

The quality and predictive power of the model was assessed via indicator reliabilities, AVE, Fornell-Larcker, R-square (R2), Q-square (Q2) and F-square (f2) values. Table 1 presents the reliability and quality indicators of the measurement model. The threshold value for composite reliability is 0.7 and 0.5 for the average variance extracted (AVE) (Hair et al., 2014; Henseler, Hubona, & Ray (2016)

Table 2: Quality assessment: Construct reliability, Validity, R square (R2), Q-square (Q2) and F-square (F2) values.

	Composite Reliability	**Average Variance Extracted (AVE)**	***Adj. R^2***	***F^2***		***Q^2***	***Collinearity***	
				Recycling participation	***Reuse***		***Recycling participation***	***Reuse***
Altruistic Behaviour	0.827	0.614		0.020	0.063		1.589	1.589
Environmental awareness	0.931	0.628		0.036	0.015		1.586	1.586
Psychological ownership	0.892	0.580		0.128	0.151		1.009	1.009
Recycling Participation	0.805	0.582	0.213			0.106		
Reuse	0.740	0.587	0.246			0.112		

The traditional criterion, which has been used for assessing internal consistency of an instrument is Cronbach's Alpha (CA). However, PLS-SEM offers a more intuitive approach because CA is sensitive to the number of items in the scale. Cronbach Alpha assumes that all the indicators have equal outer loadings on the construct which is not always the case (Hair et al, 2017). Composite reliability overcomes this limitation by ranking the indicators according to their reliability in the model estimation. The threshold value for composite reliability is 0.7 and 0.5 for the average variance extracted (AVE) (Hair et al., 2014; Henseler, Hubona, & Ray (2016). From table 2, the minimum threshold was achieved for all the constructs. Average variance extracted is an indication of how well the indicators measure their underlying construct.

Table 3: Fornell-lacker

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	Altruism	Environmental Awareness	Psychological ownership	Recycling	Reuse
Altruism	**0.784**				
Environmental awareness	0.605	**0.793**			
Psychological Ownership	-0.054	0.029	**0.762**		
Recycling	0.272	0.319	0.317	**0.763**	
Reuse	0.338	0.312	0.328	0.482	**0.766**

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**Numbers in bold are the square root of AVE, non-bold numbers are the correlations among the constructs.

Table 3 also presents another test of discriminant validity as proposed by Fornell Larcker (Fornell & Larcker, 1981). With the Fornell Larcker criteria, the square root of the AVE should be higher than the highest correlation between the underlying construct and other constructs. This was achieved as all numbers in bold were above the correlations between the construct and other constructs.

Assessment of the Structural Model

Assessment of the structural model in PLS-SEM is aimed at establishing a model's ability to predict the endogenous variables or constructs. It followed a procedure suggested by Hair et al (2017). In the first stage, the structural model was examined for collinearity. Then the significance of the path coefficients was determined. The predictive power

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of the model (coefficient of determination, R2) followed by an assessment of the effect size (f 2), and the predictive relevance (Q2) were assessed. As a measure of the overall goodness of fit of the structural equation, an overall coefficient of determination, R2, f2 and Q2 was used to assess the stability of the model. This is shown in Table 2

PLS-SEM is a non-parametric, so it relies on a nonparametric bootstrap procedure to test the significance of various results such as path coefficients, Cronbach's Alpha, HTMT, and R^2 values (Hair et al., 2011; Hair Jr et al., 2014; Wong, 2013). In this study, the bootstrapping procedure was used to assess the significance of the path coefficients and R2 values (Hair et al. 2017). The estimations from the bootstrap subsamples are used to derive standard errors for the PLS-SEM results. With this information, t-values, p-values, and confidence intervals are calculated to assess the significance of the structural model relationships. The results of the bootstrap procedure are shown in table 4.

Following the structural model assessment procedure, there is a need to check the model for collinearity. Multicollinearity is observed when there are several correlations of sufficient magnitude which together would predict a large percentage of the variance in the dependent variable. The inner VIF values checked for collinearity issues. Multi collinearity was measured by variance inflation factors (VIF). VIF values exceeding 4.0 or tolerance < 0.2 is an indication of multicollinearity (Hair et al., 2010). The data did not have multicollinearity.

Figure 3: Path Model

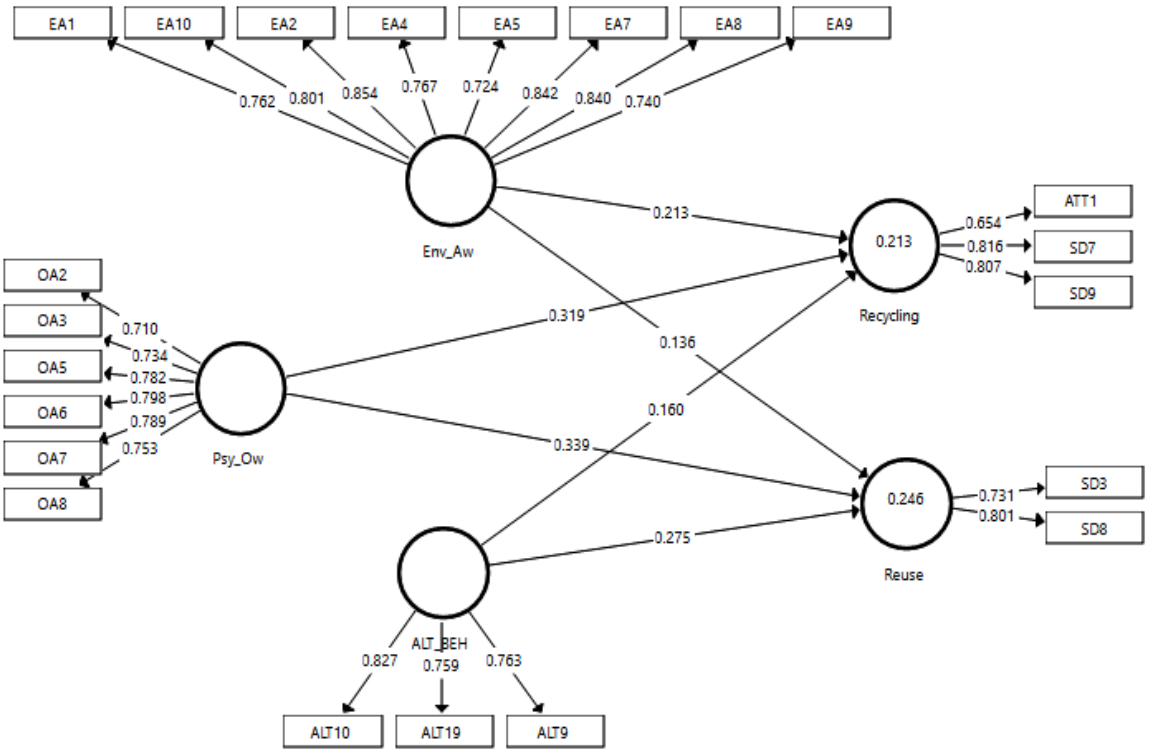

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Table 4: T-Statistics of Path Coefficients

	Path coefficient	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	95% Confidence intervals	Significance (P<0.05)
Altruism -> Recycling Participation (H1)	0.160	0.082	1.945	0.052	[-0.023, 0.303]	No
Altruism -> Reuse (H2)	0.275	0.098	2.805	0.005	[0.056, 0.448]	Yes
Environmental awareness -> Recycling Participation (H3)	0.213	0.086	2.487	0.013	[0.044, 0.383]	Yes
Environmental awareness -> Reuse (H4)	0.136	0.104	1.297	0.195	[-0.068, 0.342]	No
Psychological ownership -> Recycling participation (H5)	0.319	0.074	4.296	0.000	[0.153, 0.448]	Yes
Psychological ownership -> Reuse (H6)	0.339	0.076	4.442	0.000	[0.156, 0.467]	Yes

Source: Ofori, 2020

The path coefficients have standardised values approximately between -1 and +1. The closer the estimated path coefficient to 1, the stronger the predicted relationship. On the other hand, the closer the estimated coefficients are to 0, the weaker the relationships. Observation of the coefficient shows positive relationships among all constructs, and the statistical significance of these relationships are confirmed by the P values and confidence interval estimates. Table 4 presents the results of bootstrapping procedure. Out of the six alternative hypotheses, four of them: H2 (0.005, $p<0.05$), H3 (0.013, $p<0.05$), H5 (0.000, $p < 0.05$) and H6 (0.000, $p < 0.05$) were statistically significant.

The Adj. R2 shows the amount of variance in the endogenous construct explained by the exogenous constructs. From table 1, the joint significance of the three exogenous factors in explaining recycling participation was 21.3% ($R2 = 0.213$, $p < 0.05$) and that of reuse was 24.6% ($R2 = 0.246$, $p < 0.05$). Overtime, research reports have mainly

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emphasized on statistical significance by examining P values and overlooking the magnitude of effects. Effect size represented as f2 shows how much variance each exogenous variable contributes to a model. Assessment of effect size is important for policy and resource allocation implications. f2 is interpreted according to Cohen (1988) effect size threshold which is given as: $0.02 \leq f2 \leq 0.15$ as weak effect, $0.15 \leq f2 \leq 0.35$ is moderate effect, $f2 \geq 0.35$ shows a strong effect. From table 1, psychological ownership was the only construct that achieved a medium effect size on reuse behaviours. Altruistic behaviour and Environmental awareness achieved small effect size on the endogenous construct.

Discussion

Circular resource management include practices aimed at reducing, reusing and recycling (Stahel, 2016; Geissdoerfer, Savaget, Bocken & Hultink, 2017). The Norm Activation and Psychological Ownership Theories were used to examine how households managed their electronic waste through recycling and reuse. Electronic waste management has dire consequences on our environment, however, the extent of individuals' environmental actions such as engaging in proper recycling depends on the awareness of the problems their behaviour has contributed to and the acceptance of personal responsibility. It was also found that the extent to which people value and attach meanings to their possessions also influence their willingness to relinquish unwanted electronic possessions.

So, in this study, the effect of awareness of the environmental consequences of waste management behaviours on recycling participation and reuse were examined. Environmental awareness ($\beta = 0.213$, $p<0.05$) showed significant influence on participation in recycling. These findings were supported by Miliute-Plepiene et al., (2016). Wang, Wang, Zhao and Yang (2019), who found that awareness of consequences of not separating waste is positively and significantly associated with ascription of responsibility and both were positively and significantly related to personal norms towards waste separation intention. Thus, awareness is key to generating pro-environmental behaviours as hypothesised by the Norm Activation Theory. Again, Environmental awareness ($\beta = 0.136$, $p>0.05$) did not influence reuse behaviours. The results of the study showed that individuals who are knowledgeable about the state of their environment were more likely to participate in recycling than to give out old or reusable electronic appliances to other people to reuse. Similar to Wang, Zhao & Yang (2019), it was revealed that the association between awareness of environmental consequences of behaviour and personal norms was the strongest, and personal norm was the most influential determinant of pro-environmental binning behaviour (Esfandiar et al., 2020).

Second, the influence of psychological ownership on recycling and reuse was also tested. Recall that psychological ownership brings out the emotional attachment aspect of the human-object relationship (Haws et al., 2012). The results showed that psychological ownership (PO) significantly influenced both reuse ($\beta = 0.319$, $p < 0.05$), and recycling participation ($\beta = 0.339$, $p < 0.05$). According to Pierce, Kostova, & Dirks, (2003), psychological ownership refers to a state in which an individual perceives that an object is "theirs" regardless of actual physical or legal ownership. When consumers express psychological ownership of an object, their evaluations of that object increase. This is evidenced by empirical studies by Peck and Shu (2009); and Jussila et al. (2015).

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Therefore, it was not surprising when psychological ownership showed a significant influence on reuse behaviours because the positive evaluation of electronics appliances even when it is broken causes consumers to spend time and efforts trying to fix it or keeping them for the benefit of others. Haws, Naylor, Coulter and Bearden (2012) describes such individuals who keep unwanted possessions most likely are frugal and creatively finds new ways of using unwanted materials. On the other hand, high psychological ownership would normally be expected to delay the channelling of unwanted items for recycling. Recycling refers to conscious effort to separate electronic waste and channel to right collection point perceived as safe for handling such waste. So essentially, consumers who exhibit psychological ownership, that lead to product retention, will keep unwanted electronic appliances even if they do not find current use (Haws, Naylor, Coulter and Bearden, 2012). However, from table 4, psychological ownership positively and significantly influenced recycling participation. The argument is that respondents viewed recycling as proper means of preventing their waste from ending on the dumpsite. Parting away with possessions that are still perceived to be valuable was likely to occur when respondents perceived the disposal process as satisfactory. In Ghana and other developing countries, waste management has been characterized by house-to-house collections and openly dumping collected waste at designated landfill sites, and so consumers with more valuable, yet unwanted possessions will prefer divesting to formal recycling centres, where they trust personal data and private information, for example, would not be compromised.

Finally, altruistic behaviours were also examined in light of reuse and recycling behaviours. Altruism has been defined by Schwartz & Howard, (1984, p. 229) as "self-sacrificial acts intended to benefit others regardless of material or social outcomes for the actor". When personal norms reflect in positive behaviours, it has been described as altruistic behaviour. These are values that have been described by Schwartz, (2012) as "others-centred" and not "self-centred". Altruism is also referred to as self-transcendence. The effect of altruism on recycling participation was not supported ($\beta = 0.160$, $p > 0.05$). Meanwhile, effect of altruism on reuse was statistically significant ($\beta = 0.275$, $p < 0.05$). These findings, perhaps, is a further reflection of the sharing and donation culture associated with collectivists societies (Paez & De-juanas, 2015).

Policy implications

The study sought to contribute to disposal practices of households, return of reusable products and reuse literature. It also provided manufacturers to leverage consumers' psychological ownership behaviours to improve the collection of reusable products. As part of policy implication, awareness programmes should be developed to help people understand the effect of their disposal practices on the environment. Also, to boost electronic waste recovery programmes, especially for reusable products, (either by state government or manufacturers) adequate incentives can boost disposal of products that are attractive for reuse. Again, like in developed economies, second-hand collection systems for unwanted electronic products can be developed, and made convenient for individuals with reusable items, who may be willing to donate or even resell. Again, where products still work, people should be motivated to extended use of products by sending to manufacturers for refurbishment, thus reducing the need for

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further purchases. This could be achieved through incentive schemes such as rebates or discounts for future purchases.

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Tourism Entrepreneurship in Rural Ghana: Opportunities and Concerns

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Abstract

The role of tourism entrepreneurship in rural development continues to be a subject of interest and debate among academia and practitioners. Theoretically, it is anticipated that tourism entrepreneurship will lead to livelihood diversification, enhancement and ultimately a revitalization of the rural economy. While tourism is posited as an accessible entrepreneurship pathway, there is a dearth of information regarding rural dwellers' actual experiences with it, especially within the Ghanaian context. Using a case study approach and qualitative data from Wli; a rural tourism destination in Ghana, this paper delves into the opportunities and concerns associated with tourism entrepreneurship in rural areas. Data was obtained between November and December 2016 from 27 persons who were either tourism enterprise owners or employees. Findings from the study showed that entrepreneurial activities centred on the provision of accommodation, food and beverage, souvenir and guiding services. The nature of the activities enabled easy transfer of existing skills and knowledge. Further, entry into tourism entrepreneurship was perceived to be easy by the majority of study participants. These findings confirm the potential for tourism to be employed in boosting entrepreneurial activities in rural areas. Nevertheless, there were concerns regarding access to credit, institutional support, unhealthy competitions, low incomes, unguaranteed pensions, and seasonality and skewness of demand. These concerns threatened the growth and sustainability of tourism entrepreneurship within the community. From a policy perspective, there is a need for institutional recognition and support for tourism entrepreneurial intentions and activities in rural areas. Practice-wise, credit facilities need to be designed specifically for tourism-related rural enterprises. Further, periodic skills and knowledge augmentation programmes must be initiated to help expand the skill sets for the rural entrepreneurs. Finally, there is a need for the formation of trade-related networks to provide a platform for knowledge and experience sharing among the entrepreneurs.

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1.0 Introduction

Rural areas are being confronted with several challenges which makes it difficult for them to make significant progress economically, socially, or politically (Lane, 1994). Over the years, rural areas have seen a decline in agricultural activities and farm incomes with the accompanying issue of rising threats of food insecurity. These issues coupled with high poverty levels and increasing out-migration of the youth has contributed to the fragility of rural economies (Bock, 2016; Khan, 2001; Liu, 2006; Olinto, Beegle, Sobrado & Uematsu, 2013). The fact that an estimated 79% of the global poor are in rural areas (Olinto et al, 2013) further accentuates the need for conscious efforts toward improving the lives of rural dwellers.

It has been suggested that entrepreneurship is an engine of growth which can aid open up rural areas for development (Nagler & Naude, 2014; Boohene & Agyapong, 2017). According to McGehee and Kline (2008) 'entrepreneurship harmonizes with the philosophy that problems are best solved by solutions generated from inside the community' (p. 123). They further argued that entrepreneurship is very adaptive for rural areas. Within the context of rural areas, entrepreneurship is conceptualized as "entrepreneurship emerging at village level and takes place in a variety of fields of endeavor such as business, industry, agriculture, and acts as a dominant factor for economic development" (Shettey et al., 2015).

Over the last three decades, there has been a lot of attention on the use of tourism as a rural development strategy (e.g. Page, Brunt, Bushy & Connell, 2001; Sharpley & Telfer, 2015; United Nations World Tourism Organisation, 2015). Tourism has been perceived as an accessible pathway for local entrepreneurship and overall economic development (Ateljevic & Page, 2009). Theoretically, tourism entrepreneurship in rural areas is expected to bring about innovations and change which will ultimately lead to economic development (Nemirschi & Craciun, 2010). In further justifying this position, advocates have opined that tourism requires a relatively low start-up capital and can provide rural dwellers with an alternative source of income (Ashley, 2000). Additionally, it can create both forward and backward linkages with the local economy (Sharpley & Telfer, 2015). Nevertheless, a number of tourism scholars have written extensively on the challenges of tourism entrepreneurship in rural areas including location of businesses, low profits (Siemens, 2007), inadequate access to funding (Ateljevic & Doorne, 2004), seasonality (Getz & Nilsson, 2004), and inadequate skilled human capital (Liu, 2006). These have implications for the sustainability of tourism enterprises in such spaces.

Despite the relevance of these findings in advancing understanding and support for tourism entrepreneurship in rural areas, research focus on rural dwellers' experiences especially within the Sub-Saharan African context seems to be limited. It is against this backdrop that this paper seeks to explore the actual experiences of rural dwellers who are engaged in tourism entrepreneurship within a rural setting in Ghana. Specifically, the paper focuses on entrepreneurial opportunities available to rural dwellers as well as concerns of tourism entrepreneurs in a rural space. Since the study is situated within the Sub-Saharan African region, the nuances of tourism entrepreneurship in that context will be highlighted. This will be a significant contribution to knowledge. Practice-wise, the findings will

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provide useful information to tourism policy makers and planners, and other stakeholders on the needed support for tourism entrepreneurship in rural areas.

1.1 The Context

Tourism in Ghana is not a recent phenomenon. Over the years, the country established itself as a key tourism destination within the West African sub-region (Teye, 2000). Because it is a priority sector for the country, a number of policy documents have been formulated to guide its development. The more recent one is the National Tourism Development Plan (2013-2027). At the core of these plans and policies is the desire by government to use tourism as a tool to achieve macroeconomic objectives and rural development (Akyeampong, 2011). In the country's medium-term development agenda framework for the period 2014-2017, tourism is equally recognised as one of the prospects for the socio-economic transformation of the economy (National Development Planning Commission – Government of Ghana 2014).

Accordingly, a number of tourism projects have been initiated at the community and district levels to develop tourism in rural Ghana, where most of the country's natural and cultural attractions are based. These varied efforts are aimed basically at offering opportunities for rural livelihood enhancement through tourism. The 1996 and 2005 collaborations between Nature Conservation Research Centre (NCRC), United States Peace Corps – Ghana, Ghana Tourism Authority (GTA), Netherlands Development Organisation (Ghana), and selected communities with funding assistance from United States Agency for International Development (USAID) is a typical example of such efforts. The Mognori Eco-village and Wechiau Community Hippo Sanctuary projects in Northern Ghana, the Boabeng-Fiema Monkey Sanctuary project in Brong Ahafo Region and the Ghana West Coast project in the Western Region share similar motives.

1.1.1 Study Setting

Wli is one of the agrarian communities located within the Hohoe Municipality of Ghana. The community is found within the wet-semi-equatorial climatic zone and has an annual rainfall ranging between 1.016 mm and 1.210 mm. It is also within the forest-savannah transitional ecological zone which has several natural resources suitable for tourism development. On the north-eastern side of the study area is the Akwapim Togo range which extends to Western Nigeria. This range has the highest altitude in the country and is home to Mt. Afadja, the highest point in Ghana (880.3 meters above sea level) and the Wli waterfalls which is the highest waterfall (about 80 meters) in West Africa.

The community is also into the cultivation of tree crops such as cocoa, coffee and oil palm in addition to other crops such as maize, plantain, banana, cassava and cocoyam. Livestock rearing is also popular in the community. Tourism, stone cracking, sand mining, petty trading and carting goods across the border to and from Togo are other non-agricultural activities that people engage in. The community has one of the most visited ecotourism sites (the Wli waterfalls) in the country. This perennial waterfall is the most visited attraction in the Volta region of Ghana and is open to visitors all year round (Ministry of Tourism, 2013).

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2.0 Methods

2.1 Data Collection and Analysis

This data is part of a PhD study. Data was solicited from a total of 27 study participants who either owned or were employed in tourism enterprises in Wli, Ghana. Data collection took place between November and December 2016. Data was collected with the aid of an in-depth interview guide and an observation checklist. No sample size was assigned apriori. Study participants were identified through snowballing. And individuals who were available and willing to participate in the study were interviewed. Data saturation was used to determine the end of the collection phase. In qualitative research, saturation is reached when no new themes or responses emerge which are significantly different from earlier responses or themes (Griffin, 2000).

Face to face interviews which averaged 50 minutes were conducted. Majority of the interviews were tape recorded and later on transcribed verbatim. Participants who declined to be recorded had their responses written down as the interviews progressed. A field notebook and a photo camera were also used to document observations on the field. For the participant observations, the researcher engaged study participants by visiting them at their places of work, patronizing their products and services and participating in communal activities with them. Where permitted, photographs were taken. Data collection was solely done by the researcher.

The data collection instruments were used to explore the following issues: socio-demographic data of study participants, description of the study participants' tourism-related livelihood activities as well as their livelihood portfolio – composition, most/least preferred activities, livelihood changes. Study participants' understanding of tourism as a phenomenon and as a business as well as it's fit into existing livelihood mix were also examined.

Data collection, processing and analysis were done simultaneously. Each interview was reviewed to look out for new emergent issues which were then explored in subsequent interviews. Interviews were transcribed verbatim, printed and read through, and necessary references made to the field notes and observations captured during the data collection process. The interviews were coded both inductively and deductively. Patterns, trends, and contradictions between the codes were highlighted. The results and discussions were presented in a narrative form.

3.0 Results and Discussions

3.1 Profile of Study Participants

Seventeen (16) males and eight (11) females were interviewed. With respect to age, the youngest respondent was 21 years old and the oldest was 65 years old. Majority (15) of the study participants had not attended school beyond the Junior High School (JHS) level. The lowest level of education attained by the respondents was primary school and the highest was Tertiary. The native status of the respondents was also considered. The sample was predominated by the indigenes (18). The non-indigenous respondents were eight (9) in number. The respondents' active years of

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engagement in tourism businesses varied between 1 year and 21 years. Most of the respondents were married (15), eight (9) of them were single, one (1) was a divorcee and another (1) a widow.

3.2 Tourism Entrepreneurial Opportunities in Rural Areas

There were four (4) main sub-sectors of the local tourism industry that the residents of Wli were engaged in. These were the provision of accommodation, guiding, food and beverage, and souvenir services. The businesses were micro and small in nature and largely catered for both domestic and international tourists. The businesses operated all year round, but their patronage usually peaked during the tourist seasons of April to September and also during the weekends.

3.2.1 Accommodation

There were three kinds of accommodation establishments: guest houses, homestays and camping sites. Combined, these facilities had employed about thirty-seven (37) people from the community. The homestays catered for tourists who wanted to have more opportunities for social, economic and cultural contacts with the local residents. The targets for the campsites were individuals who were in "for adventure and want a close interaction with nature" (A25, a 31-year-old male campsite owner). Two types of camping sites were available. The first type was on the premises of the guesthouses while the other was around the base of the waterfall in the Agumatsa wildlife sanctuary. The campsite owners usually acted as guides and cooks for the tourists. Most of the accommodation establishments offered basic amenities such as a bed, mattress, chairs and a table. In the homestays, guest and family bathrooms and toilets were separated. Females dominated in the ownership of businesses in this sub-sector. Likewise, majority of the employees in the hotels and guesthouses were females.

3.2.2 Guiding Services

Guiding was a common tourism-related service offered in Wli. There were the community tour guides who either worked with the visitor centre or privately. They offered guiding services to tourists to the lower and upper falls, hiking within the Agumatsa wildlife sanctuary as well as visiting other attractions in the surrounding communities. Guiding services were solely offered by males. Tour guiding in Wli was opined to be a physically demanding and debilitating job due to the mountainous terrain of the Agumatsa wildlife reserve. Hence, a lot of physical strength was needed to take tourists up on a daily basis:

This is not a job for a woman. They cannot do it. It's hard work. Can you imagine a woman having to take tourists to the upper fall? It is about 3 hours walk in and 3 hours walk back. They cannot. They do not have the strength to do that. They are too soft. We the men are not finding it easy, how about the women. This work is not easy ooo and as you age, it comes more difficult...I do not think women can do it but if they want to try it, no one stops them (A2, a 54- year-old male tour guide)

3.2.3 Food and Beverage Services

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Food and beverage establishments targeting different categories of tourists and local residents were in existence in the Wli community. Snack shops and local foodservice establishments popularly referred to as "chop bars" served a variety of indigenous snacks and dishes. The restaurants in the guesthouses offered a combination of indigenous and continental dishes. These eateries were opened every day of the week. The main targets of the "chop bars" were the local residents and domestic tourists who were familiar with the local cuisine and could afford their meals. The restaurants which were relatively expensive targeted tourists as their prices were above what the locals could afford.

3.2.4 Souvenir Trade

Some persons were also engaged in the production and/or sale of souvenirs in the community. The craft shops which were about seven (7) in number clustered around the visitor centre. These shops were opened all year round. The shops stayed opened for longer periods during the weekends because visitor arrivals were usually high. The crafts sold in these shops were not only indigenous to the area. Some of the traders sold crafts like footwear, bags, jewellery and carvings from other parts of the country, as well as other African countries such as Togo and Kenya.

The existence of these businesses within the Wli community reinforces assertions that support the possibility of tourism entrepreneurship in rural areas (Ashley, 2000; Dolezal, 2015; Tao & Wall, 2009). Typical of rural tourism enterprises (Getz & Nilsson, 2004; Lai, Morrison-Saunders & Grimstad, 2017; Prince & Ioannides, 2017), these businesses were micro and small in nature and operated on a small scale. Further, they were largely privately owned by the local residents.

Further, the gender dynamics observed regarding the provision of accommodation, food and beverage and guiding services is in line with Garcia-Ramon, Canoves and Valdovinos's (1995) argument that tourism jobs in rural settings often reinforce fundamental gender norms in patriarchal societies whereby females undertake jobs that fit into their responsibilities as homemakers while the males engage in more strenuous activities as the breadwinners for the home (Lück & Higham, 2007).

When the study participants were asked how easy it was to start a tourism-related business in the community, most of them noted that it was relatively easy. There were opportunities for transfer of existing knowledge and skills/assets. It emerged from the interviews that a number of the study participants made use of skills acquired through former trainings or exposures. For example, for a lady who operated a chop bar, the domestic skills from hosting and serving guests and family relations was transferred to the provision of food for cash:

I did not go anywhere to learn how to cook. As a woman, I can cook so the same way I cook for my house, I just use that knowledge to cook here for sale. (A26, a 36-year-old female catering establishment owner)

Another homestay owner converted existing rooms in her house for tourists:

We have two extra rooms in the house that no one was occupying so I use them to host tourists. Each of the rooms has a comfortable bed and washroom. (A6, a 35-year-old female homestay operator)

It can be deduced from the narratives above that the demands for establishing tourism enterprises in Wli were basic. This made it possible for skills, knowledge and capacity to be easily transferred. Plausibly, this will make it easier for other local residents to engage in tourism-related entrepreneurial activities (Ashley, 2000).

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3.3 Concerns with Tourism Entrepreneurship in Rural Areas

Although the local businesspeople admitted that tourism presented them with entrepreneurial opportunities, they indicated they were several challenges associated with it. In an attempt to identify these issues, four themes emerged. These themes which encapsulate the concerns are discussed below:

3.3.1 Access to Credit

Access to credit was the main complaint of all the study participants regardless of the kind of business they were engaged in. Because the businesses were micro and small in nature, they lacked the needed collateral or the regular stream of income to obtain credit from financial institutions.

> Some of these savings and loans companies prefer lending money to salaried workers because their income is guaranteed at the end of every month. But for some of us, see our businesses, sometimes you make money, other times you do not make much so if you approach some of the savings and loans companies, they are not willing to give you the money. (A3, a 54-year-old female craft trader)

Further, the high-interest rates on loans given by money lenders and community savings and loan companies deterred the business operators from seeking financial assistance from there. For instance, a participant noted that:

> The interest rates are so high and if you take the loan from them (financial institutions), you will realise that you are just working to pay them. Because of that, I cannot take any loan from them. (A9, a 25-year-old male catering establishment owner)

Due to the above challenges, some participants lamented that their businesses were not growing as they wished:

> Because I am supporting this business from my personal savings, things are not moving very fast. I have a lot of food items on my menu, but I do not prepare all of them because I do not have the money to buy the ingredients. I need a freezer for my business but for now, I cannot afford it. (A9, a 25-year-old male catering establishment owner)

Another participant who was in the souvenir trade commented that:

> I am into retailing of crafts and I buy them from different places. Sometimes I run out of products but getting money to buy new stock in bulk can be difficult. The crafts are really expensive. Sometimes people come and ask for things that I should have in my store, but I do not have it because of money issues. (A3, a 54-year-old female craft trader)

3.3.2 Seasonality

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Seasonality was another challenge identified. All the participants indicated it was a major bane of tourism-related livelihood activities in Wli. They pointed to the existence of peak and lean tourist seasons in Wli to buttress this view and further explained that international tourists' arrivals were not evenly spread throughout the year. The peak period identified coincided with the summer season (June to August) and Easter season (March/April). September through to May minus the public holidays (Christmas, New Year, Independence Day, Easter) were regarded as the lean tourist season:

> The whites (international tourists) mostly visit this community between June and August. Apart from that, we are mostly busy during the Christmas and Easter seasons. During these periods, we have guests in all our rooms. Then in the other months, our rooms are mostly almost empty. But the good thing is that the slow (lean) season is not as long as the busy (peak) season). (A16, a 25-year- old female hotel employee)

Due to this, there were irregularities in the operations of tourism-related activities in the community. During the peak tourist season, business operators engaged in their tourism-related activities for longer hours throughout the week but it would be a "waste of time" to do same during the lean tourist season. This confirmed an observation made during the data collection period (which participants stated was the lean tourist season) that most of the tourism enterprises were active during the latter part of the week (Thursdays to Sunday) when groups on excursions normally visit the waterfall. One participant stated that:

> I do not open my shop early these days because the tourists are not coming. This is not the season (peak season). So I stay at home and finish other tasks that I have before I come here. It is a waste of time to come early to open the place and stay here all day when you know that nobody will come. When the season (peak season) comes, I open for longer hours. There are times I close after 10 pm. (A12, a 29-year-old female craft shop owner)
>
> This issue was reinforced by an employee in the accommodation sub-sector who indicated that:
>
> During the peak tourist season, we do not close from work early. I report early in the morning and work until late in the evening. But during the lean season, I get more off days because there is not much to do around here. Sometimes, you come to work and sit idle the whole day, nothing really to do. It can get boring. (A20, a 21-year-old male hotel employee)

3.3.3 Unreliable Streams of Incomes

Concerns were raised about the irregular nature of income generated from tourism businesses due to the seasonal nature of tourist visits. All the study participants indicated the gap in their sales during the peak and lean tourist seasons. They indicated that they made very low sales during the lean tourist season. Some participants compared their sales during the peak and lean tourist seasons:

> Business is not good at this time. It is very slow. Few tourists visit the waterfall at this time of the year. During the peak season, we can make sales of more than GHC 1000 a day. But can you imagine the whole of this

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> week, I have not even sold things to the tune of GHC 20? There are even days I do not sell anything. (A3, 52-year-old female craft shop owner)

Consequently, there was pressure on the savings made during the peak season. This is because during the lean tourist seasons, the savings are channelled into the business to keep them running. One participant remarked:

> During the lean season, it is all about managing. Often times, it is the money I save during the peak season that I use during the lean season. So, it has become cyclical: save and use it up during the lean season. It does not really help in saving money for other needs. If you do not do it like that too, you will close down your shop when the tourists are not coming. (A11, a 38-year-old male craft shop owner)

The findings above give credence to earlier studies' assertion that inadequate financial resources can have a constraining effect on rural tourism enterprises (Ashley, Boyd, Goodwin, 2006; Seraphin, Butler & Vanessa, 2013; Tosun, 1999). Participants appeared to have limited options both internally and externally to access credit for their business. This has implications for the growth of these enterprises which can potentially provide employment opportunities for others. Additionally, the enterprises may be limited by the quality and range of services they can provide.

3.3.4 Negative Competition

Issues were also raised about negative competition which emanated from mistrust among the tourism enterprise owners. This negatively affected efforts towards synergy formation.

> It is just like a market and everyone is selling so there is a lot of competition.
> It is difficult for the association to happen because there is no collaboration.
> Everyone is fighting against the other because of competition in the business.
> The competition between the sellers is so much. (A3, a 54-year-old female craft trader)

The mistrust that existed due to the competition is captured in the narrative below:

> There is a lot of opposition. Initially, they (other traders) thought I was a novice in the business, so they were nice to me but later, when they discovered that I was not that new to the business and was actually making more sales than them, their attitudes towards me changed. Now I'm more careful with the way I relate with them because life is precious (A11, a 38-year-old male craft trader)

Trade-related networks have been found to be very important to the entrepreneurial process (Haugh, 2007). For Brüderl and Preisendörfer (1998), these networks provide a platform through which enterprises can gain key

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resources, knowledge, information and experience. But in Wli, this was a major challenge, and it may have repercussions for the growth and sustainability of these enterprises in the long-term.

4.0 Conclusions and Implications

This study has unearthed a number of findings which highlight the underlying issues associated with tourism entrepreneurship in rural areas. Largely, the findings were consistent with the extant literature on tourism, enterprise development and rural areas. Based on the findings, the following conclusions are drawn. Tourism has the potential of boosting entrepreneurial activities in rural areas. In addition, these activities are basic and do not require any special set of skills, knowledge and assets. This enabled a number of people to easily transfer their skills and assets to engage in these tourism entrepreneurial activities. This is positive as people within a resource-scare context such easily engage in tourism as an alternative economic activity. Secondly, access to credit, unreliable stream of incomes, seasonality and negative competition make engaging in tourism entrepreneurship in rural areas very challenging in terms of growth and sustainability.

Drawing from the above, from a policy perspective, there is a need for institutional recognition and support for tourism entrepreneurial activities in rural areas. Practice-wise, credit facilities need to be designed specifically for tourism-related rural enterprises. Furthermore, the steps in accessing such facilities should be clearly communicated to the enterprise owners. Also, periodic skills and knowledge augmentation programmes must be initiated by tourism agencies to help expand the skill sets for the rural entrepreneurs. Finally, there is a need for the formation of trade-related networks among rural tourism entrepreneurs. This will provide a platform for knowledge and experience sharing among the entrepreneurs. Such networks can also be utilized in the future to pull together collateral to access credit or any other relevant asset.

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Developing the Circular Economy in Uganda: Prospects for Academia-Public-Private-Partnerships

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Abstract

Issues: Circular economy is a production system that optimizes the reusability of by-products/waste as raw materials. As the global population threatens to reach 9 billion by 2050, consumption levels grow proportionally, raising food, material, and energy demands. In Uganda, soil nutrient depletion and energy poverty are key challenges faced by urban and rural communities. Rampart depletion of natural resources calls for transit from the linear economic models towards sustainable production/consumption technologies. This study investigated prospects for APPP to optimize the reusability of by-products/waste as raw materials. **Approach**: Quantitative and qualitative tools were used to collect data via document analysis, interviews, and participant observations. The tools were administered to municipal authorities, private waste-collecting agencies in cities and municipalities; officials in Ministries of energy and Agriculture; officials in universities research units and entrepreneurs that deal in agricultural and energy products; officials from civil society organizations. **Findings**: there are a number of sustainability projects being undertaken by Universities and High schools, Government agencies, companies, and civil society organization isolation. Single-handedly, individual agencies lack the requisite capacity to develop closed-loop production/consumption models. Analysis of a few successful RRR projects suggests that APPP is positioned to promote CE. Transiting towards a circular economy requires joint ventures to optimize human, technological, and financial resources and develop policy and institutional frameworks. In Uganda, recycling biotic by-products can promote environmental sustainability; reduce stress on natural resources; enable cost savings; promote green entrepreneurship, and create jobs/livelihoods.

Conclusion: working jointly, CE could be enhanced via technical and business models by the academia, private capital investment by companies, community engagement by CSOs, and development of supportive policy and institutional frameworks to facilitate decision-making processes. The APPPs are positioned to use interactive platforms

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for creating awareness and promote sensitization about green values through education and multimedia communication platforms.

Introduction

Circular economy (CE) is a system of resource utilization that promotes waste reduction, reuse and recycling, and the restorative capacity of natural resources. Growing population, urbanization and changes in consumption patterns increase the demand for energy, food and other essential necessities of life. Linear production models which require large quantities of cheap materials and energy create scarcity in natural resources and culminate in environmental degradation (Mont, 2008). Innovative management of resources utilizing secondary and renewable materials could address scarcity (Ellen Macarthur foundation, 2018). Attaining resource efficiency entails that products and materials circulate at the highest level of utility to reduce wastage (Ellen MacArthur Foundation 2017). Conceptually, maximum utilization of waste and by-products promotes value creation by reducing; a) cost of raw materials in the supply chain management; b) cost of delivery of raw materials; c) dependence on mining of natural resources. While industrialization improves and comforts life, it raises sustainability issues (Szirmai, A., 2012). The Industrial sector in the conventional linear economic model is extractive in nature, dominated by mining, consumption, and disposal of waste (MacArthur Foundation 2013). The production of goods is directly connected to material and energy flows (Elia et al., 2017), and the model makes the world a garbage producer and collector (Masi et al., 2017). Therefore, it is imperative to develop a resilient production system that enables the current generation to meet present-day needs without compromising the ability of future generations to meet their own needs.

The concept of Circular Economy: Products and materials approaching the end-of-life stage are regenerated through resource recovery and reuse (RRR). Efficiency is achieved when by-products or waste are retrieved for use in other production processes. CE ecologically makes the world clean and livable by meeting bottlenecks of resource scarcity and waste disposal (Homrich et al 2018). Value creation for sustainability calls for great innovation, creativity and adaptation to maintain the value of products, materials and resources at the highest level of utility in the economy for as long as possible (EC 2015). CE not only builds resilience, it also creates opportunities for delivering economic, social and environmental benefits. Within the circular value chain, organizations retain and regenerate values to products, making them secondary raw materials through reverse logistics. The closed-loop cycles of reuse, remanufacturing, and recycling regulates consumer behaviour to sustainable levels (Peattie, K. and Belz, F., 2013). Regenerative value is created by practicing sustainability in human resources, procurement, technology and firm infrastructure.

Resource scarcity issues in Low Income African Countries (LIAC): Within LIAC, energy demands outstrip the supply levels as exemplified by; a) high dependence on candles and kerosene lamps for lighting' and lack of access to electricity 89% of households (IEA 2014); b) poor accessibility to clean cooking fuels (World Bank 2017) and reliance on traditional biomass for cooking (Sehgal et al 2018); c) over dependence on biomass (firewood, charcoal, dung, agricultural residues) for cooking; d) use of inefficient traditional stoves and open fires for cooking (World

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Bank 2016). There is potential in LIACs to generate over 40% of renewable energy (RE) needed to accelerate economic growth by 2040 (IEA 2014). However, the abundant solar, wind, hydro, geothermal and biomass energy resources are underdeveloped and under-exploited (IREA 2015). The abundant organic materials for waste-to-energy development, are not processed into usable solid, liquid, or gaseous fuels; but combusted directly for cooking/heating purposes for both domestic and industrial processes (Hafner et al 2018). Limitations include initial big capital costs, weak environmental policies, poor institutional framework and poor infrastructure (Kemausuor et al 2018). Achieving sustainable, clean and affordable energy for all by 2030 calls for creativity and optimal use of existing reusable resources.

Resource availability issues in Uganda: Currently, over 95% of households rely on wood and charcoal as a source of cooking energy; only 5% have access to electricity (GIZ 2011). Given that these fuels are used by educational institutions, prisons, hospitals, industry (brick/tile, tea curing, cement and others) their demand grows at 6% annually. Over 80,000 hectares of forests (private and protected) are cleared annually (Knöpfle 2004). About 4 million tonnes of wood are consumed every year: accounting for over 70% of deforestation in Uganda. Between 1990 and 2010, the country lost over 36% of natural forest cover (MEMD 2010). At this rate, a total depletion of forestry resources would occur by 2050 (NEMA 2008). Existing initiatives on increased efficiency of kilns for charcoal production and cook-stoves improvement may not suffice in absence of alternative fuels. One of the alternatives is production of biofuels from bio-waste, particularly carbonized briquettes. The 1,154,160 tons of bio-waste generated annually in Kampala could be recycled into 192,360 tons of briquettes which could serve 3206 educational institutions and save 1,920,000 tons of trees. This could generate income equivalent to $ 1,937,200 and employ 43,281, youths (each earning 100 USD monthly). Other socio-economic benefits include reduced water pollution and improved sanitation.

The other aspect of resource scarcity is related to high soil nutrient depletion (Henao & Baanante, 2006). Whereas agricultural output in Uganda is 21% of the GNP; and despite the fact that 4.2 out of 5.7 million households are engaged in agriculture (NEMA 2010), use of fertilizers is quite low, at 3% (NETWAS 2011). Given that most small-scale farmers cannot afford to buy mineral fertilizers, Uganda has one of the lowest agro-chemical usages in Africa (ACODE 2006). Organic waste could be recycled into biocides and soil nutrients for food production. Bio-waste recycling for biocides, fertilizers take advantage of the abundant biomass resources in the country. The decrease of the world's remaining sources of mineral phosphorus justifies nutrient recycling (Berg et al. 2005) particularly in Uganda where $ 899 million is lost annually due to effects of malnutrition. Wastewater sludge could also be used as a soil conditioner for farming purposes (Diener et al., 2013; NetWas, 2011). The chemical-energy content in wastewater sludge is more than needed for treating it, pumping water, irrigation and other purposes (Heidrich et al. 2011). For briquettes production, a net benefit from combustion of feacal matter is obtained at 27% dryness when stored in ventila-ted greenhouses (Muspuratta et al 2014).

The Conceptual framework: CE centers on resource efficiency and economically competitive solutions (EC 2015). Being restorative and regenerative, circular economy bridges gaps in the existing linear economy which is

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characterized by take, make and dispose. In CE, waste is directly or indirectly minimized following the waste hierarchy; reduce/prevent, reuse, recycle, recovery and (as the last option), safe disposal (EC 2016). This study focused on bio-based materials; consisting of substances originally derived from nature. Because Uganda is non-industrialized, more than 90% of all waste generated is organic and only a small percentage constitutes plastics, paper and metal. It is typically a bio-based economy dealing with agriculture, forestry, fisheries, food and related products. Bio-based circular economy centers on renewable biological resources (e.g., crops, forests and animals) and products that are wholly or partly derived from materials of biological origin (EC 2017a). Conceptually, bio-based circular economy is a closed loop system that maintains the value of biological products Medkova et al 2017).

Despite the economic and environmental benefits of the CE and despite the growing global attention from academia, policymakers and businesses, implementation projects for CE in Uganda are scarce. Presumably, this is attributed to limited linkages between the academia, public and private sector agencies. As observed by Ellen MacArthur Foundation (2014), cooperation is the key for functional circular economy. In light of this observation, the purpose of this study was to investigate the role that Academia-Public-Private-Partnerships (APPP) could play in the development of the CE in Uganda.

The specific objectives of the study were.

1. Investigate the opportunities and prospects for development of the CE in Uganda
2. Establish gaps and limitations in development of the CE in Uganda
3. Determine how Academia Public and Private Partnerships could optimize opportunities and bridge gaps for development of CE in Uganda

Materials and methods

A multi-dimensional approach was adopted to investigate the role that APPP could play in the development of the CE in Uganda. While the study was predominantly qualitative, some aspects of quantitative data collection methods were used. The following section describes the approaches used in conducting the study.

Desk reviews: secondary sources of information were used; specifically focusing on national and global trends of recycling of organic materials. At the national level, documents analysis was done, and the focus was put on public and private sector records (proceedings, action-plans, policies, etc.) Attention was devoted to establishing evidence of linkages and partnerships for CE between Academic, Public-Private sector agencies.

semi-structured interviews: these were administered to various categories of people including; urban communities particularly those engaged in (and affected by) existing forms municipal waste management; personnel in government agencies (especially National Environment Management Authority {NEMA} and Kampala Capital city Authority {KCCA}); officers of private sector agencies (mainly operators of private waste management companies). The interviews were used in the baseline and feasibility studies on the prospects of waste recycling (existing knowledge, attitudes and practices); opportunities barriers, Information-Education-Communication (IEC); capacity building needs; and start-up and scale-up financial and technical requirements. Existing costs of energy and fertilizers

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were established to determine viability of proposed renewable energy projects. Marketing processes and distribution networks of products of waste recycling were also examined.

Participant observations: checklists and inventories were used to determine availability of key aspects of recycling within various organizations visited. For instance, in academia, government and private sector agencies, expected items included regulations, guidelines, policy briefs, research findings, journals, consultancy reports, partnership deeds, business records, exhibitions, conference/workshop proceedings, etc.

Proof of concept pilot projects: experimental trials were conducted to determine the practicability and feasibility of production and consumption of the following: briquettes, biocides, fertilizers, disinfectants, ornamental crafts, pavers.

according to the study conducted by GGGI (2017); a) there are more than 3000 people directly employed in informal solid waste-related activities. Existing waste value chains for metals, banana peelings, peels, paper cardboard and plastics could be empowered to handle bio-waste recycling activities; b) over 100 formal private waste collecting companies are registered; c) over 40 NGOs and CBOs actively support waste management operations. All these constitute a potential work force for developing the recycling industry.

GGGI (2017) also reports that KCCA spends 8.5 billion annually on waste collection and disposal; constituting about 40% of their total budget to cover only 45% of the total waste generated. The opportunity is that KCCA could be convinced to invest in waste recycling schemes to save the costs.

Findings

Opportunities for recycling Municipal Bio-waste (MBW) in Kampala city

	Aspect	**Opportunities and prospects**
1	Annually 1,154,160 tons of municipal bio-waste (MBW) is generated in Kampala city alone. Capacity of landfills have been overstretched; poorly designed landfills emit methane to atmosphere and allow leakage of into the underground ground water reservoirs; smell and scattering of waste by animals/birds becoming a menace to neighbouring communities.	Could produce 192,360 tons of briquettes; Sold at $ 0.27 @ Kg, generate $ 1,937,200; serve 3206 schools; save 1,920,000 tons of trees; employ 43,281 people; save 40% of municipal budgets; reduce indoor air pollution; reduced water pollution. About 3-5 times more municipal waste generated in other urban centres could produce more impacts. Bio-waste could be diverted from landfills to be recycled into bioenergy, biocides and fertilizers.
2	On average, MBW has 1.65 % nitrogen, 0.28 % phosphorus, 2.95 % potassium; av. PH; 5.7-6.9 %; moisture content 50-75%; relative humidity 75-155%.	Average gross energy content is 17 MJ/k. volatile solids content 66-79%; decomposable organic carbon (DOC) 74-86%. Ideal for big-scale biofuel and soil nutrients production. Recycling reduces methane emission (which vary between 0.9 & 4.12 Gg/yr).

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3	High soil nutrient depletion; high cost of imported fertilizers; increasing global shortage of phosphorous	Recycling of bio-waste (including faecal sludge) into fertilizers for farming; Small scale farmers of ornamental plants are willing to pay for the processed faecal sludge and urine at a cost of USD 2 for a 20 Litres.
4	Rising costs of firewood and charcoal (attributed to reducing trees/forests); cost of electricity is very high constituting 20% of the household budgets	Business prospects of bioenergy are growing; market for recycled products likely to rise steadily.
5	Existence of private waste collecting companies (for solid and liquid waste) under umbrella associations Umbrella organization exist such as Uganda Water and Sanitation Network (UWASNET) to bring together NGOs, CBOs and others	Their capacity could be developed (through training and financing) to extend the scope of their operation beyond waste collection and disposal; to processing for commodification. Potentially, these are platforms for community awareness and training; for advocacy and collective bargaining
6	Renewable energy umbrellas exist; include Uganda National Renewable Energy and Energy Efficiency Alliance (UNREEEA), Biomass Energy Efficiency Technologies Association (BEETA), Uganda National Alliance for Clean Cooking, Kirchner Solar Group, Uganda National Biogas Alliance-UNBA.	There is potential for pooling of human, technical and financial resources to undertake big scale projects on development of renewable energy via recycling of bio-waste There is also a potential platform for collective bargaining with government agencies and for collaboration with the academia and business communities.

The environmental, social and health challenges experienced at Kitezi landfills could mount pressure on NEMA, KCCA and other stakeholders to promote recycling as an avenue for diverting bio-waste away from landfills. The challenges include the bad order that discomforts nearby households and business entities; the untreated leachate discharged directly into the underground water sources; the holding capacity of landfill which is being over stretched.
Despite the opportunities and prospects described above for development of CE in Uganda, projects have not scaled to sufficient levels.

Gaps and limitations in the development of the CE in Uganda

There is a general lack of awareness of value in bio-waste among a big section of the population. Over 90% of people who pick waste concentrate on metallic and plastic components for sale to medium/large scale recycling companies. There is a significant gap in bio-waste recycling despite the fact that 80-90 % of waste generated in Kampala is organic. Findings from interviews, documents analysis and literature reviews attribute this to the following.

Psycho-social factors; recycled products from faecal matter (biogas and fertilizers) are resented due to perceptions; cultural and psycho-social sensitivities.

Economic factors: commercial biogas and briquettes production schemes are constrained by high initial capital costs. Opportunities for securing start-up finances are not well known to many prospective investors; particularly

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those whose educational levels are low. Financial institutions fear to grant loans to projects whose viability and feasibility is not well understood; especially in absence of successful commercial-scale projects.

There is lack of relevant business and entrepreneurial models for recycling enterprises to enable potential entrepreneurs to emulate and start the businesses.
Producing briquettes/biogas entails costs which translate into high price (compared with charcoal or firewood) whose production costs are low indeed.

Compositing operations are constrained by the low demand for fertilizers in urban and peri-urban areas where farming is less prominent. Besides, usage of fertilizers in Uganda is very low indeed.

Private waste collecting companies abandon routine services in the low-income areas because of the inability of the latter to pay for waste collection services. Incidentally, such areas generate the biggest amount of waste given the fact that they are densely populated.

Most biogas installations are family-sized plants; designed for household consumption. Because of the low economies of scale, cost per unit of gas produced is very high. Some households lack adequate number of animals to generate enough feedstock for bio-digesters. Even where the number of animals is big, semi nomadic, and free grazing system complicate collection of dung to feed the digesters which fails to meet costs of feedstock collection. Besides, technology of packaging biogas is too complicated and costly to make business sense.

Technical factors: bio-waste recycling projects are constrained by inadequate technical skills; poor designs and material choice for recycling plants, inexperienced contractors and operators, poor-quality plants, poor choice of materials and lack of routine maintenance and repair.
Absence of waste sorting cultures makes waste complicates recycling. Employees/Loaders spend much time sorting various stream of waste (metallic, plastic, polythene, and paper).
Lack of access roads in hard-to-reach informal settlements complicates collection of waste for recycling. Cesspool trucks hardly access specific residences to drain the sewage. Besides, toilets are not appropriately lined to enable safe draining/emptying.

Non-streamlined Institutional frameworks: There are no centrally organized waste recycling schemes. Existing activities are conducted by the informal sector; particularly by groups commonly known as 'scavengers' This is partly attributed to non-streamlined policies and support networks to support commercial-scale recycling.
There is a clear lack of economic instruments such as tax holidays for investors in organic waste recycling, or levies on charcoal and firewood. On the occasions when regulations are passed conservation of trees, enforcement of compliance is poor.

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Dealers in recycling schemes operate in isolation; and fail to optimize joint resources (human, technical, financial). This reduces opportunities for enjoying benefits of joint ventures.

In light of the above, the circular economy in Uganda is at its infancy stages. The few resource recovery and reuse (RRR) initiatives heavily depend on subsidies and operate at a small scale, often not surviving beyond pilot phases for domestic consumption. The few operators are trained and funded by meagre resources of NGOs/CBOs; inadequate to generate commercial-scale production.

Role of APPP in optimizing opportunities and bridging gaps for CE development

Presumably, resources of the Academia, public and private sector agencies could be pooled to bridge recycling gaps and limitations. The section below examines the strength of each of the sectors and proposed how it could work with others in developing CE in Uganda. The insights were generated through in-depth interviews, documents analysis, participant observation and reviews of related studies.

Academia: most of the respondents expressed the view that Universities and research stations are positioned to do the following; **a**) conduct research and produce scientific innovations for CE development; **b**) generate data (through research) for evidence-based policy development; **c**) document and disseminate research findings; **d**) diffuse innovations in CE; **e**) develop technical and business models for up-scaling CE projects; **f**) design and develop public awareness and training for projects related to CE: **g**) set up demonstration units to illustrate the technical and financial viability of scalable CE enterprises; **h**) create networked platforms for sharing technical, scientific and business information related to CE development.

Being major consumers of energy (electricity and cooking fuels), educational institutions are expected to practice energy-efficiency; develop and demonstrate initiatives for reduction of fuel wastage; conduct exhibitions, expos and trade-fares and develop or use efficiency appliances. Universities are also positioned to promote RE research and development and to train communities.

However, the general concern of many respondents was that communities are used by universities as laboratories for experimentation. Public and private agencies do not have access to University facilities and resources.

Despite the critical funding gaps facing many universities and research stations, the few joint projects that they conduct are not entrepreneurial; but focused on new knowledge for the sake of it. Within individual universities, research and outreach programs are not multidisciplinary; a typical faculty conducts its own research/projects in isolation of other faculties.

Practical links do not exist between universities, research institutions and potential beneficiary industries; and most of the research is not used in policy development. Generally, there is limited outreach projects by universities and research stations to engage communities in recycling initiatives.

However, information obtained through analysis of records at the Universities of Ndejje and Makerere revealed that some form of partnerships exists. They both have a few joint ventures with selected private and private agencies to develop RE. Makerere has a unit known as Centre for Research in Energy and Energy Conservation (CREEC) that

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focus on renewable energy development. Ndejje University has five integrated research and development centres in areas of energy, water, Agriculture/forestry/environment: business incubation centre and centre for partnerships and civic engagement. The two universities have developed user-friendly technologies for briquettes, biogas, solar and wind energy.

St Kizito High School Namugongo (SKHSN) has established a waste recycling scheme at the school to demonstrate production of briquettes, biocides, fertilizers, pavers (made from silt extracted from water drainage channel within the school). The school uses only briquettes (instead of firewood) for institutional cooking, biocides and fertilizers for horticulture and pavers for landscaping. All these innovations are exhibited to communities via annual green expos and festivals. The Alumni of SKHSN have been assisted by the school to establish two start-up renewable Energy companies (Summit Green Company and WEYE). The companies are currently implementing many of the school's outreach programs.

Public sector: within the government agencies, waste recycling is closely connected to units within Ministries/agencies of Energy, Water, agriculture, local government, Environment). The Local Governments Act, Cap 243, mandates urban councils to ensure safe, reliable and cost-effective treatment and disposal of solid waste. Findings reveal that the units are expected to do the following: **a**) develop policy, regulations and guidelines to facilitate private sector investment in RE; **b**) to assign realistic economic value to trees/forests that enable realistic costing of charcoal and firewood; i. levy tariffs on charcoal and firewood to increase their market prices; ii, allow tax holidays on RE production; iii. Create subsidies on equipment used in CE production. All this may enable biofuels to be competitive on the energy market; **c**) make informed decisions on the disposal of municipal waste in landfills; **d**) coordinate start-up and scale-up capital for CE development; **e**) coordinate capacity building for climate-smart projects; **f**) coordinate funding for the development of new technologies for CE development; **g**) develop incentives for private sector investment in CE development; supporting demand-driven and market-oriented projects; **h**) to enable private sector, universities and research agencies access climate funds and other multilateral grants; **i**) encourage strategic partnerships with academia and private sector agencies.
The following information was obtained from government agencies in regard to bio-waste recycling.

National Environment Management Authority (NEMA) focuses on promoting the Green Economy to maintain health ecosystems, promote sustainable development, eradicate poverty, enhance social inclusion, and create jobs. NEMA aims at enhancing improved human wellbeing; reduced inequalities; reduce exposure of future generations to environmental risks and ecological scarcities. Strategies include a) reducing carbon emissions and the pollution levels; b) enhancing resource efficiency; c) supporting socially inclusive; equitable; sustainable production and consumption patterns and d) promoting the natural capital-base; biodiversity and ecosystem services.
Existing bio-waste projects are conducted in a tripartite partnership with World Bank and 12 municipalities (Mukono, Jinja, Mbale, Soroti, Lira, Kabale, Kasese, Fort-Portal, Mbarara, Hoima, Masindi and Arua Municipal Councils). The projects support composting to generate marketable manure from municipal solid waste. planned activities include

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a) strengthening collection and transportation of municipal solid wastes in project towns; b) reducing greenhouse emission; c) Controlling and protecting water catchments from water source pollution. With support from World Bank, NEMA managed and coordinated the program whereby each municipal council received US$ 350,000 for critical infrastructure (1 MSW composting plant, 1 wheel loader, skip loading truck, at least 20 skip containers and training in sustainable waste management).

In general, NEMA focuses on; **i**. using a community-based approach; co-opting and involving communities in policy formulation; ii. Involving the private sector by enabling them access funding; Creating employment opportunities and income generation for at least 25 people per town; improving farmers' agricultural production and yields; reducing methane emissions; facilitate trade in carbon with revenue inflow of USD 215,000; promoting reuse/reduce/recycling of plastics and other recyclable waste types with savings in material and energy.

National Water and sewerage Corporation (NWSC) prioritizes recovery of resources to solve the sanitation problem. The agency promotes resource recovery to address the growing energy poverty. By 2016, it had 28 sewerage treatment systems, with about 7% sewerage coverage but aimed at 30% by end of 2018. NWSC also has projects that produce soil nutrients for crop farming. Some of the strategies of NEMA include a) creating public awareness on benefits of bio-waste recycling; b) upscaling and marketing successful pilot studies; c) Increasing collaborations and private sector involvement; strengthening institutions and building capacity in the area of Resource recovery.

Private sector: this constitutes; a) individual entrepreneurs and traders dealing in recycling and distribution of products; b) companies dealing in waste collecting, recycling and renewable energy production; c) financial institutions and d) civil society organizations (CSO). The following private sector agencies are expected to; **i.** companies: to invest in recycling initiatives (financing, technology, and human resource); ii CSOs; to provide grassroots structures, training, and leadership for community engagement; coordinate local and global funding; iii. Consumers of firewood/charcoal (tea-curing factories; ceramic industries, poultry farms, sauna operators, educational institutions, and restaurants) are potential clients for briquettes; iv. Private sector potentially funds research/projects on CE and potentially provide internship to students.

A private waste collecting company (named CAD) partnered with SKHSN to provide sorted waste to the school for briquettes production. The school skilled CAD officials to produce briquettes, adding value to their waste management work.

Two Start-up renewable Energy companies (Summit Green Company; and WEYE) produce and distribute briquettes to households and user organizations. They have so far conducted training and exhibitions on renewable energy to over 50 communities in urban and rural areas.

Energy companies and CSOs in Uganda have formed umbrella organizations. They include Uganda National Renewable Energy and Energy Efficiency Alliance (UNREEEA), Biomass Energy Efficiency Technologies Association (BEETA), Uganda National Alliance for Clean Cooking (UNACC) and Uganda National Biogas Alliance (UNBA). Each of them regularly organizes exhibitions, conferences and workshops on renewable energy and invite companies, educational institutions and the public.

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With financial and technical support from GIZ, UNREEEA provided funding to Ndejje University for the development of a one-stop centre on renewable energy (Solar, wind energy, biomass {biogas and briquettes}).
The Global Green Growth Initiative (GGGI) works collaboratively with KCCA. In December 2017, GGGI conducted a study on value chain analysis of Municipal solid waste in Kampala. Recycling is one of the proposed recommendations to divert waste from the landfills which already were being stretched beyond established capacity. GGGI also coordinated finding support to WEYE to work with urban and peri-urban areas.
The above description of activities of various agencies in the APPP reveals that there are efforts by each of them (or a partnership of two or three of various agencies) to promote recycling. What is still lacking is the formalized partnership structure that facilitates inter-sector linkages for mega projects. The section below is a discussion of issues, challenges, opportunities, and prospects for the development of CE anchored on inter-sector-linkages.

Circular Economy in Context of APPP

Circular Economy (CE) and sustainability are twin concepts that require handling of resources in an ecological way to bring back and maintain a clean and liveable world (Homrich et al, 2018). It attempts to meet bottleneck of resource scarcity and waste disposal. Globally, CE has gained increasing attention from academia, companies and policymakers as a promising approach for promote sustainability and competitiveness (Murray et al 2017). Among other countries, China, Japan, USA and the European Union have policies to support the adoption of CE (Ghisellini, et al 2016; Winans, et al 2017). Companies are also expected to step up efforts to promote sustainable productions (Bressanelli, Perona, and Saccani 2019).

APPP and the development of CE in Uganda: presumably, many of the constraints facing recycling operations could be addressed through the framework of Academia-Public-Private-Partnership (**APPP**). Heilman, and Johnston (1992) describe PPP as "The combination of a public need with private capability and resources to create a market opportunity through which the public need is met, and a profit made." The expectation is that technical, human, and financial resources of APPP could be pooled to undertake mega sustainable projects. On the side of universities, partnerships and collaborations are key to long-term sustainability of quality operations (Hart and Northmore 2011). Joint projects with public and private sectors are positioned to generate well-defined roadmaps to support appropriate technologies, infrastructure, community outreach projects and evidence-based policy development. However, as pointed out by Sutz (2005), small-scale collaborations between researchers, industry and other actors fail to grow into national trends. Research conducted by the academia is rarely disseminated in local fora where it could be accessed by practitioners. Publications are done in elite academic journals to enhance staff promotion or for achieve higher degrees for students (Perry & Menendez, 2011). On the rare occasions when it is disseminated in the local media, the technical jargon may not be understood by average policy makers and practitioners. This reduces the likelihood of universities receiving research funding from industry, government agencies and civil society. Etzkowitz (2012) calls for flexibility on part of the university faculty and management.

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Analysing inter-sector linkages for developing CE entails; a) stakeholder-mapping to understand core values, interests and challenges of different agencies within APP; b) determining commitment of various APP agencies towards CE-based production/supply chains and; c) assessing trends among APP agencies towards closed-loop production for preserving natural ecosystems; d) developing technical and business models to attract private investment into CE projects; e) creating public awareness of economic, social and environmental benefits and prospects for CE development).

Private companies' and the promotion of CE: companies that redesign their supply chain for CE may obtain environmental social and economic benefits (Genovese et al. 2017; Ongondo et al. 2013 Cucchiella et al. 2015). In Uganda, prospective clients of RE products include tea curing factories, restaurants, ceramic industries, poultry farms and educational institutions. Currently they depend on firewood and charcoal as a cooking/heating fuel but have shown readiness to shift towards more affordable and sustainable energy sources. While the decision-support framework for supporting innovations encourages a balanced assessment of environmental, economic, and social considerations; the financial motivation takes precedence (Borrello et al 2017). Consideration of companies is focused on reducing operational costs for increasing profits. As Nunez-Cacho et al; (2018) observes, sustainable energy use is mostly motivated by conservation of company financial resources. Companies focus on minimizing production costs (via energy/material savings), supply risk reduction, customer loyalty improvements and opening new revenue streams (Salguero-Puerta et al 2019). Resource-efficiency in production is attained through redesigning, maintaining, repairing, reusing, remanufacturing, refurbishing, and recycling. In a way, green marketing supports the CE practices. While packaging enables companies to advertise and attract customer attention; it is a source of dumping/littering. Scientists are positioned to develop biodegradable packaging materials which government agencies should promote by legislating (Pavel & Supinit; 2017; Hejase, et al., 2018; Ravenstijn, J., 2010)

CE and corporate social responsibility: Waste management can be analyzed from three dimensions; 1) as a social, ethical and civic duty associated with positive identity (Hetherington 2004); 2) as a product of 'awareness of consequences' of failure to take appropriate waste management measures (Tucker and Speirs 2003); 3); as having concrete social and economic benefits to companies in terms of income generation and costs saving. While the consideration of many companies is on economic benefits, the civic duty of promoting social and environmental wellbeing deserves attention. Barr (2005) argues that 'localization' of environmental action to everyday lives of individuals could have a significant positive impact on recycling schemes and participation rates.

Shukor, et al (2018) points out that social and environmental issues have recently attracted attention of private companies. Within the framework of corporate social responsibility (CSR), companies are inclined to finance diverse aspects of sustainability projects. The projects include supporting advocacy initiatives for creating ecological awareness among local populations and authorities) and community welfare initiatives (Gregorio et al 2018). CE requires that companies participate in community development and value sharing for socially responsible consumption (Webb, et al., 2008). In light of this, companies are expected to go beyond the traditional corporate social responsibility (CRS) and practice corporate sustainable social responsibility (CSRS) which presumes extended producer responsibility.

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CE and Waste-to-Wealth Enterprises (WWE): CE is an eco-innovation that promotes sustainable business, job creation and livelihoods for grassroots communities. In this regard, Gregorio & Terceno (2018) conceptualize Bioeconomy (BE) as the production, use and marketing of renewable biological resources. It involves the conversion of bio-waste into bioenergy and other value-added products. Apparently, sustainability conversations that front business interests are likely to attract public attention. Profitability is heightened when products that are approaching a stage of their end-of-life are regenerated and reused as raw materials (Grigorios et al 2019). For instance, a lot of domestic and agricultural waste that ends up in municipalities are raw materials for bioenergy (soil nutrients, biocides, and production of animal feeds). The value of products, materials and resources are maintained as long as possible.

Addressing shortage of raw materials and natural resources: CE decouples economic growth from resource extraction whereby reverse and forward flows of products and materials are allocated equal attention (Spring & Araujo 2017). The various waste streams and emissions are used to create value, to provide secure and affordable supplies of raw materials and to reduce the pressure on the environment. Food-waste, wastewater sludge and biodegradable material from farming, forestry, fisheries, markets bakeries, breweries and mills are prospective raw materials for generating biogas, briquettes, soil nutrients and biocides. The closed-loop product lifecycle minimizes waste generation and transforms waste into raw materials for production (Salguero-Puerta et al, 2019). CE reduces dependency on non-renewable raw materials, and it addresses depletion of resources (Ghosh and Agamuthu 2018). Holistic sustainability is achieved when bio-waste recycling increases energy output. Optimization of secondary raw materials and other renewable resources helps in; a) addressing resource scarcity; b) reducing cost of raw materials; c) overcoming costly supply chain management and d) decoupling economic growth from natural resources consumption (Kjaer, et al., 2018)

CE and social equity considerations: Waste-recycling is the remedy towards clean city initiatives. This particularly empowers urban communities (through skilling and financing) to convert waste into bioenergy, biocides, fertilizers, and animal feeds. The cost of skilling and the start-up financing could be met by city and municipal authorities who ordinarily spend 40% of their budgets on municipal waste management. The savings accrued when waste is managed by multiple stakeholders are sufficient to meet the needed financing requirements. Promoting small and medium scale WWE improves sanitation in the hard-to-rich informal settlements where private waste collectors do not reach. It also creates jobs and livelihood opportunities for urban communities who are likely to engage in the WWE. As pointed out by Gregorio & Terceno (2018), CE promotes social equity, human welfare, Industrial ecology (IE) and Green Economy (GE) (the latter two being attained through reducing environmental risks and minimizing ecological scarcities).

Conclusion

The circular value chain is a process by which organizations regenerate by-products and create value through reverse logistics. CE is based on the three pillars: economic, environmental, and social (profits, planet, and people). The sustainability concept aims at meeting the needs of the present without compromising the ability of future generations to meet their own needs. The beginning points in Circularity "refuse," and the endpoint is value recovery

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(such as bioenergy, soil nutrients, biocides, and animal feeds). Thereafter, the 9Rs principles are addressed in the following order: (1) Refuse: preventing the use of raw materials; (2) Reduce: reducing the use of raw materials; (3) Reuse: product reuse (second-hand, sharing of products); (4) Repair: maintenance and repair; (5) Refurbish: refurbishing a product; (6) Remanufacture: creating new products from (parts of) old products; (7) Repurpose: product reuse for a different purpose; (8) Recycle: processing and reuse of materials; and (9) Recover energy: incineration of residual flows. Given that Uganda's economy is predominantly agro-based, agricultural waste from a variety of crops produced by small, medium, and large-scale farmers constitutes a reliable base for the CE. Other forms of bio-waste are generated from Wood waste (sawdust, shavings, off-cuts), feacal sludge, and other wastes. This abundant biomass base creates a variety of WtE options, soil nutrients, biocides, and animal feeds.

Recommendations: Given that the potential for developing a bio-based Circular Economy is quite big, linkages between the Academia, Public and Private sector agencies should be institutionalized and streamlined. This could be done through; 1) regular scheduled meetings between key stakeholders; 2) conducting conferences, workshops, Green-festivals and Trade-fares and other face-to-face meetings; 3) development of Interactive digital platforms. An example of an interactive digital platform is http://catch.summitgreencompany.com developed by Summit Green Company LTD.

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Contents, Curricula, and Teaching Methodologies Of Entrepreneurship Education in Kenya

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Abstract

Most economies across the globe rely on entrepreneurship for growth. There is evidence to suggest that entrepreneurship creates job opportunities and spurs economic growth and development (Pacheco, Dean, & Payne, 2010; Mojica, Gebremedhin, & Schaeffer, 2010, and Solomon, 2007). Even though entrepreneurship is one of the fastest growing education disciplines globally, researchers are still divided on what should be taught and how it should be taught in institutions of higher learning. Entrepreneurial decision-making is laced with uncertainty and drawbacks. Hence, entrepreneurship learners must be taught using practical and conceptual methodologies to equip them with the requisite knowledge and skill that will enable them to confront such challenges in their entrepreneurial activities. This calls for entrepreneurship teachers to be innovative and to also encourage their learners to be innovative as entrepreneurship involves the generation of new business ideas.

This paper sought to examine teaching methodologies for entrepreneurship education in institutions of higher learning in Kenya. A mixed-method approach that involved triangulation as the main data collection technique was used. Interviews were administered with teachers and learners of entrepreneurial education in Kenya, with a view to identifying the most commonly used teaching methodologies of entrepreneurial education and their shortcomings. Course outlines and curricula borrowed from twenty (20) institutions of higher learning in Kenya were reviewed. Results indicate that entrepreneurial education in Kenya is largely theoretical and does not meet the needs of the modern entrepreneur. The paper therefore recommends innovative teaching methodologies of entrepreneurial education that can be utilised by the teacher to prepare students adequately to generate entrepreneurial ideas and to identify entrepreneurial opportunities. For this reason, the paper recommends the use of such methodologies as business plan generation, idea generation, innovation, creativity, networking, opportunity recognition, expecting and embracing failure, and adapting to change.

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Introduction

Taking off on a new venture, though potentially rewarding, is laced with enormous challenges, partly because of the uncertainty of the business environment (Timmons et al., 2011). Entrepreneurs start and manage businesses for growth and profit-making. The net effect is the economic growth of the nation. There is sufficient empirical evidence to suggest that entrepreneurship is a key driver of a nation's economic development agenda (e.g., Schumpeter, 1950; Christensen et al., 2002). This evidence shows that entrepreneurship is beneficial to the entrepreneur and the nation's economic development (Hisrich & Peters, 1995; Gorman et al., 1997; Jack & Anderson, 1998 & Henry et al., 2003). Studies in Europe have shown that small businesses that entrepreneurs create are a source of employment and a precursor to national wealth generation (e.g., Garavan, et al., 1997). Studies in the United States also show that national economic growth is directly proportional to entrepreneurial growth (Gavron et al., 1998).

In Africa, entrepreneurship is considered a key driver in alleviating poverty, economic development, and the growth of pluralistic and democratic societies (Nelson & Johnson, 1997). Developed countries are therefore providing funding to small and medium-sized enterprises (SMEs) in Africa to promote entrepreneurial development with the net effect of alleviating poverty in those countries. For example, Germany (German Technical Cooperation Agency, GTZ), USA (United States Agency for International Development, USAID), United Kingdom (Official Development Assistance, ODA), and Sweden (Swedish International Development Cooperation Agency, SIDA) have all been involved in providing funding to SMEs in Africa. Likewise, the African Development Bank, the United Nations Development Program, and the World Bank have all assisted these SMEs in the recent past.

A report by the World Bank in 2015 showed that SMEs in Africa were the key drivers of economic growth (World Bank, 2015). The report also showed that SMEs in developing economies contributed over 45% to total employment in those economies. Viewed in this perspective, entrepreneurship is therefore both a form of investment and an employment opportunity. This explains why international donor agencies and developed countries support entrepreneurial activities in developing countries (Khrystyna Kushnir, 2010). Entrepreneurs, however, cannot succeed without the requisite skill and knowledge on how to start and manage such entrepreneurial activities. The growing rate of unemployment among the youth in African countries, despite the presence of entrepreneurial opportunities to exploit, points towards inadequacy of skill and knowledge in starting and managing entrepreneurial activities in African countries.

This paper, therefore, seeks to examine the nature, content, and teaching methodologies of entrepreneurial education in Kenya and their effect on the status of entrepreneurship in the country. In particular, the paper will examine how entrepreneurship is taught in institutions of higher learning in the country to determine their efficacy towards inculcating the requisite entrepreneurial skills among graduates in those institutions. The paper will then recommend innovative methodologies in the teaching of entrepreneurship in institutions of higher learning in the country.

Entrepreneurship and socioeconomic development in Kenya

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In Africa, where the rate of population growth is indirectly proportional to the rate of employment, entrepreneurship conspicuously stands out as a crucial instrument for enhancing employment creation and poverty alleviation (Halim, et al., 2014). The question as to how entrepreneurship leads to socioeconomic development has been asked severally. From the outset, entrepreneurs start new businesses that in return create new jobs and enhance productivity and competition in the market. Entrepreneurs start these new businesses after identifying glaring gaps in the market. These gaps are a result of needs and demands for certain products that are either not on offer or are unsatisfactorily offered. The fact that such entrepreneurs are able to tap into opportunities in the market and utilise them for productivity is beneficial to the economy. The population requires access to goods and services to be productive. Entrepreneurs make these goods and services available to the populations. Even when entrepreneurs launch products in the market out of necessity and not as a result of an opportunity in the market, they make it easy for the population to access their goods and services in the market.

Kenya's economic growth experienced a dip after the 2007-2008 post-election violence but has since picked up to reach 5.7% in 2019 and is expected to rise to 5.9% in the medium-term of 2020 and to 6.0% by the end of the year 2020. This growth will be propelled by the current increased investor confidence, stable macroeconomic development, and a resilient services sector. Despite this promise in economic growth, the World Bank documents that a big percentage of Kenyans still live below the poverty line. However, the statistics show that the percentage of Kenyans living below the international poverty line has declined from 46.8% in 2005/06 to 36.1% in 2015/16 (World Bank, 2018). This percentage has declined to 29.2% in 2018, although the World Bank still considers it to be high. The World Bank report continues to note that Kenya will not achieve its goal of eradicating poverty by the year 2030, according to its Vision 2030.

Kenya's Vision 2030, the country's economic blueprint, provides that one of the strategies towards achieving Vision 2030 is to inculcate an entrepreneurship culture in which the performance of SMEs will be enhanced to promote the creation of employment opportunities, boost economic growth, and to reduce poverty in the country. One way of doing that would be to improve the human resource attributes of the entrepreneurs. A specialised training to the entrepreneurs and their membership organisations would be offered to equip them with the requisite entrepreneurial skills. To achieve this goal, an entrepreneurial subject would be initiated in institutions of higher learning to facilitate the development of a wide range of entrepreneurial culture. Since the greatest hurdle towards starting a business is the unavailability or inadequacy of capital, the government would enhance the existing Women and Enterprise Fund. The government would also encourage Financial and Micro Financial Institutions to extend affordable credit to Kenyan entrepreneurs.

Towards this end, the Youth Enterprise Development Fund was established in 2006 while the Women Enterprise Fund was established in 2007. The Uwezo Fund on the other hand was established in 2013 to facilitate access to enterprise funds by women, youth, and people with disabilities. Clearly, therefore, access to funds is not the main barrier towards entrepreneurial development in the country, considering that foreign aid providers are also ready to provide funds to Kenyan entrepreneurs.

After re-election in 2017, the Jubilee Government designed what has now come to be referred to as "The Big Four Agenda", comprising food security, affordable housing, manufacturing and universal healthcare. The government

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hoped that these agenda would facilitate the creation of jobs for Kenyans. Manufacturing, for example, would enable the government to focus on key areas of job creation such as leather and textile industry, agro-processing, and the blue economy. In housing, the government targets 500,000 Kenyans to own affordable houses by 2022 when the current government's term comes to an end. The government therefore intends to invite innovative ways of constructing affordable houses for its citizens. This is a good opportunity for entrepreneurs. Under affordable healthcare, the government intends to provide medical cover for all its citizens by 2022. It is not clear how the government would achieve this goal as it has not put in place concrete plans in medical education, innovation in medical practice, and the cost of medicine in the country. The final pillar of the Big 4 Agenda is food security in which the government would promote large scale commercial farming to increase food productivity. This would therefore call for innovation in farming, for example to generate seeds that require short rains to mature, fertilisers that can help on producing high yields and other innovative farming methods.

Clearly, therefore, the unavailability of funds for start-up capital, lack of government support, and lack of opportunities, among other reasons, cannot be the reasons for the slow pace of entrepreneurial development in Kenya. There are immense entrepreneurial opportunities in the country, the government has offered its support through its economic blueprints, finance and microfinance institutions are ready to provide support, and foreign aid providers are also willing to facilitate entrepreneurial development in Kenya. There is need to explore other reasons for the slow pace for entrepreneurial growth in the country. The section that follows will explore entrepreneurial education as a possible reason for the slow pace of entrepreneurship in the country.

Entrepreneurial education

Globally, entrepreneurship education is not a recent phenomenon. The history can be traced to Shigeru Fujii of Kobe University in Japan in 1938 (Solomon, et al., 2002) and also to Myles Mace at Harvard Business School in 1947 (Katz, 2003). This was done in what has now come to be referred to as "innovation-driven" countries. It was initially believed that entrepreneurship cannot be taught in schools, especially when Steve Jobs and Bill Gates dropped off to start their own businesses. Later, it was discovered that these two could not represent typical entrepreneurs across the globe and that entrepreneurship education was important. Entrepreneurship has therefore been a subject in most institutions of higher learning across the globe. In these innovation-driven countries, entrepreneurship education is at an advanced stage and attention has now turned to assessing the efficacy of entrepreneurship programs with a view to improving them. Several studies have been carried out in these countries in the past, for instance, in the UK (Jones-Evans, et al., 2000), German-speaking countries (Klandt, 2004), Australia (Jones & English, 2004), and Oman (Khan & Almoharby, 2007).

Entrepreneurship education is offered to students to boost their entrepreneurial spirit and behaviour through effective training. Learners are therefore equipped with knowledge and skill required for setting up and running a business (Zabihi & Moghaddasi, 2006). An entrepreneur should be able to look at the environment, identify new business opportunities, gather resources, and design an action plan to utilise those opportunities. The entrepreneur is therefore a creator of job opportunities, a contributor to the development of the nation, and a role model to members of his/her society. The entrepreneur must therefore possess certain qualities. First, he/she must have self-

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confidence. Self-confidence involves such attributes as confidence, independence, individualism, optimism, and dynamism. The entrepreneur must also be original in their innovations. This requires the entrepreneur to be innovative, creative, resourceful, initiative, and knowledgeable.

An entrepreneur must also be people oriented. This calls for such an entrepreneur to be flexible, able to get along with other people well, and responsive to suggestions and criticisms. Entrepreneurs are also required to be task and result oriented. Attributes for such an entrepreneur include being a hard worker, possessing high energy and drive, persistent, perseverant, determined, profit-oriented, and having a desire to achieve the goals that they have set. An entrepreneur must also be a risk-taker. The entrepreneurship environment involves taking risks. This calls for the entrepreneur to like facing new challenges and the ability to take new risks.

Can these qualities be taught in school? Is there a difference between entrepreneurial capabilities and technical skills that an entrepreneur must possess? Most entrepreneurship education programs in Kenya and in Africa at large have been designed for people who are already in entrepreneurship. Whereas learners continue taking these programs every year, there is little progress in entrepreneurship development. Very few can identify business opportunities in the market and utilise them effectively. The nature and purpose of entrepreneurship education must therefore be examined in the section that follows.

The nature and purpose of entrepreneurship education and training

Entrepreneurship education may take different forms, and, for the most part, depends on the education level in which it is being offered. For example, primary school pupils in Scotland are offered a subject referred to as “enterprise education” where they are taught about being entrepreneurial and enterprising in a general sense, and not necessarily knowing how to start and manage a business. Some institutions of higher learning, especially those in Kenya, offer entrepreneurial education from a theoretical perspective. Such institutions teach their learners “about” entrepreneurship. These universities do not, therefore, teach their learners such concepts as idea generation, creativity, innovation, opportunity recognition, business planning, sources of funding for a business venture, and managing the business. Other institutions teach their learners “how-to” do entrepreneurship. Universities under this category allow their learners to participate in the learning process by putting into practice what the teacher is teaching them.

Discussions about entrepreneurship education must focus on course objectives. According to Jamieson (1984), the objectives of the entrepreneurship course are: education “about’ entrepreneurship, education “for” for entrepreneurship, and education in enterprise (Jamieson, 1984). Education “about” entrepreneurship requires teachers of entrepreneurship to enlighten their learners on what entrepreneurship is, its procedures and features, among other theoretical aspects. Learners are therefore not enlightened about “how-to” do entrepreneurship (Kailer, 2009). Education “for” entrepreneurship requires entrepreneurship teachers to expose their learners to the creation of ventures that they can claim ownership. This kind of education questions the traditional approaches to entrepreneurship education and therefore calls for a paradigm shift from the traditional instruction methods such as the use of lectures to innovative ways of teaching the subject to ensure that the learner participates in the process

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(Mwasalwiba, 2010). Education in enterprise, on the other hand, exposes learners to participate in the creation of their own ventures.

Regarding "what" to teach, Sexton (1997) carried out a study on this topic and identified the ten most important areas to be taught in entrepreneurship (Sexton, et al., 1997). The topics discovered in this study were mainly related to business, for example, training employees, managing cash-flow, financial growth, and selling. Further research has shown that entrepreneurship education and training need to be broader than this to encompass leadership skills and confidence, creative thinking, and opportunity recognition (Stevenson & Gumpert, 1985). The main course objective should therefore be to promote creativity, innovation, and self-employment.

Traditional entrepreneurship education was teacher centred. The teacher was (and has been, for those who still make use of this methodology) the expert and the sole source of feedback. Students played (and continue to play) a very passive role in the education system. Written texts in the form of books and journal articles are referred to by both the teacher and the students to facilitate the learning process. The teacher does not assess the students for any immediate goals, because assessment will take the form of a written test in the middle or at the end of the semester. The methodology is less involving for the teacher and less expensive for the institution. It does not require inviting guests who may come at a fee, purchasing materials for demonstrations, procuring entrepreneurship plans to act as samples for the students or attaching the students for internships in entrepreneurship firms. By its very nature therefore, the traditional methodology of teaching entrepreneurship is poorly responsive to entrepreneurial needs and it only prepares students to look for jobs once they complete school and not to create them. Worse still, such students may also not be adequately prepared to take up their employment positions as they lack the requisite skill and knowledge.

Perhaps this traditional methodology of teaching entrepreneurship is what Paulo Freire was alluding to in his masterpiece, Pedagogy of the Oppressed. Freire refers to this methodology as "narration" in which the teacher mechanically narrates to their students about the content, expecting the students to memorise and regurgitate such content in the exam (Freire, 2006). This student will never understand the essence of such a narration. Viewed in this perspective, education therefore becomes an act of depositing, so that students are the depositories, and the teacher is the depositor. The teacher narrates, the students listen, receive, memorise, and then repeat the narration in the examination. He refers to this phenomenon as the "banking concept" of education. Under this concept, it is only the teacher who can "deposit" education to the student. The teacher is all-knowing, and the student knows nothing. By so doing, the teacher denies the students an opportunity to innovate, be creative, critique and identify gaps that need to be filled.

Freire proposes that the banking concept should be rejected in its entirety, and instead, adopt a methodology that takes men and women as conscious beings. Under consciousness, teachers should pose real-life problems to their learners to solve. This is the "problem-posing" methodology of education. The teacher subjects their students to a dialogue, so that the teacher learns from the students and the students learn from the teacher. In this kind of a discussion, the students are set free to think. And they express their thoughts through the dialogue with their teacher. Hence, the concept of "authority" derived from readings does not arise. Instead, students and the teacher together find a new way of solving real-life, world problems in a manner that has not been done before. Entrepreneurship

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education would immensely benefit from such kind of a methodology, owing to its practical nature. Instead of entrepreneurship students being taught about theories that exist in books and journal articles, they are taken through practical steps of idea generation, opportunity recognition, problem-solving, and critical thinking, to mention a few. This paper will recommend innovative methodologies of teaching entrepreneurship education in Kenya.

Methodology

This is a mixed-method research of an exploratory kind. Exploratory research design was selected because entrepreneurial education has not been extensively examined in Kenya. Therefore, this topic sought to have a better understanding of the nature of entrepreneurial education and the teaching entrepreneurial methodologies in institutions of higher learning. Exploratory research design seeks to investigate a problem that has not previously been thoroughly researched in the past in the chosen research area. Both primary and secondary research techniques are used in collecting data for an exploratory research design. Since the aim is to explore a rarely explored problem in the research area, the researcher can make use of both qualitative and quantitative methods. For the current research, qualitative research techniques were used. The aim of using qualitative research techniques was to establish the nature of entrepreneurial education, how entrepreneurship education is taught in institutions of higher learning in Kenya, the teaching methodologies used by teachers of the subject, and the course content that the teachers use when teaching the subject. The aim was not to quantify issues in the topic; hence, quantitative research techniques were not preferred.

A sequential exploratory approach was adopted, involving two stages: The first stage involved a critical review of course outlines, syllabuses, curricula and teaching methodologies adopted by entrepreneurship teachers in institutions of higher learning in Kenya. this stage was entirely qualitative because the idea was to examine course outlines, curricula, and teaching methodologies and to juxtapose them with best practices that have been developed by theorists and researchers of the subject in the past. Course outlines and other materials from twenty (20) institutions of higher learning in Kenya were assembled and reviewed with a view to determining the teaching methodologies used by entrepreneurship teachers in those institutions. According to Mason (2002), qualitative research of this nature produces holistic understandings of rich, contextual, and generally unstructured, non-numeric data. This is because it enables the researcher to engage with participants and material selected as sources data to answer the research question (Creswell, 2009).

Case study approach was applied to enable the researcher to focus on the questions of how entrepreneurship education is taught in Kenyan universities and why certain methodologies are preferred to other methodologies. According to Myers (2009), case studies are essential in descriptive and exploratory research designs because they focus on the "why" and "how" questions. Stake (2005) writes that a case study approach can be used to describe processes, individual or group behaviour, and the frequency with which the behaviour occurs. Case study approach also supports theory building (Ying, 2009) and theory testing (Eisenhardt, 1989). Professor Bitange Ndemo's methodologies of teaching entrepreneurial education were utilized in this study as best practices and therefore a relevant case study in entrepreneurial education in Kenya.

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The second stage involved a review of relevant literature in entrepreneurial education. Data was collected through triangulation method. Triangulation is the most suitable data collection technique for mixed-method research (Tashakkori & C., 2003). This involved a review of literature, course outlines, curricula, syllabuses, reports, investigation of theoretical and empirical models, interviews with students and experts in the field of entrepreneurship and enquiries by sending emails to researchers and entrepreneurial teachers. Triangulation is the use of more than one approach in research to increase confidence in the research as results of the research are subjected to more than one independent measure of confirmation and verification (Williamson, 2005). It is submitted that literature in this area is vast, but none has made recommendation for innovative teaching methodologies in entrepreneurial education in Kenya, hence, exploratory research design is preferred. The findings were synthesised and presented in the sections that follow.

Entrepreneurship education in Kenya

Entrepreneurship education in Kenya has developed over time. The development of the education curriculum of the country has largely informed the development of entrepreneurship education. Several studies to change the education system of the country have been carried out in the past, and reports generated. The Ominde report of 1964, recommended that there should be more practical subjects in the curriculum and that the education curriculum should be tailor-made for creating employment opportunities for Kenyans (Ominde, 1964). The report did not, however, address the issue of inculcating practical skills to learners, as it focused more on white-collar jobs. The National Commission on Educational Objectives and Policies (NCEOP) (Gachathi Commission), on the other hand, focused on national development and education objectives and recommended an improvement on equal distribution of income, equal opportunity for all citizens, freedom from poverty, social justice, promotion of cultural heritage, religious freedom, and political equality (Gachathi, 1976). In particular, the report recommended the teaching of vocational subjects in the technical, agricultural, and business fields. One other important recommendation was to put more emphasis on the teaching of science subjects in schools. These recommendations were not implemented as the death of Kenya's first president shifted focus from education to politics.

When the new president assumed office, the need for the establishment of a second university took centre stage. The new university would be technology-based. The Mackay Commission of 1981 was therefore appointed (Mackay, 1981). This commission recommended the education curriculum to be changed from 7:4:2:3 to 8:4:4. This was implemented in 1985. The idea behind the change of the system was to produce self-reliant individuals who could fit in different working environments. This system turned out to be very costly to parents, leading to several students dropping out from school. It had to be implemented, nonetheless, owing to the one-party rule that was hardly questioned. In 1998, the Koech Commission was established to determine the status of the implementation of this system. The recommendations of this commission were deemed not favourable to the one-party rule and, expectedly, were never implemented (Okech & Asiachi, 1992).

Throughout this journey, three reports stood out as the precursors to the teaching entrepreneurial education: the Ominde report, the Ndegwa report, and the International Labour Organization report of 1964, 1971, and 1972, respectively. These three reports recommended the introduction of the teaching of business studies in schools. This

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would be a good strategy of promoting entrepreneurship education in schools. The Kamunge report of 1988 was particular regarding entrepreneurship education: entrepreneurship education should be introduced in all schools and all levels to equip students with practical skills and training. The then Ministry of Technical Training and Applied Technology therefore took the mandate of creating awareness about and introducing entrepreneurship education in all vocational and technical training institutions in the country. The United Nations Development program (UNDP) played a key role in funding this education which was implemented by the International Labour Organization (ILO). In 1990, entrepreneurship education was introduced in all vocational and technical training institutions as a compulsory subject. Students were required to draft proposals for business ventures of their choice under the guidance of their tutors.

The government is committed to providing entrepreneurship education as a way of achieving its Vision 2030 economic blueprint. Vision 2030 provides that entrepreneurial development programs will be introduced in schools and institutions of higher learning to foster the development of skills for job creation among the youth. Currently, entrepreneurship education is offered both as a stand-alone course and as a subject in almost every institution of higher learning in the country. Even where students are taking a different course in institutions of higher learning, the institutions require the students to take entrepreneurship education as a common course, without which they are not allowed to graduate. With this kind of background, this paper will examine the curricula, content and teaching methodologies of entrepreneurship education in institutions of higher learning in Kenya.

Curricula, content, and teaching methodologies of entrepreneurship education in Kenya

Curricula and content

A total of twenty (20) course outlines from different institutions of higher learning in Kenya and their contents were reviewed in this research. Fifteen (15) of these course outlines were picked from universities while five (5) were picked from middle-level colleges that are offering entrepreneurship education in the country. In addition, a total of 10 entrepreneurship teachers were interviewed with a view to determining the content that they deliver to their leaners. A total of thirty (30) learners, comprising twenty (20) from universities and ten (10) from colleges, were also interviewed to ascertain the kind of entrepreneurship education they undergo. The results of the interviews and course contents are discussed below:

Review of course outlines

90% of the course outlines and syllabi that were reviewed showed that the teaching of entrepreneurship education in Kenyan institutions of higher learning is largely theoretical. The commonest topics that are taught in these institutions are: meaning of entrepreneurship, nature, theory and philosophy of entrepreneurship, types and characteristics of entrepreneurs, evolutionary nature of entrepreneurship, importance of entrepreneurial activity in social, economic, ecological and political development, policy and conceptual framework for promotion of small businesses in Kenya, approaches to understanding entrepreneurship, challenges and rewards of entrepreneurship, entrepreneurial behaviour, government and entrepreneurship, and how to become an entrepreneur. Modes of assessment in these course outlines include, an end-of-semester exam requiring students to sit for a written exam for 2 hours, group presentations, sit-in CATs at the middle of the semester, and individual presentations.

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A minority of the course outlines, one of which is used as a case study in later sections of this paper, had very practical topics. These topics include evaluating entrepreneurial opportunities (including business idea generation), selecting suitable markets, business plan development, the entrepreneurship personality, creativity and innovation, opportunity recognition and analysis, strategies for a new venture, and negotiation and deal structuring. Assessment in these practical course outlines is still theoretical because it is based on the university curriculum in which all students must sit for an end-of-semester exam worth 70 marks. Entrepreneurship teachers are not given room to be different and instead administer a project to the students in which the students can apply the concepts learnt in the course of the semester to identify a business opportunity and generate a business plan, for example. Examining entrepreneurship students through a sit-in exam, however practical the exam may appear, does not help them because the exam is timed to at most 2 hours and the students will still be expected to memorise and regurgitate concepts in the exam. This reflects the "banking concept" that Freire developed (Freire, 2006).

Results from interview with entrepreneurship teachers and students

92% of entrepreneurship teachers stated that Kenya's entrepreneurship is still founded on the education curriculum of the country and the curricula provided by university management. In most universities, lecturers are given a curriculum that they are required to use to generate their course outlines. Most of these curricula are still theoretical and therefore most teachers are misled into adopting the theoretical teaching methodologies. Asked about what informs their choice of topics to teach in entrepreneurship education, the teachers responded that the university curricula already have proposed topics and that a teacher can only deviate a little from the proposed topics. Hence, they end up teaching theoretical aspects of entrepreneurship. Regarding evaluation, these teachers stated that they are bound by the university curriculum to administer an end-of-semester exam to be done between 2 and 3 hours. This means that they are not at liberty to administer term projects that are reflective in nature and which require students to draft, design, and present entrepreneurial concepts for evaluation.

95% of entrepreneurship students indicated that they enjoyed the contents and curricula as it was easy for them to pass exams, owing to the availability of notes. Students who are fond of committing themselves to other activities at the expense of attending classes were the most joyful as they are able to borrow notes in soft or hard copy and still pass their exams. In addition, the content that is taught in these institutions is readily available through online platforms and they can just search for such content by themselves. The content does not require any creativity, innovation, or presentation. It therefore means that students can read the same notes over and over again and still pass their exams. Passing exams is the most coveted thing among these students because their transcripts will show that they worked hard and deserve employment. Problems usually arise where such students, while in employment, are asked to create or innovate new products. It becomes very difficult for them to do that because they only memorised content to sit for and pass their exams. This kind of learning is also reminiscent of the "banking concept" that Freire developed (Freire, 2006). It does not pose problems to students to solve.

A review of teaching methodologies for entrepreneurship education

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98% of the course outlines reviewed, and the responses received from interviews with entrepreneurship students and teachers, shows that the most prevalent teaching methodology in entrepreneurship education in Kenya is the traditional lecture method in which discussions are led by the lecturer, students can take notes, the lecturer may or may not send notes in hard or soft copy version, and questions are asked by students and answered by the lecturer. The appearance of the course outlines reviewed in this paper also shows that the teaching methodologies are theoretical. Images of two of these course outlines are shared below:

COURSE OBJECTIVE
This course is designed to enable learners to develop insight into entrepreneurship theory and concepts and to acquire knowledge to nurture entrepreneurship development at individual and organizational context.

METHODS OF DELIVERY
Lectures, case study analysis and group discussions.

COURSE CONTENT

1. Introduction
   - Definition of terms: entrepreneurship and entrepreneur
   - Evolutionary Nature of Entrepreneurship
   - Importance of entrepreneurial activity in social, economic, ecological and political development
   - Policy and Conceptual framework for promotion of small businesses in Kenya
   - Building an entrepreneurial society
2. Approaches to Understanding Entrepreneurship
3. Entrepreneurial Personality types
   - Characteristics and background factors, typologies/categories

Image 1: A course outline in one of the universities in Kenya

The entire course outline is 2 pages long and the Course Title is Entrepreneurship Theory and Concepts. The lecturer has stated that the methods of delivering the course are lectures, case study analysis and group discussions. These are the most prevalent methodologies used in delivering courses in institutions of higher learning in the country. On evaluation, the lecturer has stated that students would sit for two (2) CATs and an end-of semester examination. One of the CATs would be group presentations.

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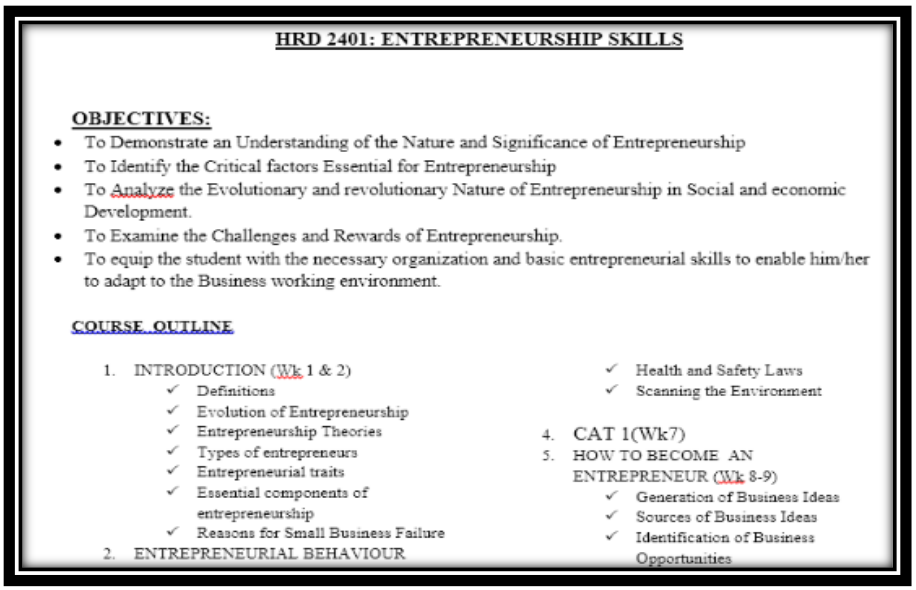

HRD 2401: ENTREPRENEURSHIP SKILLS

OBJECTIVES:

- To Demonstrate an Understanding of the Nature and Significance of Entrepreneurship
- To Identify the Critical factors Essential for Entrepreneurship
- To Analyze the Evolutionary and revolutionary Nature of Entrepreneurship in Social and economic Development.
- To Examine the Challenges and Rewards of Entrepreneurship.
- To equip the student with the necessary organization and basic entrepreneurial skills to enable him/her to adapt to the Business working environment.

COURSE OUTLINE

1. INTRODUCTION (Wk 1 & 2)
   - ✓ Definitions
   - ✓ Evolution of Entrepreneurship
   - ✓ Entrepreneurship Theories
   - ✓ Types of entrepreneurs
   - ✓ Entrepreneurial traits
   - ✓ Essential components of entrepreneurship
   - ✓ Reasons for Small Business Failure
2. ENTREPRENEURIAL BEHAVIOUR
   - ✓ Health and Safety Laws
   - ✓ Scanning the Environment
4. CAT 1(Wk7)
5. HOW TO BECOME AN ENTREPRENEUR (Wk 8-9)
   - ✓ Generation of Business Ideas
   - ✓ Sources of Business Ideas
   - ✓ Identification of Business Opportunities

Image 2: A course outline in another university in Kenya

The above course outline has listed several objectives of offering this course to students. The listed objectives do not show any sign that students will be taken through practical activities of opportunity recognition, critical analysis, innovation or business planning, yet the course title is "Entrepreneurship Skills". There is every reason to believe that the course delivery methodology is a traditional theoretical one in which the lecturer is in charge and the students are just recipients of content from the lecturer.

The course objectives in the above course outline, for example, require a closer examination. The first objective is to demonstrate an understanding of the nature and significance of entrepreneurship. A lecturer seeking to achieve this objective with their entrepreneurship students may want to lead the students in understanding what entrepreneurship is, the role of entrepreneurship in individual and national development, and how to identify entrepreneurial opportunities in the market and utilise them to introduce new products. This is not the case for the lecturer who taught entrepreneurial education in the above course outline. The lecturer took the students through definitions of terms, significance of entrepreneurship as discussed by various scholars, and a theoretical approach to the study of entrepreneurship. The lecturer was in control of the discussions and student questions were answered without any further probing and criticality. The second, third, fourth and fifth objectives are also theoretical in approach and do not present any need for practicality or innovative reasoning. Concepts like "evolutionary" and "revolutionary" nature of entrepreneurship and "challenges and rewards of entrepreneurship" are also largely theoretical. A third course outline is presented below:

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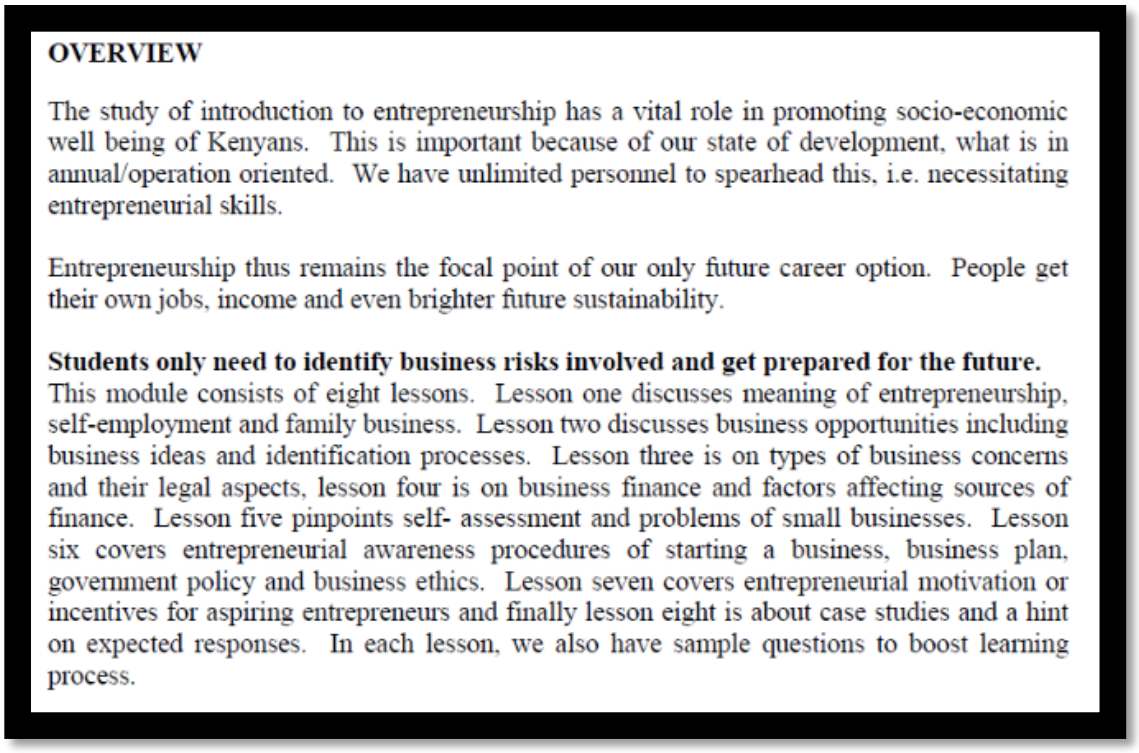

OVERVIEW

The study of introduction to entrepreneurship has a vital role in promoting socio-economic well being of Kenyans. This is important because of our state of development, what is in annual/operation oriented. We have unlimited personnel to spearhead this, i.e. necessitating entrepreneurial skills.

Entrepreneurship thus remains the focal point of our only future career option. People get their own jobs, income and even brighter future sustainability.

Students only need to identify business risks involved and get prepared for the future.
This module consists of eight lessons. Lesson one discusses meaning of entrepreneurship, self-employment and family business. Lesson two discusses business opportunities including business ideas and identification processes. Lesson three is on types of business concerns and their legal aspects, lesson four is on business finance and factors affecting sources of finance. Lesson five pinpoints self- assessment and problems of small businesses. Lesson six covers entrepreneurial awareness procedures of starting a business, business plan, government policy and business ethics. Lesson seven covers entrepreneurial motivation or incentives for aspiring entrepreneurs and finally lesson eight is about case studies and a hint on expected responses. In each lesson, we also have sample questions to boost learning process.

Image 3: A third course outline in a university in Kenya

The course outline recognises that entrepreneurship is vital in promoting the socioeconomic well-being of Kenyans. It is, however, not clear what the lecturer who designed it meant by "what is in annual/operation oriented". The outline further recognises that "we have unlimited personnel to spearhead this, i.e. necessitating entrepreneurial skills". It is also not clear what this means. Is the lecturer saying that personnel and entrepreneurial skills are coterminous? Does having adequate personnel translate to adequate entrepreneurial skills? A critical examination of the entire course outline does not show how the lecturer intends to deliver the course content, that is, the teaching methodologies that the lecturer would utilise in delivering the course content. The entire outline does not also indicate whether students would be required to demonstrate their innovation and creativity by getting involved in the practical aspects of entrepreneurship under the guidance of the lecturer. Most of rest of the course outlines used in this research are similar to the ones presented above.

The commonest entrepreneurship education methodologies in institutions of higher learning in Kenya are therefore the traditional lecture method in which the lecturer is in control and students are mere recipients of content, group presentations in which students are assigned a topic to research on and present in class as the lecturer listens and awards marks, individual presentations in which individuals are assigned topics to present in class, and general discussion in which the lecturer sends notes in advance for students to read in readiness for class discussion led by the lecturer. However, one course outline stands out from the rest, and will be briefly discussed in the section that follows. This case study presents a different dimension in the teaching of entrepreneurship education in Kenya.

Prof Bitange Ndemo's methodological approaches: A case study

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Out of the course outlines reviewed in this paper, Professor Bitange Ndemo's course outline, teaching materials and teaching methodologies stand out. Another outline and teaching materials that stand out are the ones prepared by Mr. Cliff Onsongo of Mount Kenya University for the distance learning program of the university. This section will use Professor Bitange Ndemo's teaching methodologies as a case study. Professor Ndemo is, at the time of writing this paper, an Associate Professor of Entrepreneurship at the University of Nairobi's Business School. Besides being a Professor of Entrepreneurship, he has been a Permanent Secretary in the Government of Kenya for over eight years where he oversaw the launch and development of several entrepreneurial projects, among them being the launch of the M-Pesa project, a mobile-money project that has now become very famous in Kenya and the globe at large. His research work on entrepreneurship is also conspicuous among in the midst of a growing body of literature on the subject. Some of his publications on entrepreneurship include: The Promise of New Entrepreneurial Models in Africa's Digital Future (2018), Small and Medium Enterprises in Kenya: Current State, Opportunities and Challenges (2018), Digital Entrepreneurial Behaviour and Government Support in Kenya (2018), and Entrepreneurial Education and Innovative Pedagogy: A Case Study of Mpesa Foundation Academy (2019).

In the last three years, Ndemo has taught the following subjects, at bachelors, masters, and Doctorate level: Entrepreneurship, Entrepreneurship Theory and Practice, Entrepreneurial Seminar, Managing a Growing Business, New Venture Creation and Development, Global Business Seminar, Theory in Global Business Management, Seminar in Entrepreneurship and Small Business Development, and Conceptual and Theoretical Foundations of Entrepreneurships And Small Business Development.

Ndemo's course outline on Entrepreneurship for bachelor's level has both theoretical and practical topics. The topics include: the nature of entrepreneurship, entrepreneurship personality, creativity and innovation, opportunity recognition and analysis, business planning, financing a business venture, strategy for a new venture, managing growth of a business, and negotiation and deal structuring. Under creativity and innovation, Ndemo teaches creativity and the process of innovation and methods of enhancing creativity and innovation. Materials that the researcher accessed confirm that Ndemo takes his students through a practical and reflective procedure to enable them to appreciate the creativity and innovative procedure. Reflective questions are provided in the last two slides of the lecture materials. Under opportunity recognition and analysis, Ndemo teaches such ideas as the opportunity recognition framework, sources of opportunity, sources of entrepreneurial ideas, sources of competitive advantage, measuring success, and keys of enhancing opportunity recognition. These topics, among others, make Ndemo's course content very different from his counterparts in other universities in the country whose content is largely theoretical.

With regard to teaching methodologies, Ndemo utilises a variety of methodologies in his content delivery. Students are required to individually generate business ideas to facilitate their understanding of course contents. They do this through identifying opportunities and analysing them under the guidance of the lecturer. They are also required to draft business plans and identify sources for new venture financing. Student contributions are very valuable in Ndemo's classes as they define the direction the lecture takes. In a discussion with some of his students, it was clear that they enjoyed his classes. Besides utilising the traditional lecture method and class discussions, Ndemo invites guest lecturers to talk to his students. Such guest lecturers are usually selected from among the business community

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to enable students to interact with real-life entrepreneurs. In an interview with one of his students, it was clear that his students enjoy this departure from ordinary lectures because it enables them to learn from successful businesspeople in the market. These methodologies are reflective of a paradigm shift from the traditional lecture method where the lecturer is always in charge and students play a passive role.

Towards an innovative pedagogy in the teaching of entrepreneurship education

Empirical research is replete with evidence that entrepreneurship education, when taught the right way, can lead to the creation of entrepreneurs, increase in entrepreneurship activity, and creation of more jobs in the economy. Gerba (2012) notes that promoting entrepreneurship is now a matter of public policy. According to Matlay (2006), public policy makers believe that entrepreneurship education fosters the growth of both the quality and quantity of entrepreneurship activity. Sardeshmukh and Smith-Nelson (2011) have therefore argued that there is need to teach entrepreneurship education in a manner that fosters innovation and creativity to enable students to identify, analyse and implement entrepreneurial opportunities. This view is also shared by Kirby (2002), Blenker et al. (2006) and Shambare (2013). Mwasalwiba (2010) concedes that entrepreneurship teachers face a big challenge when selecting the most suitable teaching methods that take into account the course objectives, types of students in the program, and the environment.

Considering the drawbacks of the traditional methods of teaching entrepreneurship education, Lourenço and Jones (2006) recommended that an enterprise methodology should be adopted. To them, an enterprise methodology involves the students learning by doing. It is also based on the cognitive learning model. Instead of being passive, they recommend that learning be made to be goal-oriented, constructive and dynamic. The process is transformative, and students are engaged in the construction of knowledge all through the learning process. This is an approach that is worth adopting in teaching entrepreneurship education because it allows students to own the learning process by actively participating in it.

Mwasalwiba's (2010) dichotomy on teaching methodologies on entrepreneurship education being either traditional or innovative illuminates on how modern entrepreneurship education should be taught. On innovative pedagogy, Mwasalwiba argues that the teacher need not dominate the learning process, and that he/she only needs to stimulate the learners' minds and then allow them to discover concepts on their own based on attitude, knowledge and abilities. Learning should be student-centred, other than teacher centred. He, however, notes that innovative methodologies are expensive and may not fit into the university curricula. They include personal and group projects, business plan development, role play, computer simulation of business games, workshops, new business creation, visitation to entrepreneurs, invitation of entrepreneurs to deliver guest lectures, creation of new ventures by students, and participation in behavioural simulations. Therefore, a model that comprises both enterprise and innovative methodologies can be created to facilitate the teaching of entrepreneurship education. This model is presented below:

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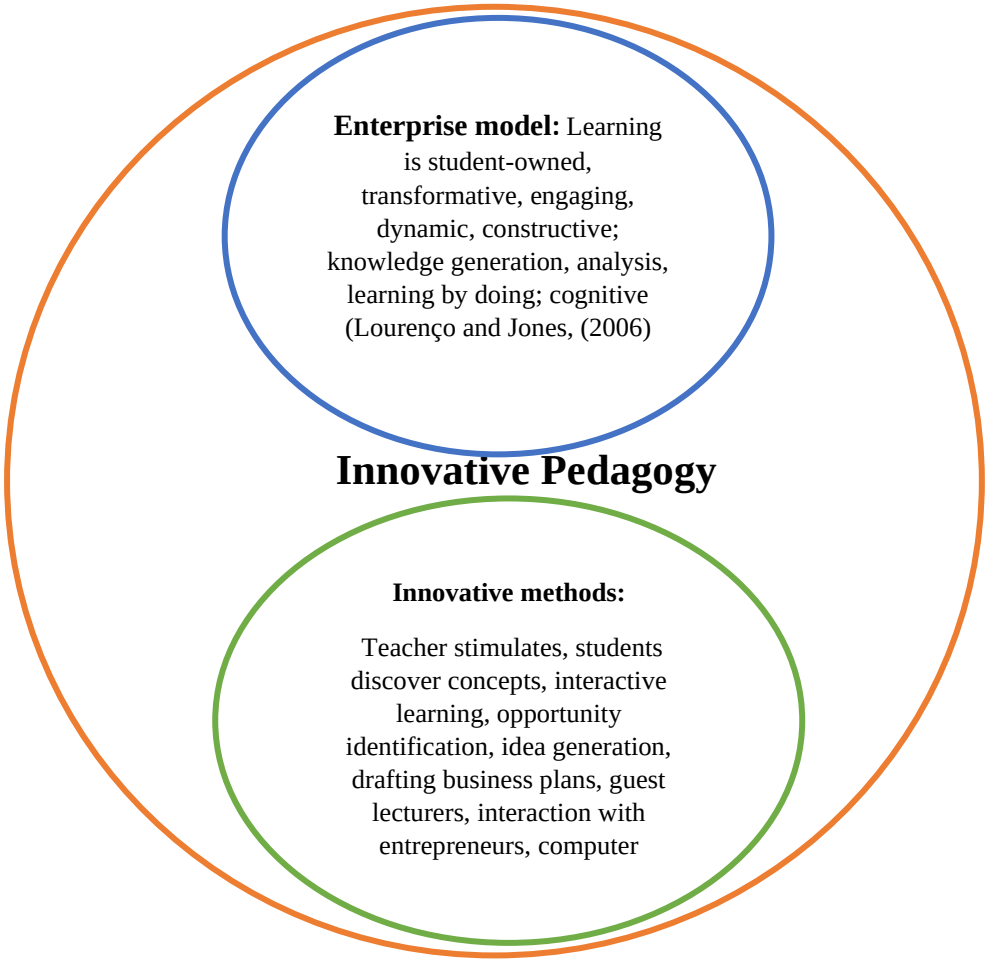

Figure 1: A model on Entrepreneurship Education

Conclusion and recommendations

This paper sought to examine the nature, curricula, content, and teaching methodologies on entrepreneurship education in Kenya. It established that Entrepreneurship education in Kenya is offered in almost every institution of higher learning in the country. It also established that the country's economic blueprint of Vision 2030 recognises entrepreneurship as a key driver towards the ultimate goal of economic development. In this regard, entrepreneurship education becomes a crucial tool towards realising this goal. Concerning the relationship between entrepreneurship education and economic development, empirical research is replete with results that show that entrepreneurship education equips potential entrepreneurs with the knowledge and skill that they require to identify business opportunities, generate ideas, analyse them, and implement them.

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Findings from the research show that entrepreneurship education in Kenya has been, and continues to, largely theoretical, which means that learners are taught "about" entrepreneurship and not "for" entrepreneurship. The contents, curricula, and teaching methodologies in entrepreneurship education in the country reflect an education system that largely teaches entrepreneurship theory about what entrepreneurship is, what it means, and when it is taught. For this, the paper recommends that contents and curricula of entrepreneurship education should be redesigned to include practical concepts about how learners can become entrepreneurs. Such contents and curricula should include items on entrepreneurial idea generation, creativity, innovation, opportunity recognition and analysis, business planning, financing a business venture, strategy for a new venture, managing growth of a business, and negotiation and deal structuring. By carefully implementing a curriculum of this nature, learners will not only have bene taught about entrepreneurship education but also how to become entrepreneurs.

To implement the contents and curricula in the right manner, the right teaching methodologies must be used. They include requiring students to individually generate business ideas to facilitate their understanding of course contents. The student should do this by identifying opportunities and analysing them under the guidance of the lecturer. They should also be required to draft business plans and identify sources for new venture financing. This will enable them to put into practice what they have learnt in class and from books. Another approach would be to invite guest lecturers selected from the business community to enable students to interact with real-life entrepreneurs.

Whilst merging concepts from previous empirical research on enterprise model (Lourenço and Jones, 2006) and innovative methods (Mwasalwiba's, 2010), the paper concludes that entrepreneurship education can be taught through innovative pedagogies with elements from both enterprise and innovative models. For purposes of future research on this topic, only selected institutions of higher learning were used in the process of collecting data for this research because of time and funding constraints. This might have affected the quality of the data gathered. Future researchers may want to either collect data from all institutions of higher learning in Kenya or improve on the number of institutions that the current research used.

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Africa Aviation:
Challenges and Opportunities

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Abstract

This study sought to apply the Structure Conduct Performance paradigm to Africa´s air transport landscape in general. To do that, it examines the past, present, and future expectations of four of Sub-Saharan Africa's biggest aviation economies, namely South Africa, Kenya, Ethiopia, and Nigeria. Secondary data containing historical passenger traffic was analysed, and predictions for growth in the next ten years were proposed. The findings suggest that the experience of the existing liberalization initiatives, such as the Yamoussoukro Declaration (YD), has produced less than expected benefits. However, the future of aviation in Africa is somewhat positive, with a growth trajectory expected to follow a linear and gradual path supported by various initiatives, including the Single African Air Transport Market (SAATM) and the African Continental Free Trade Area (AFCTA). The study's contribution is to illuminate the current discourse on the aviation sector in Africa through the Structure-Conduct-Performance theory paradigm and suggests a conceptual model that could be applied to future studies relating to aviation in Africa.

Key words: Liberalization, Air transport, Africa, Strategy, SCP

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Background of the Study

There is consensus that on the whole the future of aviation in Africa has significant economic potential with significant other challenges needing to be overcome. The existence of a large land mass that requires to connect with itself, a growing population and specifically a growing middle class with an appetite for air travel, an extensive extractives sector and a growing tourism sector can provide the necessary demand conditions. In support of this, regional economic communities have led the way in implementation of YD. This is especially so in West Africa through the West African Economic and Monetary Union (WAEMU) and the Banjul Accord Group (BAG) which have facilitate the development of the most liberalized air transport market in Africa (Schlumberger, 2010). At a higher level the full implementation of YD requires that states disengage from the industry, liberalise access and facilitate the increased participation of the private sector (Njoya et al, 2018). Some of the challenges that need to be overcome include high user charges and taxes, under-capitalization of African airlines and insufficient management experience which have contributed significantly to the low profitability of African airlines.

Air travel has dramatically revolutionized and unified humanity and revolutionized civilization by facilitating world tourism and trade (Strausz-Hupe, 1955). The world is now able to easily connect even the most isolated communities. Restrictions on the capabilities of individuals, firms and on the whole individual nations' growth can be mitigated through the growth and development of the sector. Aviation enhances international cooperation, economic development and integrations. However, the ability of airlines to access foreign markets and exploit growth expansion potential has been traditionally hindered by restrictive regulatory regimes (Abate, 2014). This state of play runs contrary to the raison d'etre of aviation which is to connect people.

The airline industry presents a paradox (Doganis, 2006). It is the most international of industries, yet in terms of ownership and control it is almost exclusively national. It is highly regulated and beset by a complex web of economic regulations. The 1944 Chicago Convention laid the foundation for the future development of international civil aviation which could greatly help to create and preserve friendship and understanding among the nations and peoples of the world. It could therefore be argued that improved intra-African connectivity can facilitate business and trade, enables tourism, connects friends, families and cultures, and promotes the exchange of knowledge and ideas.

That air transportation is vital for international people and freight facilitation is strongly supported by scholars and practitioners. The sector enhances regional integration through labour mobility, tourism and trade this is especially true when air travel is juxtaposed with the inadequacies of other forms of transport on the continent of Africa (Amankwah-Joseph; 2018; Steyn & Mhalanga, 2016; Njoya, 2016; Button et al, 2015, Heinz & O'Connell, 2013). The aviation sector in Africa has shown positive growth over the last 20 years. Growth in demand has arisen from competition for natural resources including oil, gas, mining and increases in inbound tourism, a growing middle class and an increased propensity to fly.

Global aviation supports 65.5 million jobs and supports 3.6 percent of global Gross Domestic Product (GDP). In Africa the sector directly employs more than 415,000 people in 2016. It further supports 6.2 million jobs and 55.8 billion US Dollars' worth of economic activity in Africa. This is roughly 1.8 percent of all employment and 2.6 percent of total GDP on the continent. A primary outcome of the sector's activities in the facilitation of tourism. Tourism on the

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continent supported an estimated 4.9 million jobs and 35.9 billion US dollars to GDP in 2018. The air travel sector is projected to grow at about 4.9 percent per year over the next 20 years. It is estimated that by 2036 the air transport sector will support 9.8 million jobs and 159 billion US dollars in GDP (ATAG, 2018; ICAO 2019). In order to fully examine the dynamics of the air transport sector an exposition of the key economic and regulatory contexts is essential. The following section offers the relevant insights relating to the continent of Africa.

State of Aviation in Africa

With 54 countries and an area of 30.2 million square kilometres, the African continent presents great distances between capitals, countries and commercial centres. Africa's population of 1.1 billion people represents more than 16.75 percent of the world's population. 16 out of 54 countries are landlocked, which is yet to be tapped fully by commercial aviation. As such air transport presents the necessary tool for the facilitation of trade and the movement of people. Every person directly employed in the sector and in tourism made possible by aviation supports an additional 14.8 jobs elsewhere. In order to improve the greater facilitation of efficiency and competitiveness of air connections is required. This state of affairs presents opportunities for growth because despite the prospects present, the continent contributes 2 to 4 percent of the global passenger air service market (Schlumberger, 2010; Heinz & O'Connell, 2013; Abate, 2014; Njoya, Christidis & Nikitas 2018; ATAG, 2018) and less than 1 percent of the cargo market (Button et al, 2015; Abate, 2013) which is not in line with the continent's overall economic potential.

Africa´s demand for air travel is projected to reach a 5.8 percent growth rate within the next twenty years signaling opportunities for investors, airlines and airport operators (IATA, 2018). While it is evident that the aviation industry has the potential impetus to fuel economic growth within the African continent, several impediments still exist that may undermine faster progress (Samunderu, 2019). Aviation is a catalyst for growth and development driving inbound investments in countries and creating employment opportunities. As passenger volumes continue to grow and airlines worldwide expand their fleets, airport infrastructure is fast becoming a growth bottleneck. Examined holistically air transport in Africa, just like the rest of the world is a major provider of employment opportunities, supports economic growth, is useful for connectivity and is a crucial enabler for facilitating tourism.

African airlines control less than twenty percent of the intra-African air transport market and the lack of intra-African air connectivity has been identified as one of the biggest challenges to air transport in Africa (Button et al 2015) and this has subsequently stifled rapid growth prospects (Sauderu, 2019). A possible reason for this is the existence before independence of air transport systems were based on colonial European commercial arrangements (Irandu, 1995; Steyn & Mhlanga, 2013) and safety and security concerns which are viewed as impediments to the growth of the air transport industry on the continent (Njoya et al 2018). Various initiatives have been proposed over the last sixty years to remedy the challenge of limited intra-African air connectivity. An outline of the journey of remedies to overcome the challenge of intra-African connectivity is elucidated.

Beginning in the United States of America (USA) in 1978 there was a move to expose air transport services to market forces of demand and supply and the free movement of labour and capital. However, it is instructive to note that in 1961 the first initiative to liberalize the air transport market had already taken hold in Africa through the Yaoundé Treaty which established the first jointly owned airline 'Air Afrique'. In 1988 the Yamoussoukro Declaration on market

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access for air transport in Africa was promulgated as a blueprint for the liberalization of air transport. It was viewed as a way to improve the competitiveness of national airlines; creating conditions for a higher degree of competition to flourish. This was viewed as preparation for the ripple-effects of economic deregulation in the USA, the movement towards an integrated European air transport market and the adoption of Open Skies policies elsewhere (Button et al, 2015)

The Yamoussoukro Decision (YD) was signed by forty out of fifty-four countries in 1999. It allowed the deregulation of air services and allowed for unrestricted frequencies between nations, improved safety standards and investment in civil aviation (Clark, 2014). YD provides for the full liberalization of intra-African air transport services in terms of market access, the free exercise of first, second, third, fourth and fifth freedom traffic rights to passenger and freight air services by eligible airlines. However, scholars agree that the progress of YD has been slow (Pirie, 2014, Njoya et al, 2018) as has been demonstrated by micro and macro level events such as the demise of thirty-seven airlines launched between 2002 and 2012 on the continent. This has further been supported by the twenty countries subsidising their flag carriers: the development of large airports irrespective of the demands of their services (Schlumberger & Weisskopf, 2014).

Significantly, a study by INTERVISTAS (2014) has shown that full implementation of YD 1999 through cross-border liberalization of only 12 African countries' airspace is envisioned to create at least 5 million new passengers, 1.3 billion US dollars in annual GDP and 155,000 new jobs, a 75 percent increase in direct services, fare savings of 25 to 35 percent (Rivers, 2016). Amankwah-Amoah (2018) and Doganis (2006) succinctly describe the situation as the protection of flag carriers that are viewed as engines of growth and national and African sovereignty serving as detriments to the entry of new airlines; a situation that harkens back to the conflicting interests of colonial powers.

Table 1 below summarises some of the benefits and impediments to the full acceptance and execution of YD. A summary of the benefits and impediments of YD is presented in Table 1 below.

Table 1 Benefits and Impediments of YD

Impediments	Benefits of Deregulation
Lack of political commitment and unification	New and expanded airlines including Starbow, Africa World Airlines (Ghana) JamboJet (Kenya)
Infrastructure, aircraft safety and security concerns	Increasing consolidation of the aviation market in the intra-African air transport market
Lack of effective enforcement mechanism	Accelerated new market entry

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Uneven geographical distribution of Intra-African air passenger traffic predominantly linking large and medium hubs in Ethiopia, Kenya, Morocco, and South Africa	Advancement of the Low-Cost Carrier (LCC) sector
YD not fully accepted in Africa – 11 countries including South Africa, Djibouti, Equitorial Guinea, Eritrea, Gabon, Madagascar, Mauritania, Morocco, Somalia and Swaziland did not ratify YD	Increasing private sector participation in the African air transport sector. Private carriers operating in domestic and regional markets
Collapse of numerous airlines including Air Afrique, Nigerian Airways, Ghana Airways, Cameroon Airlines attributed to liberalization and years mismanagement	Private participation in the airport sector including privatization of airports in Cote d' Ivoire, South Africa, Ghana, Nigeria and Botswana

Source: Amankwah-Amoah & Debra (2010); Bassens et al (2012); Otiso et al (2012); Schlumberger & Weisskopf (2014); Steyn & Mhlanga (2016); Amankwah-Amoah (2018); Njoya et al (2018)

Africa's failure to integrate and liberalize its intra-regional air transport market has been cited as a significant reason why growth in the air transport market has not reached its huge potential. Most countries rely on restrictive bilateral service agreements. This is a paramount reason why insufficient integration and lack of non-restrictive open skies policy present a major barrier to air transport growth in Africa. Open skies agreements not only enable better competition, it allows carriers of 2 or more countries to operate any route between the countries without interference in decisions about routes, capacity and pricing. The result is better service provision, affordable airfares an efficient service for the consumers.

As part of the remedy for African aviation, a new initiative was inaugurated on January 28th, 2018, with the African Union (AU) heads of state launch of the Single African Air Transport Market (SAATM). In support of SAATM, the African Continental Free Trade Area (AfCFTA) and the visa facilitation initiative form the three AU Agenda 2063 flagship initiatives. These initiatives form the foundation upon which aviation in Africa is to grow and provide larger than forecast economic growth. SAATM is aimed at creating a single, unified and transport market in Africa. Twenty-six countries representing eighty percent of the existing aviation market in African have subscribed to the initiative. The goal of SAATM is to strengthen safety and security oversight on the continent and promote a climate of cooperation among African countries through partnerships, mergers and acquisitions (SAATM handbook, 2018). The primary assumption of the initiative is that improved brands will compete favourably with stronger states or blocks of states from outside the continent. And an added benefit of full implementation of SAATM is the guarantee of a larger market for African carriers and improved access to capital.

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A review of the literature reveals that the air transport sector in Africa has received deficient scholarly attention. The subject of YD continues to be the dominant topic of discussion with limited effort places in analysing the outcomes of its implementation through a theoretical framework. Such an approach would involve the deployment of among others economic development, welfare and business theories. What is lacking is a holistic theoretical framework that would provide a scientific basis upon which to review the sector. In as much as Africa is large, heterogeneous, and dynamic, the air transport industry remains a business whether privately or state managed. That makes the industry ripe for a fresh theoretical analysis.

Research Problem

Various attempts have been made to examine the air transport industry in Africa. Heinz and O'Connell (2013) examined existing airline business models in Africa using the Product and Organizational Architecture (POA) framework. Their findings suggest that Low-Cost Carriers (LCC) models produced mixed results and that Full-Service Network Carriers (FSNC) and Regional Carriers (RC) were the most prominent and stable in Africa. The study objective was to determine the most financially suitable business models for African aviation. However, the authors acknowledged the need for government support in the form of stringent regulation and financial support. Steyn and Mhlanga (2016) analysed the impact of air transport agreements on the success of airlines in Southern Africa. The study was instructive in providing reasons for the slow pace of implementation for YD. This finding was supported by Button et al (2015) who also examined the impact of European colonialism on African air networks following independence. They found that colonial legacy countries have a greater levels of intra-group trade when compared to non-intra-group trade countries in Africa. This finding was supported by evidence of distinctly larger coefficients for former French colonies compared to former British colonies; a finding supported by Njoya et al (2018). Similarly, Steyn and Mhlanga (2016) and Button et al (2015) found no indication that the liberalization of African skies as envisioned by YD was successful. These concerns are shared by other notable authors namely Schlumberger (2010).

Amankwah-Amoah (2018) applies dynamic capabilities (Teece, Pisano & Shuen, 1997) and institutional based theory to explain the competitiveness of airlines in Africa. The findings indicate that intra-African routes are dominated by international airlines. The study identifies limited economies of scale and quality of service as the main variables limiting variables to the international competitiveness of airlines in Africa. The study supports the implementation of YD. It also suggests strategic renewal of African airlines to enhance their competitiveness. At a more micro level Abate (2013) argues that the understanding of the welfare effects of liberalization of the air transport market in Africa is rudimentary. Using supply side variables namely air fare and service quality and departure frequency, the study found a 40 percent increase in departure frequency in routes that were liberalized. However, there was no evidence for the argument that liberalization of air transport fully or partially resulted in reduced fares. Neither is their support for the strategic lenses proposed. In fact, the study recommends a policy of liberalization of restrictive service frequency provisions.

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Njoya et al (2018) asserts that YD has failed and finds no single factor as significantly attributable to that state of affairs. A notable recommendation of the study is the need for regional groupings, the relaxation of visa requirements and the introduction of a common single transit visa at regional level. It is argued that these would boost the tourism industry, regional travel and promote the development of more regional airlines. The study posits that the demand for air transport in Africa is not sufficiently strong to support the 70 airlines operating on the continent. YD has not yet lived up to its stated objectives due to fragmentation of the air transport market, dependency on former colonial powers and retention of precolonial commercial networks, institutional weaknesses and the lack of cooperation among states. Budd et al (2014) found that of the more than 40 market entrants in European skies since 1992 only about a quarter still operate. Which lends credibility to the claim that the African context is not entirely unique.

A preliminary review of the literature reveals limited depth in studies directed towards the enhancement of the knowledge of air transport in Africa. At the same time there remains a knowledge gap between industry structure and performance in this dynamic industry. A common thread in the dominance of studies related to the review of the success or failure of YD and the application of theoretical lenses including microeconomic welfare effects, dynamic capabilities model and the product and organizational organisation architecture model. As a result, there are varied approaches, differing objectives and mixed findings which does not support the development of scientific inquiry. In summary there exists a smorgasbord of literature and findings on the challenges and opportunities in the sector. What seems to be missing is a unifying concept and approach to dissecting the African air transport sector. Such an approach would both widen and deepen the knowledge of this under researched field of study. While some major factors relating to the development of air transport on the continent are proposed and supported by other studies, there remains a gap in knowledge from a strategy theory perspective. The Structure Conduct Performance (SCP) theory offers a robust mechanism for describing and predicting the occurrence of poor or non-welfare maximising market performance through the description and prediction of oligopolies and monopoly's structure Thus, the SCP is widely adopted to evaluate competitive industries by investigating the structure of industry relates to firm behaviour (conduct) and performance. Such a situation pervades in Africa due to the existence of mainly national carriers and other non-state and state supported international airlines. As such the broad research question is – what role can the SCP framework play in the examination of the challenges and opportunities for air transport in Africa?

Inadequate effort has been expended in a holistic examination of the African aviation sector. In other words, moving the present level of debate from tactical and operational discussions to wider, longer term perspectives that focuses on the future. This is especially important for how African airlines can leverage their capabilities to become world leaders in air transport. Past studies do not take into consideration key and imminent changes to the air transport industry on the continent of Africa and the world in general. It appears that there is a gap in the lack of a continent-wide study based on a single theoretical foundation in the industry. Consequently, this study is examining the opportunities and challenges to air transport growth in Africa.

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Therefore, the research objective can be outlined as:

i.) To assess the challenges and opportunities for African aviation

ii.) To assess the role of SCP framework in the airline industry in Africa

iii.) To propose a conceptual model for the examination of the airline industry in Africa.

With this approach the study seeks to provide new insights into the role of strategy in the development of aviation in Africa. A theoretical validation will support the conceptual development of a model to this end. At a policy level this study will provide a foundation of knowledge for decision making at national and regional level to support the growth of the industry and national economies.

Theoretical Framework

In order that a theoretical framework proposed for this study is sound, several key elements are covered. The theory must be relevant to the research problem, namely the evaluation of strategy conception in a dynamic environment such as air transport, business or tourism which this current study covers. Secondly the theory chosen must be theoretically well founded. Third, it must be measurable. Stuckey (2008) posits that the integrated assessment of variables for strategy conceptualization is the main advantage of SCP.

Teece (1997) criticizes the five forces model proposed by Porter (1980) in dynamic environments such as network-based business-like airlines and shipping because it downplays feedback of firm strategies on industry structure. On the other hand, the competitiveness diamond (Porter, 1998) explores the role of industry in the competitiveness of territories. However, the framework is not explicit about performance objectives of the industry or the recognition of dynamic forces that can alter the competitive environment. It also tends to overlook comparisons among competing industries elsewhere. The current study examines the structure conduct performance (SCP) paradigm as it applies to industrial organisations. The SCP theory is a mechanism for describing and predicting the occurrence of poor or non-welfare maximising market performance through the description and prediction of oligopolies and monopolies.

Mainstream industrial organization has been founded on the structure-conduct-performance paradigm (SCP). The Industrial Organisation paradigm has its antecedents in the Structure, Conduct, Performance model (SCP) developed by Robinson (1933), Mason (1939), Bain (1956) and Chamberlin (1965). The SCP model attempts to explain why, once outside the neoclassical assumption of perfect competition, firms can earn persistent profits that is above the break-even point. Structure Conduct Performance (SCP) Theory provides the building blocks upon which strategy formulation was constructed (Porter, 1981) the basic tenet of SCP is that the economic performance of an industry, which is described as the conduct of buyers and sellers, is a function of the collective performance of firms in the marketplace. Conduct is described as the activities of the industry buyers and sellers. Industry structure refers to the determinant of conduct. The essential link between industry structure and performance in the SCP framework is

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derived from the microeconomic model of perfectly competitive markets (McGee, 1988). As SCP is a static model competition is viewed in terms of an equilibrium condition. Specifically, that in the long run perfectly competitive markets will result in the optimal welfare maximising allocation of resources in an economy (Samuelson, 1965). Uzunidis (2016) posits that SCP imagines a simplified version that in an identical market structure, the firms in two different sectors should have identical performance.

Bain (1956) expresses interest in industry as a group of competing firms and not in the firm alone as such entry barriers include economies of scale, absolute cost advantages, product differentiation, and capital requirements. This is because without entry barriers monopoly profits cannot exist in the long run. Because of this condition structure determines potential performance. The SCP paradigm implies that the structural characteristics of an industry, especially the level of concentration of firms and the height of entry barriers have a significant influence on the ability if firms within an industry to price above the competitive rate. Consequently, these structural characteristics can be expected to determine the performance potential of firms.

SCP is not without limitations. The assumption that all firms within an industry are homogeneous (Porter, 1981; Rumelt, 1991) has been criticized because the wrong level of analysis is problematic and will not lead to useful predictions or prescriptions of individual firm performance (McWilliams & Smart, 1993). Second, most business environments are not in a state of equilibrium. Static analysis of the relationship between structure and performance implies both the existence of optimal conditions and that these optimal conditions can be sustained over time (McGee, 1988; Grant 1995) which is not accurate because most business environments are not in a state of equilibrium (McWilliams & Smart, 1993). Luo (2014) argues that SCP lacks a focus on the dynamic nature of markets and changing environments and argues that the resource-based view focuses on internal resources. Understanding and predicting the outcome of a process requires a dynamic analysis. Third, is the reliance on entry barriers. Investments in entry barriers cannot be expected to result in competitive advantage because barriers are subject to a free rider problem (Oster, 1990) which eliminates any incentive for an individual firm to erect entry barriers.

There are alternatives to SCP namely the efficiency paradigm proposed by Singleton (1986) which views competition as a process that generates efficient industry performance. The focus on industry structure and especially entry and mobility barriers may result in research that utilises the wrong level of analysis, inappropriate data, and inconsistent methods (Porter, 1981; Barney & Hoskisson, 1990). SCP suggest that the structure is of overriding importance to competitive advantage. As such research may focus on structural characteristics to the detriment of other variables such as firm resources, core competencies and decision-making processes. In addition, the reliance on cross sectional data and methods derived from the static SCP model may limit testing of theories of sustained competitive advantage. Finally, viewing competition as a process is key. A competitive process can result in a range of market structures, some highly concentrated and some very unconcentrated (Singleton, 1986; Demsetz, 1982).

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Stigler (1983) explains that optimal firm size and thus the number of firms in an industry is determined by demand and cost conditions. As such opportunities for competitive advantage are available across all market structures (Rumelt, 1991). A view from contestable market theory suggests that firms in highly concentrated industries such as airlines may not be able to achieve above average returns (Baumol, Panzar and Willig, 1982). De Figueiredo Junior, Meuwissen and Lansink (2014) propose an advancement of knowledge on SCP based on the effect of significant events such as technological innovations or social behaviour changes which create shocks. Such events are viewed as dynamic elements and provide feedback to the core elements of structure, conduct and performance. De Figueiredo et at (2014) argue that SCP is compatible with the Resource based View (RBV) (Wernefelt, 1984; Peteraf, 1993; Peteraf & Barney 2003) in attributing a firm's advantage to its conduct in acquiring and exploring valuable resources under an industry structure (Barney, 2001).

Penrose (1959) theory of the firm posits that the expansion of firms is largely based on opportunities to use their existing productive resources more efficiently than they are currently being used. To answer questions about price determination and resource allocation the theory assumes that firms are made up of bundles of productive resources, and that different firms possess different bundles of these resources. While the theory has remained valid it has been criticized for its conceptual focus which prevents the development of a richer, more complex, contingency-based model of firm growth. Furthermore, the theory does not consider the professionalization of management, evolution of technology, and other institutions that influence firms' growth. This points to challenges in its testability and hence generalizability (Nair, Trendowski, & Judge 2008).

On the other hand, the Resource Based View School's view of the firm provides several important explanations of persistent firm performance differences (Wernerfelt, 1984; Barney and Clark, 2007). The resource-based view (RBV) rationale emphasizes value maximization of a firm through pooling and utilizing valuable resources. That is, firms are viewed as attempting to find optimal resource boundary through, which the value of their resources is better realized than through other resource combinations (Das & Teng, 2000). The dynamic capabilities framework was developed by Teece et al. in 1997 in order to present a Schumpeterian oriented approach of addressing the often-discussed question on how companies can achieve sustainable competitive advantage. The framework was developed from the theoretical background in the field of strategic management. Hence, aspects of models like competitive forces, strategic conflict or the resource-based perspective were taken into account (Samunderu, 2019).

Constituent theories include the Dynamic Capability (DC) based view of the firm proposed by among others Teece, et al., 1997; Ambrosini & Bowman, 2009 and the Competence Based View (CBV) of the firm propounded by Hamel and Heene, 1994; Prahalad and Hamel, 1990. Barney and Clark (2007) are among the scholars who argue that RBV theories share the same underlying theoretical structure and differ only in their slightly different was of characterizing firm attributes. Thus, RBV is not about resources but it is about the attributes that resources must possess if they are to be a source of sustained competitive advantage. Core competence can be summarized as what a company does

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best. However, literature on CBV construct is full of overlaps and related concepts that are sometimes used interchangeably (Enginoglu & Arikan 2016).

In contrast organizational ambidexterity (Duncan, 1976) elucidate the ability of an organization to shift its own structures to initiate and execute innovation in order to explore and exploit. That is, to compete in mature technologies and markets where efficiency, control, and incremental improvement are prized and to also compete in new technologies and markets where flexibility, autonomy, and experimentation are needed (O'Reilly & Tushman, 2013). Since then, research has found several ways of approaching ambidexterity within the field of management science, but they all overlap in the idea of solving the paradox of being successful in today's business world, while concurrently being able to adjust to changes in the business environment in order to ensure the long-term survival of the firm (cf. Duncan, 1976; Gibson & Birkinshaw, 2004; Tushman & O'Reilly, 1996).

Different approaches to strategy view sources of wealth creation and the essence of the strategic problem faced by firms differently. The resource-based perspective focuses on strategies for exploiting firm-specific assets and also invites consideration of managerial strategies for developing new capabilities (Wernerfelt, 1984; Luo, 2000). The review of the literature leaves gap which needs exploring; specifically, the theoretical rationale for the strategic development of industry organisations that shape the survival and success of certain industries or industrial sectors. By its very premise, this study examines the aviation sector in Africa.

Under the circumstances of the current study the categories and indicators are not expected to be exhaustive or final but to cover the main aspects of the problem and evolve as new knowledge is incorporated. Should real conditions be taken into account by the SCP framework the theory has the advantage of leading the researcher to an overall vision of the problem as well as possible solutions which is an important advantage at the operational level. Uzunidis and Laperche (2011) support the deployment of SCP due to its applicability to economic reality and in providing a tool to study the dialectic relationship between the impact of public policy and the corporate strategic choices from the macro to the micro economic level.

Conceptual Model

Efforts by De Figueiredo Junior et al (2014); Lou, (2014); Uzunidis, (2016) suggest conceptual models that offer a way to operationalize SCP. It is notable that the fundamental external elements used to analyse the functioning of a market are centred on the PESTEL political, economic, sociocultural, technological, ecological and legal considerations, social and economic environment and structure, conduct and performance.

Structure is found in the characteristics of market organisation which influence the nature of competition and the formation of prices inside the market. This is driven by the number and commercial size of the economic agents, creditors and barriers. In addition, the market demand behavior, concentration of clients and suppliers; rivalry

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intensity, entry barriers also apply here. There are also elements of substitute products, and natural, institutional environment and infrastructure. All these factors are readily found in the air transport industry in Africa.

Conduct of the market is exhibited by the models of behaviour applied by firms in order to adapt to the market. These include fixing prices, commercial strategies, and strategies of exclusion or participation. It could be surmised that conduct relates to how firms behave towards each other. Some key components of this are competition, process. Product or market, pricing, promotion, distribution channels, production technologies, sourcing, organisation; vertical, network and horizontal linkages, agglomeration, and the quality of supporting services. In the last decades, the airline industry has been persistently less profitable and more financially vulnerable especially so in Africa.

Performance is the economic result of the structure and its conduct. It is concerned with the efficiency of the market at critical levels among them occupation, economic wellbeing, availability of food, level of supply prices among others; and the level of distribution of profits in society (Uzunidis, 2016; Luo, 2014). In this case some airline economic performance metrics including revenue per available seat kilometres (RASK), available freight tonne kilometres (AFTK), revenue passenger seat kilometre (RPSK), and market share are proposed. Operations = Revenue (RASK, RPSK), passenger load factors, market share, fleet size, Cost, Exogenous factors such as global oil spikes, financial crisis, global health emergencies i.e. SARS, COVID 19, 9/11 events. Others include Development such as local value added, local employment which relates to the African landscape's unique character.
Of crucial importance are shocks which are proposed as an advancement of knowledge of SCP. Shocks are significant events such as technological innovations or social behavior changes which create disruption. Such events are viewed as dynamic elements and provide feedback to the core elements of structure, conduct and performance. Further, De Figueiredo et at (2014) argue that SCP is compatible with the Resource based View (RBV) in attributing a firm's advantage to its conduct in acquiring and exploring valuable resources under an industry structure (Barney, 2001). It is notable that even with these descriptions there does not exist a single one component of the SCP that is the cause of the performance. That is both conduct and market performance can affect each other.

The conceptual schema presented below outlines the variables that could help strategists acknowledge and use factors that have otherwise been neglected by previous studies in the analysis of the air transport sector in Africa. It is conceivable that the model could be extended to the dynamics of the air transport sector in Africa. However, some caution is advised especially in the case where regulatory regimes are agreed at a global level for example SAATM, whereas at the local and regional level the same structural indicators could be applied quite differently as has been witnessed with the progress in YD at the regional economic communities' levels in West Africa.

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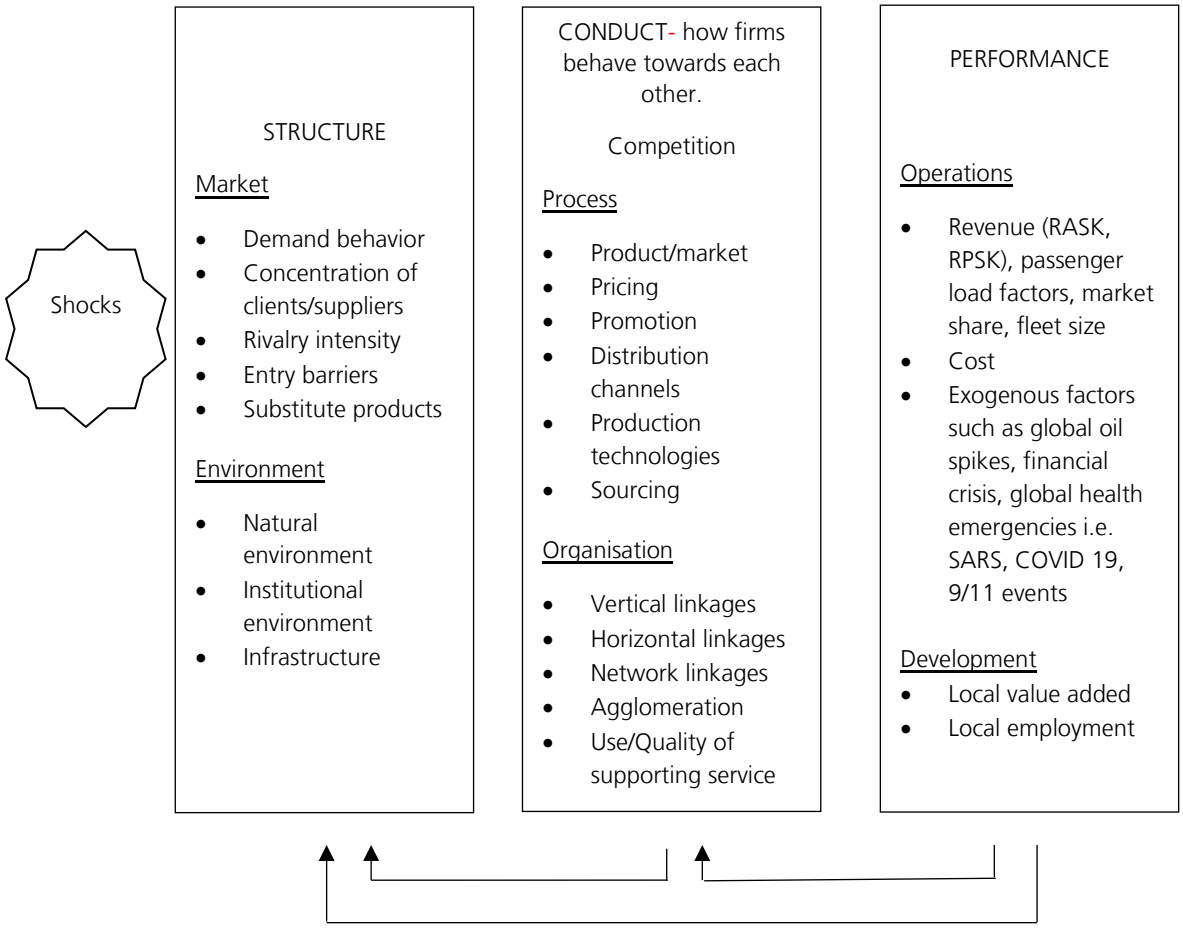
Figure 1 : The Dynamic SCP Framework



Source: De Figueiredo Junior et al (2014); Lou, (2014); Uzunidis, (2016)

Study Design

In the social sciences the case study is applied extensively. The case study approach is generally used to generate an in-depth comprehension of a complex issue in real-life. It is an established research design that is used extensively in a wide variety of disciplines, particularly in the social sciences. A method is not the end in itself but a means for gathering data. A case study method assists in connecting the setting for research with the prior theory. The unique nature of the research object is a part of the setting for research, and thereby the objective is not to find universal rules but to deeply understand the case or the cases in their own unique environment (la, Durepos & Wiebe, 2009). In regard to the present study the researchers chose to the case study methodology to partly answer the research question.

Data Analysis

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International arrival and departure data from the four countries related to this study was obtained with assistance from the Airports Council International (ACI) economics database for the years 1991 to 2018. The first stage was data cleaning, followed by consolidation and prediction using MS Excel.

The data set was for the previous twenty years and it was exposed to linear extrapolation to determine the expected future growth. Trend lines were included, and standard regression modelling revealed the R2 value for international and total air passengers per country. Such a data analysis is relatively simple and reliable, and the authors opine that this offers some insight to the progress of the key nations in the aviation sector in Africa for the foreseeable future. To support the data analysis and to give context to the data set a review of extant research provided much needed context and explanation. These two components combined to offer a case-by-case summary of the reviewed countries' air transport industry opportunities and threats.

Case of South Africa

Travel and tourism contribute significantly to the South African economy (Matshediso, 2014). Just like other parts of the continent the share of the country's intra-African air traffic is about 80 percent and is controlled by non-African airlines (Smyth & Pearce, 2015). This situation is attributable to the lack of viability and economic challenges faced by local airlines and the strategic failure to identify critical success factors to help airlines manoeuvre out of these challenges (Kamath & Tornquist, 2004). In order to remedy the situation Steyn and Mhlanga (2016) examined bilateral air service agreements (BASA) between South Africa under the context of liberalization. Liberalization involves free entry and exit, with the freedom to set fares and select the routes to fly. Liberalization is envisioned to act as a catalyst to the promotion of competition among airline carriers and by doing so improve the quality of services to customers (Uzodima, 2012).

Liberalization in South Africa encouraged new airlines to enter the market. However, few of them survived due to deficient management (Campbell, 2014), route restrictions, slot restrictions, and competition with the national carrier. Over time the national carrier has accumulated huge debts due to inefficient management and has had to be bailed out repeatedly (Steyn & Mhlanga, 2016; Adegoke, 2019). South Africa is not a signatory to YD and some scholars among them Schlumberger (2010) contend that apart from the benefits to airlines and passengers, being a signatory would have made a significant contribution to the national economies of Southern Africa. It is notable that instead the nation pursued a bilateralism approach with other countries namely Kenya, Tanzania, and Botswana (Ndlovu & Ricover, 2009) with some level of success. In spite of these developments the current study opines that the development of air transport in South Africa is expected to grow. The chart below shows the progression of international and domestic passengers in the period 1996 to 2030.

Figure 2: South Africa Air Traffic 1996 – 2030

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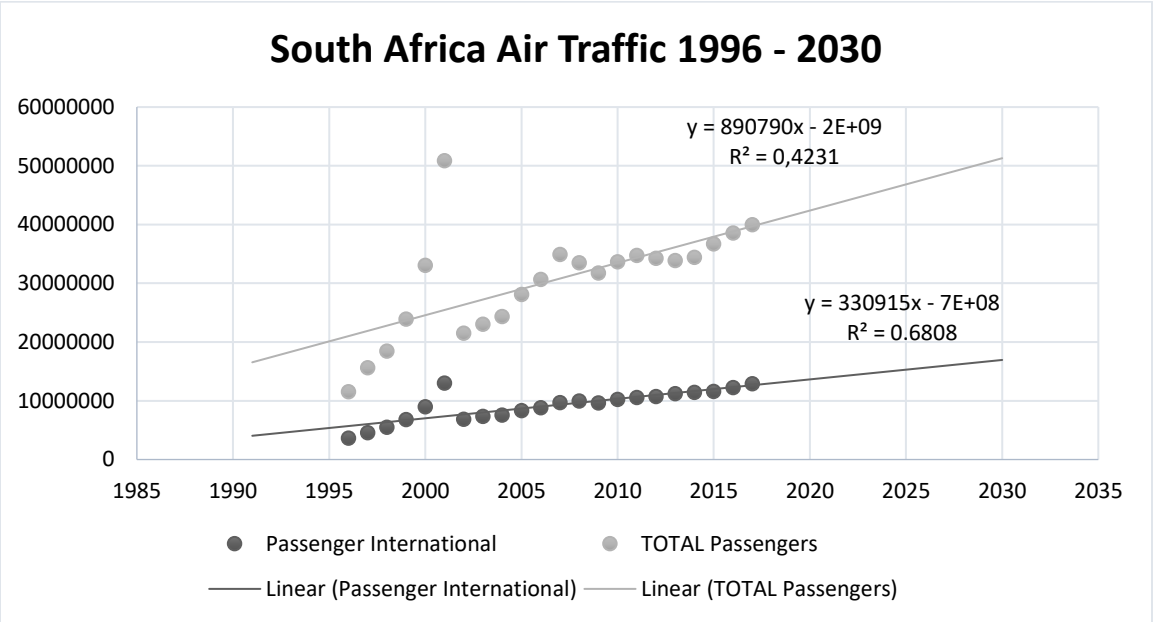

According to this model the total number of air passengers in South Africa is expected to reach 50 million in the year 2030. The regression line for international passengers from 1996 to 2030 shows that it can explain 68.08 percent of the variation within the regression's fitted line which is a significant finding. As such the model indicates that a fair level of certainty of the growth of international passengers leaving and entering South Africa. On the other hand, the regression line for total passengers explains a 42.31 percent of the variance. Meaning that there could be other factors that would explain or hinder the growth of the air transport market in the nation. Steyn and Mhlanga (2016) conclude that government control of implementation processes and continued protection and support for national airlines means that private airlines will struggle to survive.

Case of Kenya

Kenya is a long-haul tourism destination and air transport is key for tourism, contribution to GDP and employment (Lucy, 2014). Tourism in particular has suffered the negative effects of insecurity that have seen dips and troughs over the last twenty years. In addition, the national carrier is plagued with challenges most notable of which include lack of capital, limited flight frequencies, low application of information technology, management instability and aggressive competition from Europe and the Middle East.

The country was a signatory of YD and embarked on the liberalization of air transport since the 1990. As such key developments include the privatisation of the national carrier in 1996 and the signing of more than 57 BASAs by 2017 (Eric, Semeyutin & Hubbard, 2020; ICAO, 2017).

Figure 3 Kenya Air Traffic 1996 – 2030

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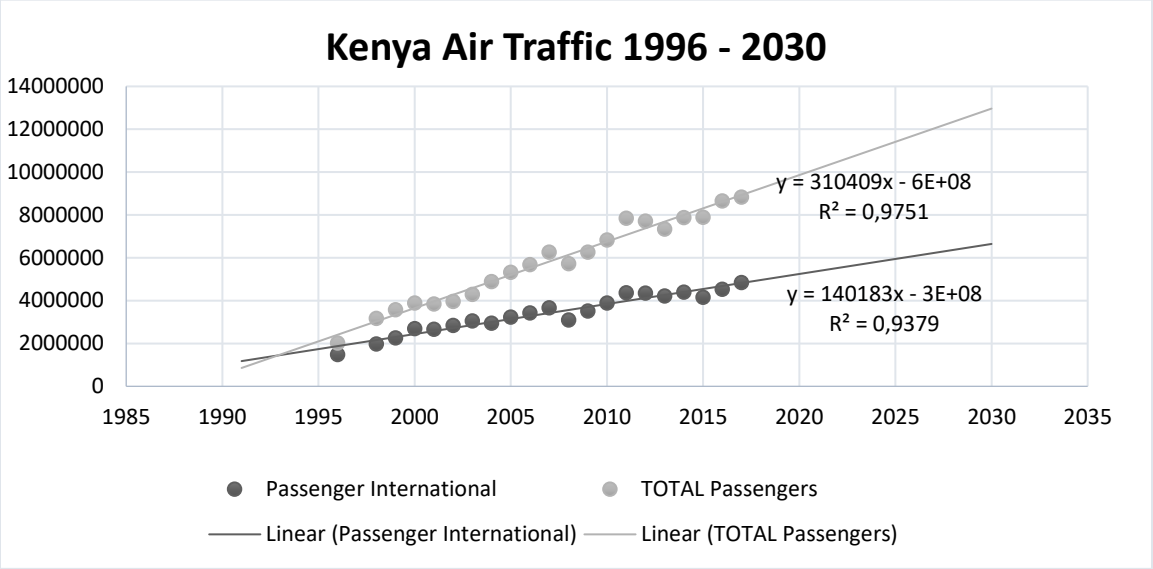

According to this model the total number of air passengers in Kenya is expected to reach 12 million in the year 2030. The regression line for international passengers from 1996 to 2030 shows that it can explain 93.79 percent of the variation within the regression's fitted line which is a significant finding. As such the model indicates that a good level of certainty of the growth of international passengers leaving and entering the country. On the other hand, the regression line for total passengers explains 97.51 percent of the variance. Meaning that the model is a good estimate of the growth of the air transport market in the nation. It is envisioned that the regulatory framework for air transport will remain a key pillar in the enhancement of the benefits of the air transport sector in the country.

Case of Ethiopia

Ethiopia has grown a successful national carrier over the years. Success has emerged from a large intra Africa network, a strong hub with multiple-wave permutations for onward connecting traffic, and by forging deep strategic partnerships with regional based African carriers (Meichsner, O'Connell & Warnock-Smith, 2018). The chart below shows the progression of air transport growth for the country up to the year 2030.

According to this model the total number of air passengers in Ethiopia is expected to reach 15 million in the year 2030. The regression line for international passengers from 1991 to 2030 shows that it can explain 88.91 percent of the variation within the regression's fitted line which is a significant finding. As such the model indicates that a fair level of certainty of the growth of international passengers leaving and entering Ethiopia. On the other hand, the regression line for total passengers explains an 85.71 percent of the variance. Meaning that there could be other factors that would explain or hinder the growth of the air transport market in the nation. This data does not cover transit passengers. The success of the national carrier in Ethiopia could be attributed to several factors. First, and understanding of the operating environment. Second, having the right business model and finally executing the right strategy.

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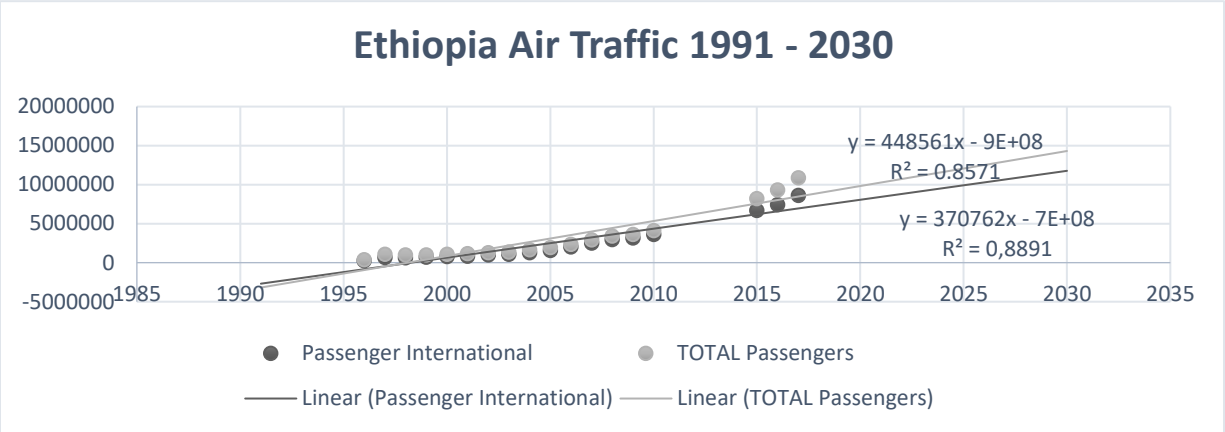
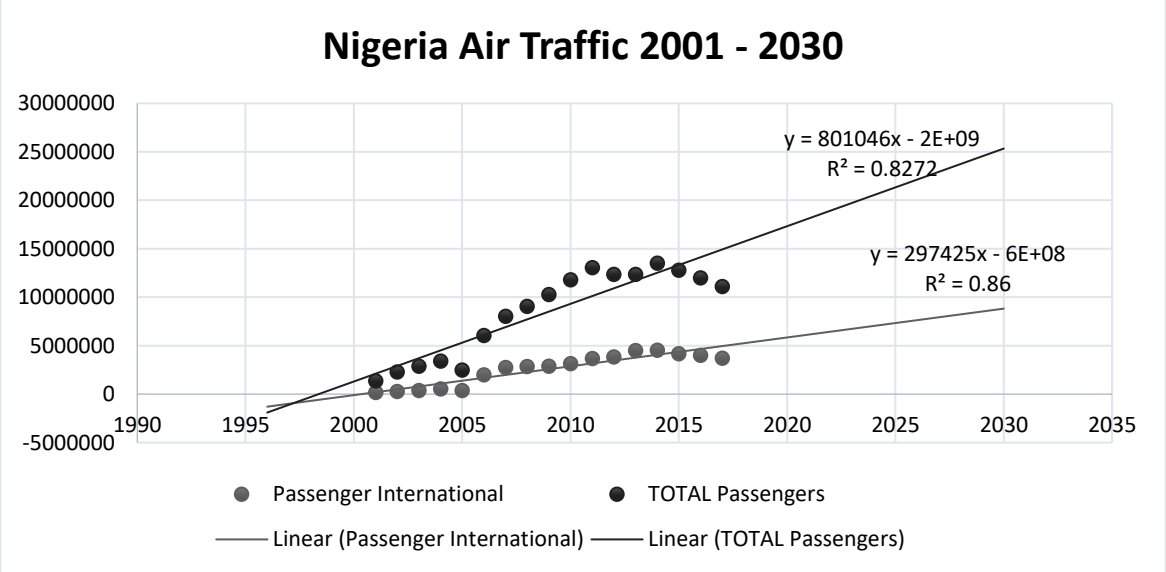
Figure 4 Ethiopia Air Traffic 1991 - 2030



Case of Nigeria

Ismaila, Warnock-Smith and Hubbard (2014) opine that deregulation of the air transport sector in Nigeria to the level of open skies would stimulate traffic growth by at least 65 percent. Other studies by Daramola and Jaja (2011) found on the domestic air connectivity in the country suggest that the deregulation would have significant positive impacts.

Figure 2 Nigeria Air Traffic 2001 – 2030



This model suggests that the total number of air passengers in Nigeria is expected to reach 25 million in the year 2030. The regression line for international passengers from 1996 to 2030 shows that it can explain 86 percent of

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the variation within the regression's fitted line which is a significant finding. As such the model indicates that a fair level of certainty of the growth of international passengers leaving and entering Nigeria. On the other hand, the regression line for total passengers explains an 82.72 percent of the variance. Meaning that there could be other factors that would explain or hinder the growth of the air transport market in the nation.

Summary

The data analysis has exposed the possibility of a significant upside in the development of the aviation industry in Africa ceteris paribus. In all the countries analysed it appears that the development of the industry is supported by strong tourism and travel demand by international tourists, and the various individual country as well as continent-wide measures towards liberalization of the African airspace. These initiatives and manoeuvres have borne fruit and have shown that Intra-Africa travel can be enhanced by a strong collaboration between airlines and states. Some strong opportunities have arisen from the enhancement of deep ties between national champions like Ethiopian Airlines and regional carriers in West Africa. Indicating that cross border and cross airline partnerships are a key ingredient for airlines to make a significant contribution to the economies in Africa.

The threats include limited actions on the ground as relates to the full liberalization of the African air space. In addition, the challenges of deficient management, large debts plague both South Africa and Kenya's largest airlines. Other threats include route restrictions, slot restrictions, and competition with the national carrier. In a significant number of instances, the lack of an active and holistic political support for liberalisation remains the single largest threat to the development of the industry on the continent.

tory to YD and some scholars among them Schlumberger (2010) contend that apart from the benefits to airlines and passengers, being a signatory would have made a significant contribution to the national economies of Southern Africa.

In general, there is scant academic effort expended in investigating the air transport sector in Sub-Saharan Africa. In addition, the extant literature suggests that the subject of YD continues to dominate debate, with effort expended usefully in examining the reasons for its successes and failures. The current study has examined and argued for the theoretical grounding offered by the SCP and found that there are gaps in the study of air transport in Africa that require further examination. Notably that the conduct and performance aspects of African aviation offer a wide and deep pool for further examination. The study has also found that the growth of the aviation sector on the continent, going by the exposed developments in South Africa, Kenya, Ethiopia and Nigeria, is a promising one. And one that requires further and deeper analysis. This study offers a versatile platform from which the extension of aviation policy in a turbulent world and more so in Africa can be made.

Limitations of the Study

The research question of this study is directed towards the possible application of the SCP framework in the African aviation sector. In general, the SCP paradigm is recommended when analysing the characteristics of market structure,

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firms' conduct and performances, allowing for the utilisation of a wide range of variables. In the same manner the paradigm provides a useful framework which includes the domains of activity and the markets as basis for analyses. Thus, SCP paradigm has multiple purposes as a tool for analysis and is especially valuable in examining economic challenges in a general manner. Its strength resides in the fact that it is a method appropriate to provide a perspective of the market as against that based only on one sector.

The outcome of this study shows that the research question offers potential for further academic inquiry. The study objectives included the need to assess the challenges and opportunities of the aviation sector in Africa. Second was to propose an alternative strategic approach based on the industry structure conduct and performance and to propose a theoretical frame with which to accomplish that objective. Third the study aimed to elucidate a conceptual model for the examination of the aviation sector in the continent. The first objective was partly accomplished via case studies of four major aviation economies on the continent. The second objective was somewhat accomplished by the proposed SCP framework. With continuing scholarly efforts, the opportunities to further explore this objective exist. The third objective was accomplished by proposing a conceptual schema based on extant research on SCP theory.

Data availability was a challenge especially for the depth of variety related to SCP and the specific indicators per category in the conceptual model. Due to time and cost constraints the main data source included air traveller data over a period of twenty-five or more years obtained from a single source. Even though the data was from an authoritative source, data triangulation was not conducted. In addition, the results of this study could be considered exploratory as they did not include other components such as airline profit and cost data under the component of economic performance. While the environmental concerns have been highlighted; specifically, the institutional environment relating to YD, there are still some significant data points that are required such as process, organisational and developmental variables that the SCP model suggests. Finally, it is apparent that the passenger data does not cover the same time dimension for every country observed. As such the findings may present skewed findings. Despite that limitation the authors opine that the data covers a sufficiently long duration of time to support the findings of the study.

As at the time of writing of this article the WHO was first alerted to a cluster of pneumonia of unknown aetiology in Wuhan, People's Republic of China on 31 December 2019.The virus was initially tentatively named 2019 novel coronavirus (2019-nCoV). Coronavirus and the resultant COVID 19 disease became a public health concern of international concern.

Most notably it had resulted in 1,131,713 confirmed cases and 59, 884 deaths as of 4th April 2020: 35,701,674 confirmed cases and 1.045.953 deaths by October 5th, 2020 w (Johns Hopkins University & Medicine, 2020). An outcome of the spread of the virus has been the closure of borders between countries and the restriction of movement within many countries in the world. That has led to the significant decline the tourism and travel industry.

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All the African countries highlighted in this study had reported confirmed cases. As the disease is communicable person many of the countries affected have taken drastic measures to control the movement of people across borders including the suspension of all international air travel. This has resulted in the grounding of passenger airline operations which has precipitated a global decline in tourism activity and economic slowdown all across the world. The global spread of COVID 19 threatens to change the dynamics of an industry that is already highly prone to external shocks. For Africa the ensuing reduction in tourism and travel, and lower passenger density in the intra-Africa routes portend a decline in aviation activity. This situation, should it escalate could possibly lead to bankruptcies for fragile air carriers in Africa.

Conclusion

A preliminary review of the literature reveals that relatively little effort has been made in examining the air transport sector in Africa as a whole. This especially in view of its significance as an industrial organisation subject to the principles of business and strategy. This study has made a significant step in beginning that journey. The dearth of information and data mean that the study objectives require further access to data and deeper analysis. Future studies could define specific social and environmental conduct and performance categories and investigate interactions among then as well as their cross-over effects.

In particular, the SCP framework has been criticized many times and even changed without being called completely into question. This makes it a robust theoretical framework with which to examine the air transport industry in Africa. Future research could extend the present one by analysing a different set of data. As an example, a multi-airline, multi-country case study for competing airlines or nations would represent suitable case studies for comparison under the SCP framework presented in this paper.

An important conclusion from this paper is that disruptive global events or shocks can present overwhelming sets of challenges such as global travel restrictions, border closures which may result in the economic disruption to the highly fragile air travel industry. Those challenges and the ensuing outcomes may not be completely envisioned by the theoretical model presented in this work and the authors suggest that those emerging challenges would in fact require new strategic lens. Practically the current COVID 19 Pandemic has been unexpectedly rapid in its global expansion; add to this the vastly unknown character of recovery for the human population as well as the unknown time to recovery and normalization. Other studies could explore the impact of such global pandemics on the strategies for the development of air transport in Africa.

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The Role of Social Entrepreneurship in Achieving Sustainable Rural Development

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Abstract

Rural Social Entrepreneurship (RSE) is considered an essential factor for achieving Sustainable Rural Development (SRD) and improving rural people's socio-economic status through increasing production, productivity, reducing unemployment, and accelerating the progress in achieving SDGs. The paper aims at examining the role of social entrepreneurship in achieving (SRD) in Sudan with reference to Wad Balal Project for investment and rural development in Gezira State, which established in 2005 in small villages in Gezira State through mobilizing of local savings and resources for creating job opportunities, sponsoring poor households, improving the infrastructures, and reducing poverty. The study depends on cross-sectional data collected through a questionnaire and focus group discussion from 100 head of households in the village under research. A questionnaire is internally consistent, and its questions are stable. Frequencies and percentages have been used for describing the basic characteristics of the respondents. Statistical t-test was adopted to test the opinions of respondents about the role of the project based on the Likert scale. The results revealed that the project has significantly increased the opportunities of job and training as well as household income, the results also confirmed that the project has improved the status of education and health services in the village. The project has extended and established many branches; the project also diversified its investment to cover more kinds of investments, the project reinvested 50% of its profits and directed the rest to charity, and social services in the village, many lessons can be learned from the project story. The research recommended that a similar social entrepreneurship project can be generalized to more villages in Sudan and other developing countries to accelerate sustainable rural development. Local communities have to support similar initiatives for developing their villages.

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1. Introduction

Rural entrepreneurship played an important role in reducing poverty, migration, and expanding employment opportunities in rural communities (Ansari, 2013). Rural entrepreneurship development is considered a vital means to achieve sustainable rural development. Recently, entrepreneurship has become an essential strategy in development or an evolutionary process for achieving positive economic and social impacts (Ansari, 2013). Rural entrepreneurship defined as a major force of economic development in villages and the creation of positive change, innovation, and production services; rural entrepreneurship is a major activity that attempts to resolve many challenges such as unemployment, poverty, and lack of economic diversity in rural areas and has positive impacts on other aspects of villagers' human life (Ansari, 2013). Rural Social Entrepreneurship (RSE) is one of the foundations of rural socio-economic development (Ahrari et al., 2018). Experts in the agricultural sector call social farming RSE. Social entrepreneurship has become an essential driver in the developing economy, and it attempts to create new opportunities through its impact on social integration, economic sustainability, and fair society. Social farming and social farms are successfully responding to the challenges of social exclusion and lack of social services provision with other opportunities in the villages through alternative therapeutic activities, sheltered working places, or integrative educational activities in a farm environment) Hudcová, Chovanec, and Moudrý 2018(. Social enterprise in rural areas contexts shows increasing interest in the delivery of opportunities by nongovernmental players, and the main social enterprise action involves trading, service delivery channels, cross-sector collaboration, cultural virtuosities, social change, learning, training, care facilities; community care arrangements, cheap transportation, recycling, and subsidized accommodation (Ahrari et al., 2018). The main challenge of RSEs is competing for social and commercial aims. It is difficult to deal with essential comparing between profitable feasibility and social aims, and this challenge is more obvious in rural areas because of lack of customers and low-income profits. The majority of RSEs are not completely concentrating on economic objectives, and the process of decisions over their business models is very time-consuming and inefficient. This creates obstacles for RSEs to become viable social businesses. Social enterprises cannot be totally economic as they cannot make only commercial benefits. Most RSEs are not likely to forever be sustainable merely from trading products and amenities, and this might be attributable to a conventional hostility towards more business-focused tactics, mainly among the more voluntary sectors where there is often resistance to risk and sustaining RSEs (Ahrari et al., 2018). European Commission gives a particular emphasis on the social economy sector during the current programming (2014-2020), through the initiatives provided by the Social Business Initiative, which argues that social economy can play essential roles in the development of social innovation in many areas of innovation policy, such as increasing job opportunities and the environmental protection (more development and less environmental depletion), while it can combine profitability through solidarity, job creation, enhancement of social cohesion, active participation and empowerment of local communities, by giving priority to the people (Trigkas, Papadopoulos, & Karagouni, 2016). The social economy is defined as a specific part of the economy, often grouped into four major categories: cooperatives, mutual societies, non-profit associations and charities, foundations with a public purpose, and more recently, social enterprises primarily pursuing social aims (Entrepreneurship, 2017). Rural development mainly attempts to improve the rural residents' lives and is based on many factors related to economic, political, and legal, social activities. Rural areas have specific economic and social situations. The population of villages

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and rural areas mainly depends on farming and agriculture. The changing demographic situation of emigrating citizens, especially from rural areas, existing non-living areas, and buildings, call for specific activities and special attention in rural areas. Innovative decisions are needed for the solution to these problems. For more than a decade, social business and social enterprises in the European Union (EU) have played an important role in society. Social entrepreneurship became the point of attention in political and legal documents in the EU because it was noticed that the economy becomes more socially oriented and involves all spheres of our lives (Greblikaite, 2017). The concepts of social entrepreneurship and sustainable development are also interrelated. Social entrepreneurs are known as agents who employ entrepreneurial means to provide sustainable solutions to social and environmental problems that ensure their livelihood and sustainability. Recently, the literature on social entrepreneurship focuses on the relevance of small and medium-sized enterprises (SMEs) and entrepreneurship for economic development. In developing countries where resources are scarce, and banks and financial institutions are reluctant to lend financial support to SMEs, the governments have an even larger role to play by providing sources of financing for SME development. While lack of resources is considered the major barrier or hindrance to responsible business practices in SMEs, the small entrepreneurs are looking for innovative business models to sustain themselves. Considerable attention has been devoted to sustainable development, supporting social, economic, and environmental aspects. To recognize opportunities for sustainable development, entrepreneurial knowledge, and innovative capabilities play a key role. The innovative power of entrepreneurs has an important part in ensuring a more sustainable future. Entrepreneurs are, therefore, recognized as the engines and vehicles of sustainable development (Bansal, Garg, & Sharma, 2019). The ILO's experience in introducing the concept of social entrepreneurship in a challenging environment, highlights the opportunities, success factors, and lessons to be learned. It documents strategies, approaches, tools, and guidance to foster social entrepreneurship in unlikely places. It was developed through a combination of desk and field research related to both theoretical concepts and the practical experience of the ILO component of the Hayat project. The team, which included a rural development expert and an entrepreneurship specialist, carried out a literature review and studied key project documents. Visits to impoverished areas in rural Egypt allowed the team to collect information and assess the project's impact through focus group discussions and interviews with key stakeholders, youth leaders, youth volunteers, social entrepreneurs, directors of youth centres, and ILO's partners (ILO, 2017). Major entrepreneurship obstacles in developing countries include lack of financial, social entrepreneurship, absence of entrepreneurship education and training, scarcity of entrepreneurship incubator sets up of social enterprise does not hold trues under complicated government producers, particularly in post-conflict societies and among the peoples return from long time in displacement and in fragile rural societies where most of residences are small farmer or landless tenants (Twijnstra, 2011). Social entrepreneurship, commonly defined as an entrepreneurial activity with an embedded social purpose, has become an important economic phenomenon globally. Some of the most striking social entrepreneurship innovations originate from developing countries. They involve the deployment of new business models that address basic human needs, such as providing low-cost services such as the deployment of sanitation systems in rural villages and solving the problem of lack of drinking water. etc. Recently, social entrepreneurship is a vibrant phenomenon in developed countries as well. For example, according to the Global Entrepreneurship Monitor 2005 survey, an estimated 1.2 million people in the UK (representing 3.2% of the working-

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age population) are social entrepreneurs (defined in the survey as being involved in founding and running a social-oriented venture younger than 42 months). Given that the comparable number for commercial entrepreneurship is 6.2% (Santos, 2009)

In Sub-Saharan Africa, social entrepreneurship is considered essential for overcoming the fragility, as half of the world's poor people, live in fragile contexts. Fragility feeds poverty, while poverty and inequality in turn breed fragility. Increasingly, it is realized that inclusive economic growth is a vital condition for reducing fragility. This points to the importance of fostering social entrepreneurship in fragile and post-conflict situations. In its 2014 report, the African Development Bank stress that in countries transitioning out of conflict, the private sector can be a force for stabilization and renewal, creating alternatives to conflict economies based on innovative activities and social entrepreneurship that have social ends of its profitable activities. The report recommends making investments in income generation activities an early priority, even amid conflict, as a strategy for promoting peace. Other authoritative institutions including the World Bank, the OECD, and the European Commission similarly stress the significance of inclusive growth, including in fragile contexts, by promoting social entrepreneurship and private sector development (Cordaid, 2014)

For Sudan, entrepreneurial environments are combinations of social, political, economic, and cultural elements within African regions that support the development and growth of innovative start-ups and encourage new entrepreneurs and other actors to take the risks of starting, funding, and otherwise creating high-risk ventures (Abdeen, n.d.). Entrepreneurship has remained a hot issue in academia for the last three decades due to its important role in contemporary economies. It is considered and empirically approved by many researchers as a means of economic growth, source of employment, and means of societal development. Since entrepreneurship development is important for the development of the economy as a whole, most of the world's countries have launched initiatives to develop social entrepreneurship among their societies, and Sudan is considered one of these countries, in which the. local societies launched many initiatives for accelerating the processes of sustainable and integrated rural development (Gangi & Timan, 2013). The majority of Sudan's population lives in rural areas and depends on agricultural activities. The rural areas in Sudan suffer from inadequate infrastructure, widespread poverty, and lack of essential services. Thus, there is a need to solve such problems by establishing social entrepreneurship projects and disseminating its culture among rural societies. The paper investigates the role of social entrepreneurship in achieving sustainable rural development and showing the possibility of generalizing the Wad Balal Project's experience to all villages in the country and particularly villages of Gezira State.

Wad Balal **Project of Investment and Rural Development (WPIRD)**

Wad Balal is one of the villages of the Gezira State, it located on the national road linking the Wad Medani city and the Capital Khartoum, it is far away from the capital city Khartoum by about 160 kilometres, and about 20 kilometres from Wad Medani city near by the Blue Nile bank to the east. About 350 households are living in the village, which considered as one of the villages of well-known Gezira Scheme. The first idea of establishing a Wad Balal project of Investment and Rural Development as social entrepreneurship, when it was decided after several meetings that each

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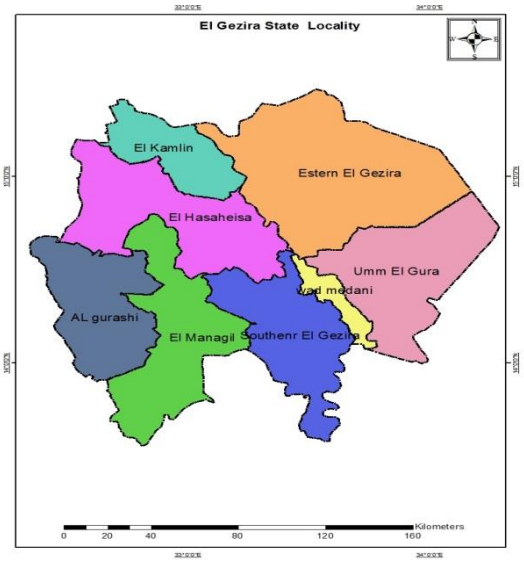
family should contribute by 100 pounds per month and the rich households can pay for poor households who are not able to contribute to the project. Shares were offered for rich persons in the village and expatriates in the Gulf countries and Saudi Arabia. The project registered as a shared company (2005), for achieving several objectives include: Working for maximizing profitability that returns to shareholders, creating job opportunities for the residents of the village, developing the social and economic life of the households in the village through ensuring services such as health, education, environmental sanitation and improving welfare of the village residents, mobilizing the available rural resources and invest them to benefit the rural peoples and redirecting 50% of the profits to social purposes and services in the village (Researcher interviews, 2019). After the completion the establishment of the company, it was owned 67 acres nearby the village for implementing the proposed projects: first poultry project was implemented with four large enclosures have been established with a capacity of about (1000) chicks, second, a cooperative society was established for sponsoring the poor households in addition to expanding charitable and social work and upgrading the village facilities, third a public library with about (1200) titles has established. Fourth Petrol station was established to face local demand for fuel in the village and its neighbours. Finally, calves breeding project was established through finance from the banks it produces a batch of 1000 calves every four months.

Wad Balal Village satellite image



Wad Balal Village A Map

Research Methodology

2. Sample size

For the purpose of determining the sample size, the research used the simple random sample, which allows all population of research have a similar chance to be selected in the sample. The population of the research includes 2364 individuals representing 350 households living in the villages under research, all of them considered as beneficiaries RSE of Wad Balal. The sample has taken randomly from the beneficiaries of the project using the following formula:

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$$n = Z_{\alpha}^{2} \frac{P(1-P)}{d^{2}} \quad (1)$$

Where:

Z: Standardized variable that corresponds to the 95% confidence level. P: Proportion social entrepreneurship beneficiaries, d: the desired marginal error or degree of precision Adam (2020), which adjusted at 0.1 in this research to have a suitable sample size with small number of research population 350 households. Applying above formula, we have:

$$n = \frac{2^{2}(0.5)(0.5)}{(0.1)^{2}} = 100$$

$$n = \frac{n0}{1+n0/N}\sqrt{N - n0lN - 1} \quad (2)$$

Applying the above formula, we have:

$$n = \frac{100}{1+\frac{100}{350}}\sqrt{350 - 100l350 - 1} = 98$$

The reliability test of the data collection tool

For testing the internal consistency of the questions of a questionnaire Cronbach's Alpha Formula has been used.

$$\alpha = \frac{N.\bar{C}}{\bar{v}+(N-1).\bar{c}} \quad (3)$$

Where: N = the number of items. $\bar{c}$ = average covariance between item-pairs. $\bar{v}$ = average variance.

For showing the differences between means the statistical t-test has been used for calculating the means and standard deviation of the study variables (households' income and expenditure, health services, education, training, environment and sanitation, protection of natural resources and utilization of renewable energy before and after the establishment of the project, using the standard Trapezium formula for the t-test given by:

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$$t = \frac{\overline{X} - \mu_0}{s / \sqrt{n}} \qquad (4)$$

Where: t-distribution with v = (n– 1) degree of freedom. ni and $\overline{X}_i$ are the size means of the sample i (i = 1, 2), respectively.

Statistical methods

The research depended on descriptive statistics includes arithmetic means and standard deviations for comparing between the household's expenditure and income before and after establishing the RSE project among the beneficiaries of this project.

The Likert Scale procedure

The Well-known Likert scale has been used to measure the attitudes of the beneficiaries of the project for examining the role of social entrepreneurship in achieving the sustainable rural development through analysing the opinions of the respondents. Likert scaling is commonly adopted in survey research that collects data through means a questionnaire, such research needs responses in scales from respondents of interest. It is a widely used scale in many research, particularly in the social science research, if a respondent wanted to respond a Likert questionnaire item, this respondent specifies a level of agreement which can be equivalent a numerical value. Most social science researchers preferred to use response categories that are on odd scale (example five, seven or nine) because they are interested the scenario in the middle response (Pimentel, 2019) The study uses Likert scale for opinion measurement shown in Fig. (1) below:

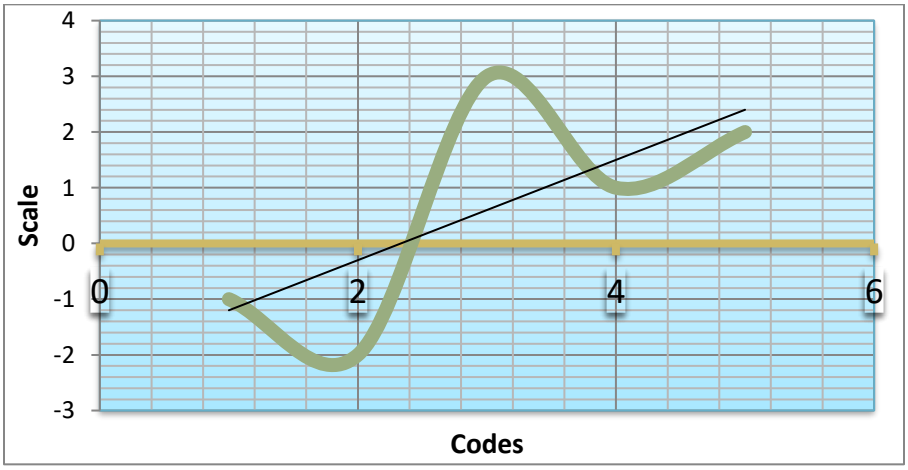

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Figure 1 five points Lickert scale for measuring the attitudes of the respondents

Source: Alnoury 2002

According to the figure, Likert scale codes respondent's attitudes “strongly agree as 5, Agree as 4, Neutral as 3, disagree as 2 and strongly disagree as 1” and the following standard is normally used to evaluate each code response.

- If the arithmetic mean is between 4.2 to less than 5.0, the response will be classified as strongly agree.
- If the arithmetic mean is between 3.4 to less than 4.19, the response will be classified as agree.
- If the arithmetic mean is between 2.6 to less than 3.39, the response will be classified as neutral.
- If the arithmetic mean is between 1.8 to less than 2.59, the response will be classified disagree.
- If the arithmetic mean is between 1 to 1.79, the response will be classified as strongly disagree (Pimentel, 2019)

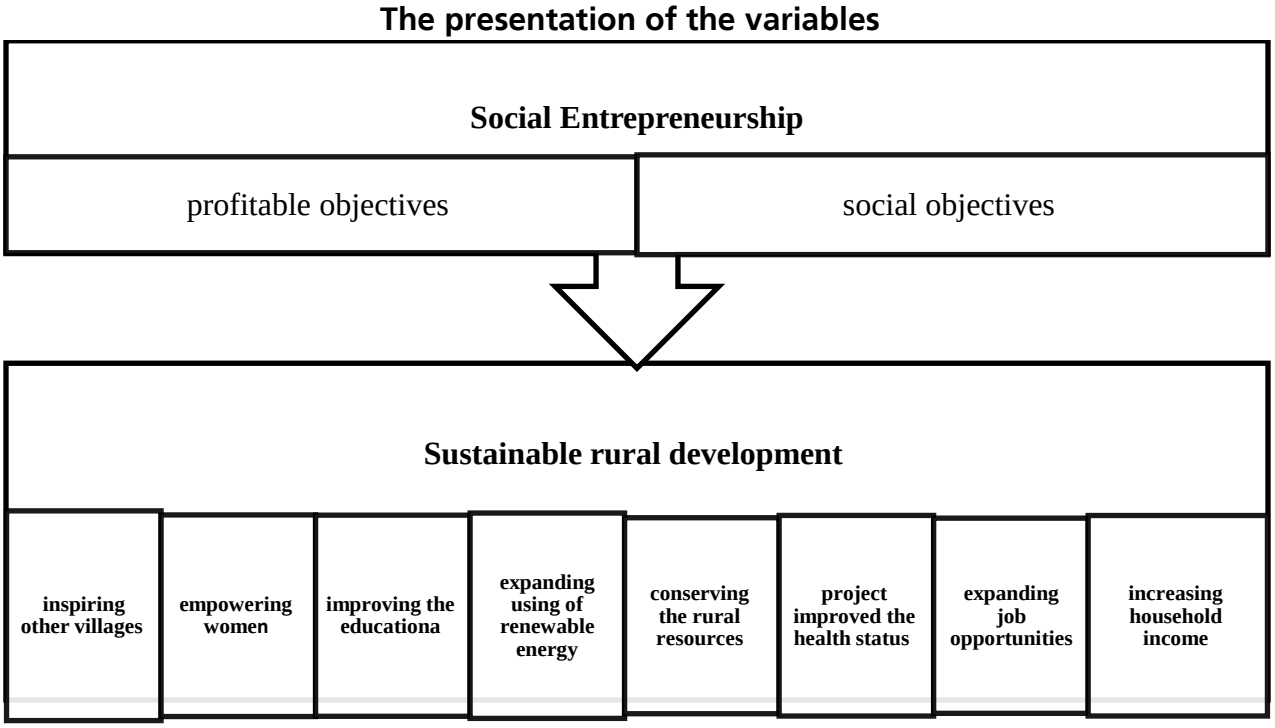

Figure (2) the social entrepreneurship in achieving SRD.

The Statistical Package for Social Sciences (SPSS) and Microsoft software excel used for calculating the statistical tools.

3. Results and discussion

The section includes the results of a questionnaire reliability, compression between monthly household expenditure and income among the beneficiaries of the project under research and examining the opinions of respondents about the ES project.

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Reliability of the constructs

Two constructs of this study namely respondent's basic characteristics and the opinions of the respondents about the role of the project in achieving sustainable rural development, attitude, and practice of the sampled members (n=100) were tested for reliability. Table 1 below shows the summary of the results of the reliability analysis of the questionnaire used in the research.

Table 1: the reliability test of a research's questionnaire

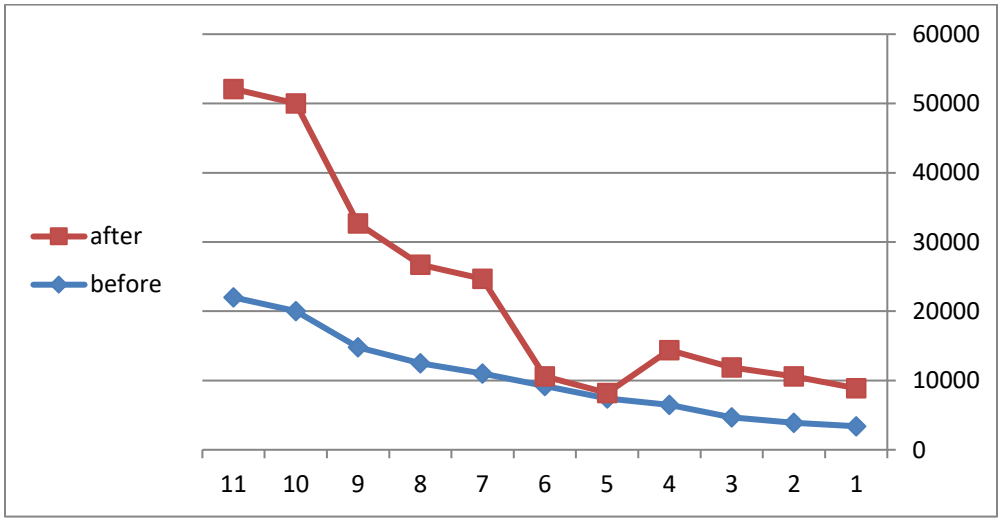
Variable Name	N of Questions	Cronbach's Alpha Values (n=100)
Respondent's characteristics	10	0.81
Poverty indices	16	0.70
Overall Scale	**26**	**0.79**

Source: SPSS Output based on researcher own, Gezira State, ***2017***

The results of the research confirmed that the items of a questionnaire are internally consistent at Cronbach's alpha (0.79). The pilot test that conducted in the research area showed that the questions of a questionnaire are stable.

Socio-economics status of project's beneficiaries before and after establishing the project.

The difference between the means of income and expenditure of the project beneficiaries before and after the establishment of the project



Average of monthy income of ten groups of respondents before and after the establishment of the projects

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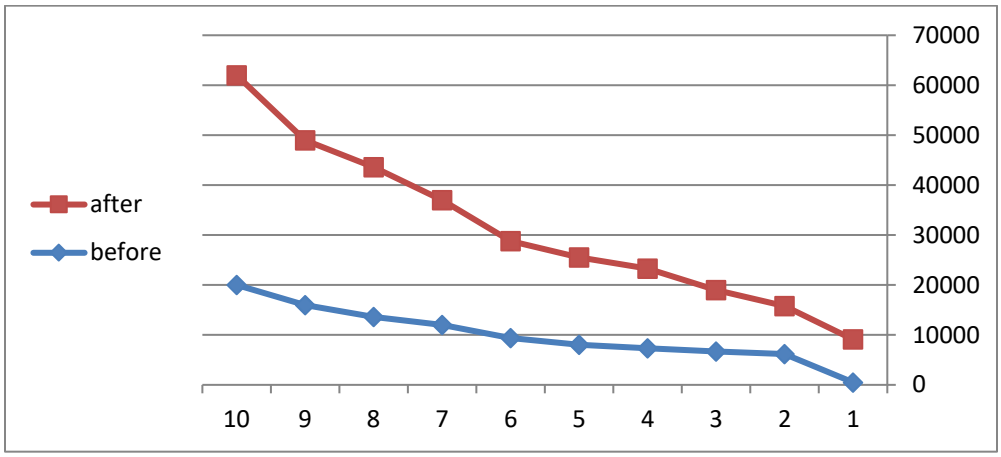

Figure 3: average of monthly of ten groups of respondents before and after the establishment of the project

The results revealed that a social entrepreneurship project of Wad Balal village has increased the average of household income and expenditure among the respondents after the establishment of their social entrepreneurship project for developing the village compared to the situation before the project, this confirmed that the project has improved the economic status, though increasing household income and expenditure among residents of the village.

Table 2: Testing the opinions of the respondents about the role of SE in achieving SRD.

The statement	Average	t value	Likert scale	p-value
The project increased the household income	4.01	47.2	Agree	0.01
The project expanded the job opportunities	4.6	32.03	Strongly agree	0.00
The project improved the educational status in the village	3.7	23.7	Agree	0.00
The project improved the health status in the village	4.2	33.05	Agree	0.000
The project contributed to conserving the rural resources	3.9	27. 07	Agree	0.00
The project expanded the using of renewable energy	3.0	12.9	Neural	0.01
The project empowered the women economically in the village	4.5	46.00	Strongly agree	0.00
The project inspired and encouraged the neighbor's villages to adopt similar projects	4.08	36.5	Agree	0.000
The project improved the nutritional status	4.23	16.9	Agree	0.00

Researcher calculation based on data collected in 2019.

Most of the respondents agreed that the social entrepreneurship has significantly increased the household's income after its establishment, the results also showed that the project has expanded the job opportunities among the residents of the village. In regard to health and educational status the results confirmed that the project has significantly improved the status of health and education in the area under research. Furthermore, the respondents showed that they were neutral about the role of the project in expanding the utilization of renewable resources in the village and they strongly agree that the project has played a significant role in empowering women

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economically in the research area. Finally, the results revealed that project of Wad Balal has inspired and encourages the neighbouring villages to establish a similar project.

4. Policy implications

The Local government should engage with rural communities in collaboration and partnership to bridge the gap in services to deliver and accelerate sustainable rural development processes.

The government of Sudan should encourage and facilitate the procedures of establishing social enterprises for reducing hunger and undernourishment in the rural areas.

The Sudan government need to depend on technological solutions to its developmental problems and encourage the youth.

to benefit more from advanced technology in establishing new projects to solving societal problems.

The other Sub-Saharan countries can benefit from the lessons and experience of such a social enterprise.

To expand the utilization of renewable energy, RSE should be established to cover more of the country, particularly in rural areas.

The RSE can mobilize the local savings and redirect them to maximize social benefits in the villages.

The institutions should direct their financial services to SRE to create new job opportunities and reduce unemployment among rural adults.

Finally, RSE can be adopted for accelerating the efforts of achieving SGDS through optimizing the use of natural resources and protecting the environment from degradation.

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Participatory Action Research to Developing Acceptable Provitamin a Fortified *Gari*

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Abstract

There is severe clinical vitamin A deficiency (VAD) prevalence among Ghanaians and many African countries. Food-based diets has been suggested as a more sustainable approach to solving the VAD situation in Africa. In this study, A participatory action research between orange flesh sweet potato farmers, gari processors within central region and academia was adopted to develop gari containing provitamin A beta-carotene. Gari is a major staple for Ghanaians and people in the West African subregion due to its affordability and swelling capacity. It is mainly eaten raw with

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water, sugar, groundnut and milk as gari-soakings or with hot water to prepare gelatinized food called gari-kai in Ghana or "eba" among Nigerians. However, gari is limited in provitamin A carotenoids. Orange fleshed sweet potato (OFSP) is known to contain large amount of vitamin A precursor. Therefore, addition of OFSP to gari would have the potential to fight the high prevalence rate of vitamin A deficiency amongst less developed regions of Africa. To develop this, different proportions of orange fleshed sweet potatoes (OFSP) was used to substitute cassava mash and fermented spontaneously to produce composite gari - a gritty-crispy ready-to-eat food product. Both the amount of OFSP and the fermentation duration caused significant increases in the β-carotene content of the composite gari. OFSP addition reduced the luminance while roasting made the composite gari yellower when compared with the cake used. Addition of OFSP negatively affected the swelling capacity of the gari although not significant. The taste, texture, flavour and the overall preferences for the composite gari decreased due to the addition of the OFSP but fermentation duration (FD) improved them. The sample with 10% OFSP and FD of 1.81 days was found to produce the optimal gari. One-portion of the optimal gari would contribute to 34.75, 23.2, 23.2, 27, 17 and 16% of vitamin A requirements amongst children, adolescent, adult males, adult females, pregnant women and lactating mothers respectively. The study demonstrated that partial substitution of cassava with OFSP for gari production would have the potential to fight the high prevalence rate of vitamin A deficiency amongst less developed regions of Africa while involvement of farmers and processors prior to the design of research phase enhanced the adoption of intervention strategies.

Introduction

Vitamin A deficiency (VAD) is the leading cause of preventable blindness and contributes to severity of infections, child mortality, maternal mortality and poor pregnancy outcomes. VAD is a serious public health problem in Ghana. The prevalence of VAD in Ghana is estimated at 76% (USAID, 2016; World-Vision, 2014), which is close to double that of Africa's average of 41.9%. (USAID, 2016). Food and Agriculture Organization (FAO) and World Health Organization (WHO) statistics on food systems for better nutrition show that Ghana is the third worst country in the world with severe VAD problems after Sao Tome and Principe (95.6%) and Kenya (84.4%) which occupy the first and second positions respectively (FAO/WHO, 2005). VAD prevalence is highest among children under 5 years of age and among women of childbearing age. VAD prevalence among under-fives and women of childbearing age in Ghana has worsened from an estimated amount of 20% in 2004 to its current rate of 35.6% (Glover-amengor et al., 2016). The main cause of VAD is low dietary intake of foods rich in vitamin A or it's precursors. This is a main problem among the poor since their diets tend to be of limited diversity and low in food of animal parts with high vitamin A content such as the liver. Infections also contribute to VAD. Promotion of food–based diets rich in vitamin A is considered the most sustainable approach to addressing VAD (Low et al., 2017), with supplementation considered a short-term strategy and fortification as medium term. Golden rice (Oryza sativa), carrot (Daucus carota subsp. sativus), and orange-fleshed sweet potato, OFSP (Ipomea batatas) are among the best sources of beta-carotene with about 85% of the carotenoids in them capable of being converted to vitamin A after consumption (FAO/WHO, 2005). However, golden rice is not grown in Ghana while carrot on the other hand is expensive. In addition, although biofortified cassava and red palm oil (RPO) could be used in gari production to enhance colour

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and pro-vitamin A carotenoids, gari produced from RPO is reported to show high β-carotene stability than that from biofortified cassava stored under ambient conditions (Bechoff et al., 2015) but has the disadvantage of generating peroxides, especially at the high roasting temperature (Alyas et al., 2006), and unpleasant smell during storage, which are harmful to the human body. Compared to cassava, sweet potato is reported to have high β-carotene stability (Nascimento et al., 2007).

This leaves OFSP as the viable option to meet the vitamin A needs of Ghanaian citizens (Low et al., 2007). Increased consumption of OFSP products therefore has the potential to contribute to improved vitamin A status among Ghanaians. Incorporation of OFSP into food systems as a strategy to improved nutrition has been suggested (Laurie et al., 2018). Orange fleshed sweet potato (Ipomea batatas) composite bread as a significant source of dietary vitamin A is documented (Awuni et al., 2018). The potential of OFSP to improve the vitamin A status in young children has been confirmed in both efficacy and effectiveness studies (Hotz et al., 2012; Van Jaarsveld et al., 2005; Tumwegamire et al., 2004). OFSP is produced in large quantities in the Central and Eastern Regions of Ghana. However, there are unsold orange fleshed sweet potato roots by farmers who produce them especially during bumper harvest because consumers complain of its undesirable soft texture after wet cooking, rendering wet-cooked OFSP unappealing, so the produce is underutilized, and its cultivation is not encouraged. Farmer's livelihood are seriously affected due to the unsold commodities. In addition, there is unsatisfied demand by farmers and processors to possess adequate knowledge and skills to process OFSP into secondary and tertiary products or develop it into OFSP-containing products. It is against this background the study adopted a strategy to incorporate it into existing and well-known staple, gari, which conventionally lacks the nutrients inherent in OFSP, particularly, pro-vitamin A carotenoids. Gari is a ready-to-eat grits produced from roasted fermented cassava mash and is a major staple for Ghanaians and people in the West African subregion due to its affordability and swelling capacity. It is mainly eaten raw with cold water, sugar, groundnut, and milk as gari-soakings or with hot water to prepare gelatinized food called 'gari-kai' in Ghana or "eba" among Nigerians. During gari processing, the cassava mash is typically fermented for up to 4 days prior to roasting depending on the cassava variety and the taste preferences by the particular community. The fermentation process and roasting affect the taste, flavour and colour of the gari. Some gari processors in Ghana add the artificial egg yellow food colour powder made of sodium chloride, tartrazine E-102 and allura red E-129 to change the natural white gari to enhance its attractiveness. Fermentation of the cassava mash is a two-phase regime. In the first phase, the starch in the mash is broken down to sugars by Corynebacterium and metabolizes into organic acids. The organic acids break down the cyanogenic glucosides in the cassava and release hydrogen cynanide (HCN). The second phase initiates the growth of Geotrichum candida to produce mould leading to release of aldehydes and esters from the sugars, which characterize the typical gari flavour. It is against this background that the project seeks to develop OFSP-gari to investigate how its proportionate amount and fermentation duration affects the nutritional, functional, and sensory quality of OFSP-gari. In addition, the study optimized the OFSP amount and fermentation duration and assessed the contribution of the optimal and validated composite gari to the recommended dietary allowance (RDA) of vitamin A among children, adolescents, adult male and female as well as pregnant and nursing mothers.

Materials and methods

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Sample preparation

Mature and wholesome Afisiafi cassava variety purposely developed for gari production and orange-fleshed sweet potato (OFSP) roots were harvested fresh from certified farms by the Department of Food and Agriculture of the Ministry of Food and Agriculture, Ghana, at Jukwa and Dahyia communities respectively in the Cape Coast Metropolitan Assembly and immediately brought to the gari processing centre for processing. Through a participatory action research, the women gari processors within central region and the University of Cape Coast researchers adopted a model to develop gari containing provitamin A beta-carotene using orange fleshed sweet potatoes. The women peeled the cassava roots and washed while the OFSP roots were thoroughly washed without peeling. After washing, the samples were allowed to drain to remove excess water. A total weight of 20 kg each mixed according to the design proportions (Table 1) was grated into smooth mash. The mash was packed into polypropylene bags, tied, screw-pressed to dewater and fermented spontaneously without the addition of a starter culture.

Experimental Design

A 2-factor, 3-level factorial response surface method was used for the study (Table 1). This design was chosen due to its robustness for optimization studies involving many responses and at least two factors. The effect of different proportions of OFSP ranging from 10 to 30% were chosen based on similar studies for composite bread (Nzamwita, Gyebi, & Minnaar, 2017) and composite gari cost implications (Awuni et al., 2018). The fermentation duration from 1 to 3 days were selected based on the traditional duration of fermentation in the central region of Ghana. This combination yielded 11 experimental runs with 2 centre points using Minitab 17 software with each run duplicated. The control sample was without the addition of OFSP. The effect of the two factors on the β-carotene content, luminescence and colour of gari (brightness, L* redness, a* and yellowness, b*), swelling capacity (SC), and sensory attributes including appearance, colour, flavour, taste (sourness), texture and overall acceptability was investigated and used for the optimization studies.

Roasting of OFSP Composite Gari

After the simultaneous screw-pressing and spontaneous fermentation of the mash, the resulting cake was pulverized and screened through 1.2 mm screens. The screened dough was roasted in stainless steel pans at a temperature of 100±5 oC for 20.14±1.5 min until the moisture content reached 5.0± 1.4 % (dry basis) ensuring that the product is very crispy. These conditions were chosen based on preliminary trials conducted. Temperatures during roasting which allow for gelatinization and drying to take place, and subsequently impacts on the crispiness and grittiness of the composite gari was monitored with an infrared thermometer. After roasting, the product was poured into a clean dry bowl and allowed to cool for 30 min to bring the product temperature to about 40 oC. The cooled OFSP-cassava composite gari was sifted through 0.6 mm screens to ensure uniformity and finer particles size of the final food product and packaged in 500 mL airtight plastics bottles and kept in a freezer at -10 C for further analysis.

Determination of β-carotene

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The β-carotene of the fresh mash and roasted gari was determined following the method reported by Sadaf et al (2013) with slight modification. One gram each of the fresh mash or roasted gari was weighed and transferred into a volumetric flask to which 10mL of absolute ethanol was added and left for about 20 minutes with periodic shaking. The extraction of the carotenoids in the roasted samples was aided by using mortar and pestle. The extraction with ethanol was repeated thrice ensuring that most of the pigment were removed from the test sample. The resulting solution was filtered using 0.45 um filter paper. Exactly 15mL of petroleum ether (40-60 oC) was added to the filtrate, shaken gently and left to stand for 20 minutes resulting in a two-layered solution. The top layer with the beta-carotene was pipetted for the absorbance reading at a wavelength of 450 nm against a blank of petroleum ether. The concentration of β-carotene was calculated (Eq 1 from the average of duplicate readings.

$$Total\ carotenoids\ (\mu g/ml) = \frac{ABS\ X\ V\ (ml) X 10{,}000}{2592 * W(g)} \qquad (1)$$

Where ABS is the absorbance; V (ml) is the volume of solvent used for the extraction; W (g) is the weight/volume of sample initially taken; 2592 is the extinction coefficient of beta-carotene in petroleum ether.

Colour Measurements

The colour of the product was measured in Hunter parameters with a real time automatic colour difference meter (Ocean optics, 77501 400uV. The machine was calibrated by placing the source of the measuring light flux (D65o) against the surface of the white calibration plates supplied by the manufacturer. After standardization, colour spectral for each of the sample was determined. The data was processed through an ocean optics spectra suite data processor to extract the colour parameters from which the L*, a*, b*, hue angles values were selected. The colour brightness coordinates, L*, measures the brightness value of the gari and ranges from black (0) to white (100). The chromaticity coordinates, a*, measures the redness when positive (+60) and greenness when negative (-60), and the chromaticity coordinate, b*, measures yellow when positive and blue when negative.

Swelling Capacity

Swelling capacity (SC) was determined according to the method reported by Iwuoha (2004). Three grams (3 g) of each sample was transferred into clean, dry, and graduated (50 mL) cylinders. The sample was gently levelled and its volume (V1) noted prior to addition of 30 mL distilled water. The cylinder was swirled and allowed to stand for 1hour while the change in volume (swelling) was recorded after 15min (V2). The swelling power of each composite cassava-OFSP gari sample was calculated as a multiple of the original volume using Eq 2.

$$SC = \frac{V_2 - V_1}{V_1} \qquad (2)$$

Sensory Analysis

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A sensory panel was formed from among the staff and students of the University of Cape Coast, Ghana. The criteria for selection of the panelists were that (a) they were available and willing to participate in the sensory analysis tests, (b) they were regular consumers of gari, and (c) were of sound health, no allergies and dentures (d) they were not colour blind and could taste sweet, bitter and umami tastes, and (e) could identify roasted gari flavours. A consumer test consisting of 50 people (both males and females) was selected. The panelists were semi-trained to recognize and score different quality attributes of the composite OFSP-cassava gari samples including appearance, colour, flavour, taste (sourness), texture (graininess) and overall acceptability. The test samples were served at room temperature conditions at 11 in the morning to the panelists. Prior to the sensory testing, the panelists stayed away from any food for at least an hour. The samples were served in transparent plastic cups in a well-lit sensory evaluation room maintained at a temperature of 20oC. The panellists were served water for rinsing mouth in between sample testing. The panel assessed the samples using a 9-point hedonic scale denoted as like extremely 9; like very much 8; like moderately 7; like slightly 6; neither like nor dislike 5; dislike slightly 4; dislike moderately 3; dislike very much 2; dislike extremely 1.

Optimization of the OFSP-Cassava Composite *Gari* Process

The optimization of the OFSP-cassava composite gari production was performed using the response optimizer composite desirability index (CDI) in Minitab Statistical Software. Equation 3 suggested by (Myers et al., 2002) was used to compute CDI.

$$\mathrm{CDI} = [\prod_{i=1}^{n} \mathrm{di}(Y_i)]^{\frac{1}{n}} \quad (3)$$

Where n^* is the number of responses, di is the desirability index for each response variable. Yi is a multivariate optimization approach used to show the desirability of the various responses. The CDI ranges between 0 and 1 with 0 being the least desirable while 1 is the most desirable. Maximization of CDI is the aim of optimization studies. The optimization process combines goals - maximize, minimize, or target for the factors and the responses. In this study, the goal for the OFSP amount and spontaneous fermentation duration was at any level within the design range. However, for the various responses studied, maximizing beta-carotene content, brightness, yellowness, swelling capacity and the sensory attributes were desired with the exception of the redness of the composite gari, which was minimized.

Assessment of the contribution of OFSP-Cassava composite Gari to Vitamin A requirements

The vitamin A content of the optimized composite gari was calculated as retinol activity equivalents (RAE) using a RAE conversion factor of 1 µg beta-carotene equals to 0.167 µg retinol equivalent as recommended by the FAO/WHO joint report (FAO/WHO, 2005). The contribution of the optimized gari to people of different groups was determined based on a volume basis of 100mL as one portion of the OFSP-cassava composite gari. The bioconversion of retinol to vitamin A activity was estimated to be 1 µg beta-carotene to 0.5 µg of retinol. The groups of individuals used for the assessment of the vitamin A contribution of the OFSP-cassava composite gari are children, adolescents, adults

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male and females between the respective ages of 3 and 9 yrs, 10 and 18yrs, and 19 and 65 as well as pregnant women and lactating mothers.

Statistical Analysis

Analysis of variance (ANOVA) was carried out with Minitab 17 Statistical software to determine the influence of OFSP amount and fermentation duration on the beta-carotene content, colour, swelling capacity, and sensory properties of the OFSP gari at a probability of 95%. The response surface plots for the factors and the significance of each model term for a second order polynomial function was generated.

Results and Discussion

Beta-carotene in OFSP-Cassava Composite *Gari*

Beta-carotene, which is converted to vitamin A by the human body when consumed and is in high amount in OFSP has the potential to combat the vitamin A deficiency in developing countries. The effect of OFSP amount and dough fermentation duration on the beta-carotene content of the composite gari is shown in Fig 1. Expectedly, both the increases in the OFSP amount and the fermentation duration caused significant ($p<0.05$) increases in the beta-carotene content of the composite gari (Eq 3). Yet, the contribution of fermentation duration to beta-carotene release in the gari was about 2.5 times higher than the amount of OFSP as shown by the Y_BC quadratic model (Eq 3). Generally, compositing OFSP with cassava for gari production resulted in an increase in the amount of beta-carotene in the composite gari (Table 1). The results agree with related studies where OFSP flour and puree were composited with wheat flour for composite bread production (Nzamwita, Gyebi, & Minnaar, 2017; Awuni et al., 2018). Increases in beta-carotene as OFSP amount is increased may primarily be due to the concentration effect of the OFSP in the cassava dough. There are a number of reasons that could account for the increase in beta-carotene as fermentation time increased. Loss of solid matter as well as unaccounted moisture as fermentation time increased may be one reason (Maziya-Dixon et al., 2008). The increased extraction efficiency of carotene as a result of fermentation could be another possible reason (Rodriguez-Amaya, 1997). Indeed, the fermentation process is associated with disruption of tissues and breaking of barrier allowing for easy accessibility and extraction of supramolecular proteolipid complexes, which are the usual state of occurrence of carotenoids in tissues (De Moura et al., 2015).

Roasting of the gari affected the degradation of the beta-carotene content of the fermented dough. As expected, carotenoids are susceptible to heat and therefore, the relatively high roasting temperature conditions of the gari would lead to some degradation of the beta-carotene. Essentially, heat application results in isomerization of all-trans-β-carotene to the cis-trans-β-carotene, which has a lower vitamin A activity, thus making the contribution of all-trans-β-carotene higher compared to the cis-trans-β-carotene as noted by Nzamwita et al. (2017). The interaction

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as well as the curvature effect of OFSP addition and fermentation duration were not significant model terms on the β-carotene content of the OFSP-cassava composite gari.

$$Y_{BC} = 23.31 + 4.36X_1 + 10.79X_2 + 0.15X_1X_2 - 1.39X_1^2 - 1.34X_2^2 \quad (3)$$

Effect of OFSP-Cassava Composite on the Colour of Gari

Colour is one of the greatest vital quality criteria of food choice by consumers. The brightness of gari is an important indicator for gari consumers as it is a measure of its purity on the Ghanaian market. Though white gari is adjudged pure, yellow hue gari is priced higher in Ghana due to the belief that it has added nutrients from food colour or red palm oil. For this reason, OFSP was chosen to simultaneously add nutrient in the form of β-carotene and colour to the gari. Both the OFSP amount and the fermentation duration significantly affected the whiteness of the composite gari [Table 2]. However, adding OFSP to cassava dough had a negative effect on the gari brightness while fermentation duration had a positive effect. The increases in the amount of OFSP decreased the brightness of the gari significantly with a much higher effect (5.5 times) than fermentation duration (Figure 2A, Table 2). This is expected because OFSP has an orange colour, and this impacted on the whiteness of cassava used for the gari production. The interaction between OFSP and fermentation duration as well as the curvature effect of fermentation was significant. Compared with the control samples, the brightness of all the OFSP-cassava composite gari decreased. This suggests that luminance of the OFSP-cassava composite gari diminished due to the addition of the OFSP but fermentation enhanced it. Since the brightness of the cake (data not shown) decreased after roasting, it does suggest that the high temperature conditions used for roasting the composite cake contributed to the decreased the luminance of the gari. This could be attributed to the high sucrose (30% of total carbohydrate in OFSP) which would undergo caramelization as was reported in a related study involving sweet potato starch in tapioca production (Akintayo et al., 2019).

The redness, a* of the composite gari was affected significantly mainly by the addition of the OFSP and not the fermentation duration although the interaction between the amount of OFSP and fermentation duration as well as the quadratic effect of fermentation duration did affect the redness. Therefore, lower amount of OFSP to cassava mash and fermentation for about 2 days will minimize redness of the composite gari. Since red gari is not a desirable product in Ghana, minimization of this colour attributes should be desirable. It is also worthwhile to mention that the relative contribution of OFSP amount to the redness of the gari was about 8.6 times that of the fermentation duration. This suggest that when OFSP is used to fortify cassava for gari preparation excessive amount (>30%) should be avoided (Fig 2B). In our study, excessive amount of OFSP in the dough produced more lumps and brown pigment after roasting. Redness of the composite gari generally increased when compared to the control, which could also be attributed to caramelization of the high sucrose in OFSP as mentioned in the preceding paragraph. The contribution of Maillard reaction to the redness may be very marginal as OFSP is not a rich source of protein.

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The yellowness, b* of the gari increased with increment in the amount of OFSP while fermentation duration decreased it but not significantly in the main regions. Both the curvature regions of the two factors used in this study affected the yellowness with the OFSP addition playing a positive role (Table 2). The amount of OFSP however contributed more to the yellowness of the gari 1.25 times that of the fermentation duration. Considering the range of hue angles of the dough used for the gari production (59° and 71°), it does indicate that roasting improved the hue angles of the OFSP-cassava composite gari samples (78° and 85°) respectively. A hue angle of 0° or 360° represents red hue, while angles of 90°, 180°, and 270° represent yellow, green and blue hues respectively. This suggests that the roasting of the OFSP-cassava composite dough made the gari yellower than the cake used to produce the gari. The second order polynomial for the colour parameters are displayed in Eq 4-6.

$$Y_{L*} = 79.468 - 3.6445X_1 + 0.6592X_2 + 0.351X_1X_2 + 0.296X_1^2 + 0.906X_2^2 \quad (4)$$

$$Y_{a*} = 7.475 + 2.027X_1 + 0.235X_2 - 0.677X_1X_2 - 0.118X_1^2 - 0.771X_2^2 \quad (5)$$

$$Y_{b*} = 40.297 + 0.909X_1 - 0.723X_2 + 0.59X_1X_2 + 2.644X_1^2 - 3.259X_2^2 \quad (6)$$

Effect of OFSP-Cassava Composite on Swelling Capacity of Gari

Swelling capacity (SC) of gari is one of the quality indices influencing consumer acceptability, as it gives higher volume and a sense of satisfaction to consumers and processors alike. As a result, swelling index of at least 300% of its original volume is preferred by consumers (Akingbala, Oyewole, Uzo-Peters, Karim, & Bacus-Taylor, 2005; Steinkraus, 1995). In this study, depending on the amount of OFSP used for the composite dough, the SC values ranged from 286 to 396% for the OFSP-cassava composite gari (Figure 3). These values are lower than the SC values for the gari made from the dough that had no OFSP (448-478%). The range of OFSP amount used from 10 to 30% for the study was not significant on the SC values (286 to 396%) of the composite gari although the effect was negative (Table 2). However, fermentation duration negatively affected the SC values of the gari significantly ($p<0.01$). Fermentation of the OFSP composite gari contributed about 7.6 times to diminishing the swelling capacity of gari than the amount of OFSP (Figure 3). This may have happened because fermentation breaks down the carbohydrates in the OFSP-cassava dough due to the production of lactic acid. Lactic acid fermentation has been reported to result in significant decrease in carbohydrate and fibre (Ogodo et al., 2017). Additionally, OFSP is a rich source of sugars including reducing sugars such as glucose and fructose and nonreducing disaccharide sucrose and reducing disaccharides maltose. Most likely, it is substituting cassava dough might have decreased the starch content and other carbohydrates such as fibre content of the composite dough, which components contribute greatly to swelling capacity of the product in which they occur. Swelling capacity of gari in water is mainly influenced by the grit particle size, the initial moisture content, fermentation duration as well as the amylose and the amylopectin in the gari. Swelling capacities of gari between 330 and 450% were reported when up to 20% yellow fleshed sweet potato was

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used to fortify bitter TS53201 cassava variety (Olayinka et al., 2016). Similar SC values between 301 and 430% were reported by Ojo & Akande (2013) for cassava and sweet potato mixes up to 50% each.

$$Y_{sc} = 3.0021 - 0.0483X_1 - 0.3717X_2 + 0.1375X_1X_2 + 0.25X_1^2 + 0.040X_2^2 \quad (7)$$

Effect of OFSP-Cassava Composite on Sensory Properties of Gari

The effect of the processing variables on the sensory properties when the composite gari samples were assessed in their dry particulate form by the panellists is shown in Figure 4. The appearance of the composite gari was negatively affected by the addition of OFSP significantly as indicated by the sensory results (Figure 4A) while fermentation duration affected the appearance positively but not significant. The taste, texture, flavour and the overall acceptability were similarly affected by the fortification of cassava with OFSP while fermentation duration for all the model terms had a positive effect on the taste, flavour, texture, and overall acceptability of the OFSP-cassava composite gari. The relative contribution of fermentation to the sensory attributes studied in this present study was higher than the OFSP addition as can be seen from the model coefficients for equations 8 through to 12. It is evident from the curvature effect that beyond 2 days of fermentation, the taste, appearance, and the texture preferences started to decline (Figure 4). This suggests that moderate amount of OFSP in combination with about 2 days of fermentation would have the highest consumers acceptability for the OFSP-cassava composite gari. As fermentation proceeds beyond 2 days more lactic acid is produced which makes the gari taste sour. Excessive sourness caused an unpleasant mouth feel making longer duration of fermentation undesirable to consumers. This observation is consistent with report by Abass et al. (2012) that gari should not be too acidic. Similarly, as the amount of OFSP in the composite gari increases the product particle size becomes coarser, which decreased the texture preference by the consumers (Figure 4B) since a smooth texture gari is preferred by consumers (Abass et al., 2012). Fibre from the OFSP might be contributing to the increased coarseness of the composite gari, especially since the tubers were not peeled before being used. High OFSP inclusion in gari production may therefore not be encouraged. Though there are obvious benefits of fermentation to gari production including improvement in taste, shelf life, flavour, safety, and reduction in cyanide content of bitter cassava variety, fermentation for OFSP-cassava composite gari should not proceed beyond 2 days if the target market is Ghana. This is not surprising because consumers in Ghana and South-East of Nigeria prefer mild sour taste gari while those in the South-West of Nigeria accept an acidic taste (Abass et al., 2012). Overall, the consumer preference and acceptability for the control gari was higher than the OFSP-composite gari. These trends depict that for OFSP to be introduced effectively into gari food-based systems to solve the vitamin A deficiency in Ghana and beyond, smaller amount should be considered for maximum consumer acceptability. Our results agree with studies by Olayinka, Balogun, Olaide, & Wasiu (2016) who reported that 10% partial substitution of gari with yellow fleshed sweet potato scored the highest consumer preference test over the 20% substitution. Intense education is however needed for consumers to understand the benefits of higher amount of OFSP in gari to demystify the negative perceptions that gari should be white and nothing more. The second order polynomial showing the main, interaction and curvature effect of the processing variables on the sensory indices is shown in Eqs 8-12.

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$$Y_{APPEARANCE} = 6.22 - 0.3244X_1 + 3.599X_2 + 0.0185X_1X_2 + 0.00441X_1^2 - 1.004X_2^2 \quad (8)$$

$$Y_{TEXTURE} = 5.904 - 0.1554X_1 + 1.996X_2 + 0.0219X_1X_2 - 0.001X_1^2 - 0.559X_2^2 \quad (9)$$

$$Y_{TASTE} = 7.29 - 0.275X_1 + 1.18X_2 - 0.0055X_1X_2 + 0.00543X_1^2 - 0.267X_2^2 \quad (10)$$

$$Y_{FLAVOUR} = 7.70 - 0.238X_1 + 0.61X_2 - 0.009X_1X_2 + 0.00363X_1^2 - 0.232X_2^2 \quad (11)$$

$$Y_{OA} = 8.16 - 0.3164X_1 + 1.446X_2 + 0.0193X_1X_2 + 0.0042X_1^2 - 0.433X_2^2 \quad (12)$$

Optimization of the OFSP-Cassava Composite Gari

In the range of independent variables used for the production of the composite gari, the simulation with 95% confidence gave 10% OFSP and fermentation duration of 1.81 days or 43 hours as the optimized processing variables. At this optimal condition, the maximum predicted responses were 15.47 µg/mL beta-carotene, 83.38 brightness, 42.16 yellowness, 5.13 redness, 340% swelling capacity, 6.98 score for appearance, 6.63 for texture, 6.23 for taste, 6.2 for flavour, and 6.96 for overall acceptability. The composite desirability of 0.77 was obtained for the effect of OFSP amount and fermentation duration on the gari quality and its sensory attributes. The desirability of each of the response parameters determined in this present study is shown in Figure 5. The taste, texture, and appearance of the composite gari gave the highest desirability index following the optimization prediction model while the beta carotene recorded the least desirability. These predictions are good because taste, texture and appearance are most important attributes of processed gari in the Ghanaian market. Consumers easily perceive texture and appearance when buying gari. Aggregators and consumers most often than not taste gari prior to buying. similarly, gari grittiness, grit uniformity and brightness of the colour is considered more important to processors and consumers than the type of colour (Abass et al., 2012). These attributes motivate consumers to purchase gari to enable them to derive the needed intrinsic nutritional benefits. Verification of the optimized condition gave 16.72 µg/mL beta-carotene, 85.16 brightness, 40.2 yellowness, 4.93 redness, 350% swelling capacity, 6.75 score for appearance, 7.0 for taste, 7.35 for texture, 7.0 for flavour, and 7.2 for overall acceptability. These experimental values are closer to the predicted responses, indicating the goodness of fit of the model.

Contribution of OFSP-Cassava Composite Gari to Vitamin A Requirements

The contribution of gari to the recommended dietary allowance (RDA) of vitamin A largely depended on the amount of OFSP in the composite gari (Table 1). The physiological requirements of each groups of individuals similarly vary with the vitamin A needs. From the verified optimized beta-carotene content of 16.72 µg/mL for the 10% OFSP composite gari the retinol equivalent (RE) was calculated to be 139 µg/100mL or 139 µg/62g RE (average bulk density of the OFSP-cassava composite gari was determined to be 0.619±0.011 g/cm3) or 695 IU. This value is by far higher than the control gari (46.5 µg/100mL). Given that the RDA for children, adolescents, adult males and females are 400, 600, 600, and 500 µg respectively, one portion of the composite gari can contribute to 34, 23.2, 23.2, and

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27.8% of retinol amongst children, adolescent, adult males and adult females respectively. On the other hand, unfortified gari would provide 11, 7, 7, and 9% of retinol amongst the same group of individuals respectively. Regarding pregnant and lactating mothers, one portion of the optimized OFSP-cassava composite gari would supply 17% and 16% while the gari without OFSP would provide 5.8 and 5.4% of the recommended daily requirements for pregnant women and lactating mothers respectively. These contributions to retinol RDA of these groups suggest that additional amounts of retinol are needed to meet the daily requirements. This is because the optimized composite gari would meet less than 50% of the RDA of vitamin A for these groups of individuals. The contribution of total beta-carotene of OFSP-wheat composite bread containing 10% OFSP flour was found to be 115.6 μg/100g, which would contribute 29% of the RDA among children between the ages of 3 and 10years (Nzamwita et al., 2017). As the OFSP amount was increased to 20 and 30% in the bread, the respective vitamin A contribution increased to 61 and 89%. This in an indication that the OFSP amount could be increased in gari but that would mean that consumers would have to pay more for the same quantity of composite gari since OFSP is priced higher 0.52USD/kg than cassava (0.13 USD/kg) in Ghana. In addition, since increasing the level of OFSP negatively affected the appearance and consumer acceptability of the final product, some education would have to be undertaken, about the health benefits the higher amount of OFSP in the composite gari, in spite of the appearance could provide to addressing the vitamin A deficiency problems.

Conclusions

Addition of 10% OFSP to 90% cassava mash and fermented for 1.81 days or 43 hours prior to roasting gari causes an improvement in the beta-carotene content of the OFSP-Cassava composite gari, which can hypothetically be used to reduce 34% of the vitamin A deficiency in children between the ages of 3 and 10 years. Pregnant women and nursing mothers on the other hand may need more OFSP gari (>100mL) or of gari containing higher amount OFSP to meet their vitamin A requirements. To improve processors and consumers acceptability of the sensory attributes and cost implications of the OFSP-cassava composite gari as well as the ease of roasting by processors more than 30% of the OFSP in the composite gari should be avoided.

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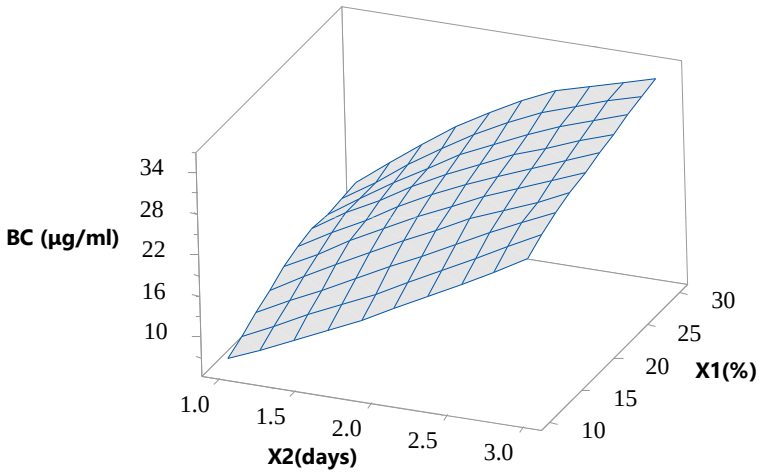

Fig. 3 Effect of OFSP amount and dough fermentation duration on beta-carotene content in OFSP-cassava composite gari. X1 is the percentage amount of OFSP in the composite; X2 is spontaneous fermentation duration in days

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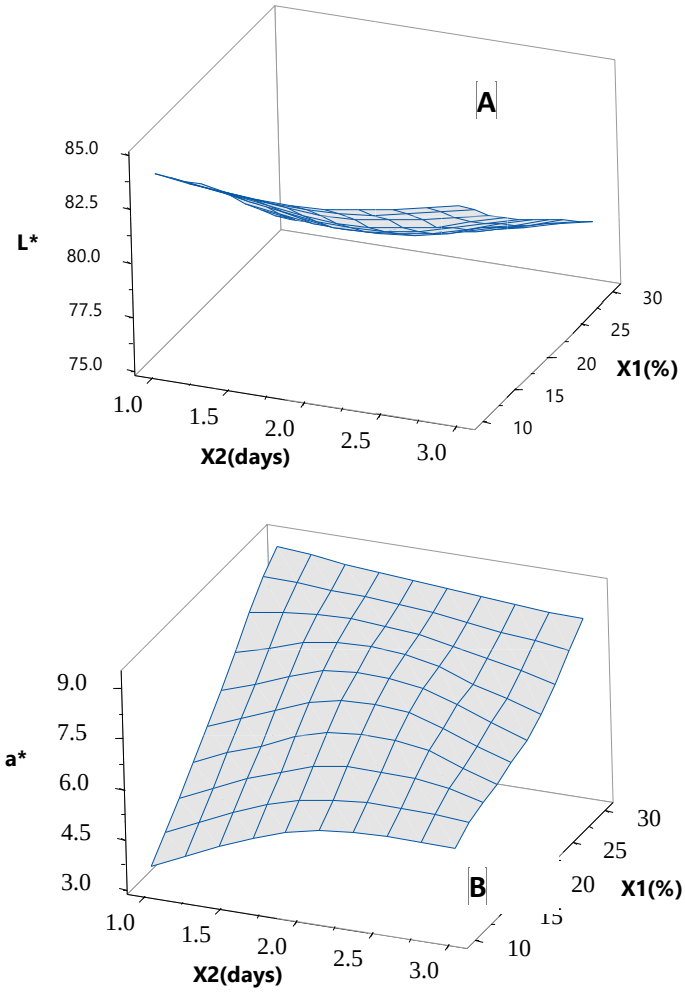

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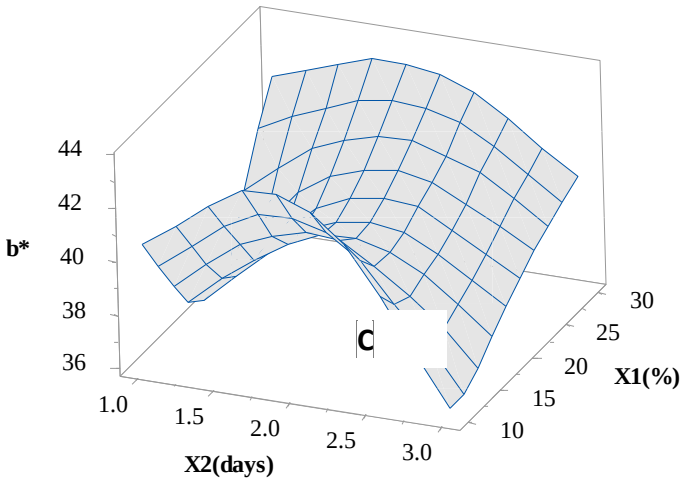

Fig. 4: Effect of OFSP and fermentation duration on (A) brightness, (B) redness, (C)yellowness of composite gari. X1 is the percentage amount of OFSP in the composite; X2 is spontaneous fermentation duration in days

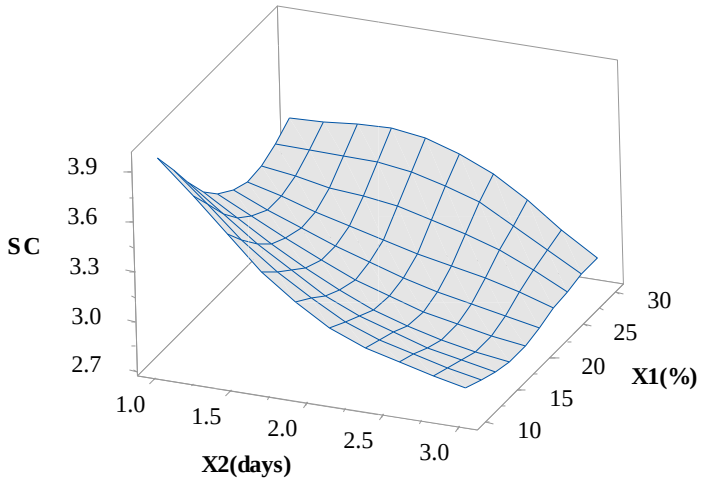

Fig. 5: Effect of OFSP amount and fermentation duration on the swelling capacity (SC) of composite gari. X1 is the percentage amount of OFSP in the composite; X2 is spontaneous fermentation duration in days

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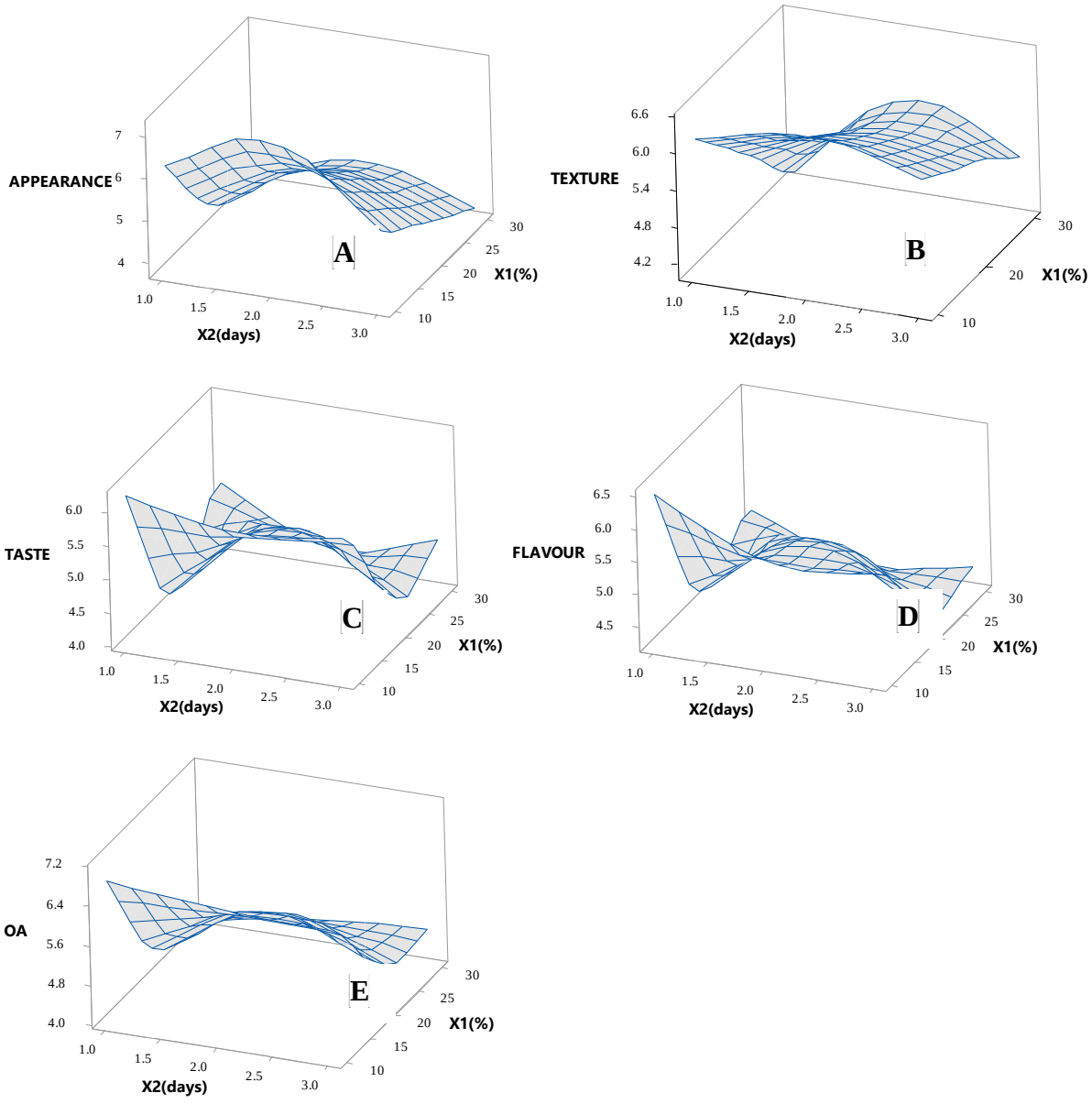

Fig. 6: Effect of OFSP and fermentation duration on the sensory properties of the composite gari (A) Appearance, (B) Texture, (C) Taste (D) Flavour and (E) Overall acceptability. X_1 is the percentage amount of OFSP in the composite; X_2 is spontaneous fermentation duration in days

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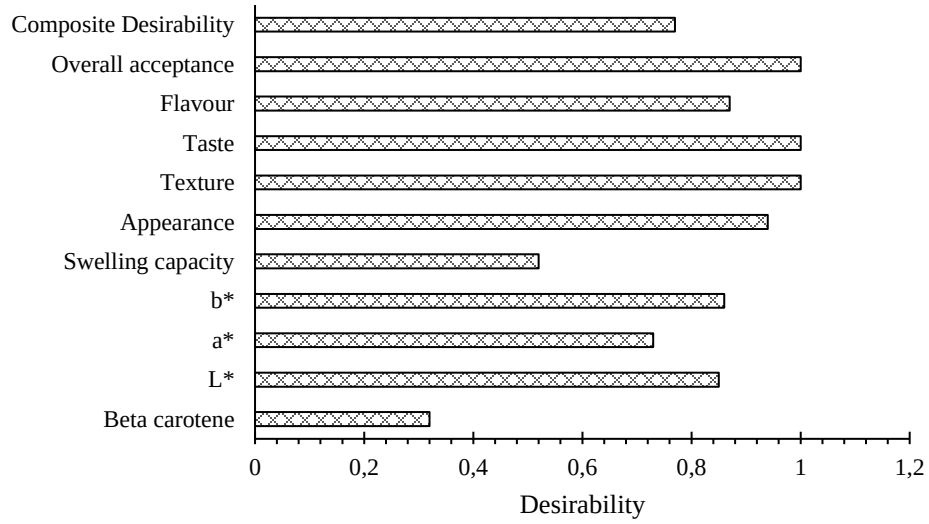

Fig. 7: Desirability of the composite OFSP-Cassava gari for the various responses studied.

Table 1 Result of 2- factor three-level RSM for the OFSP- Cassava composite gari

X1(%)	X2(d)	BC (µg/ml)	L*	a*	b*	SC	APPEARANCE	TASTE	TEXTURE	FLAVOR	OA
10	3	27.85	84.669	5.56	36.17	2.86	5.5	6.1	6.1	5.8	6.5
20	1	11.63	80.032	6.35	36.19	3.36	4.2	5.2	4.1	4.3	4.5
10	1	6.06	83.898	3.58	40.45	3.96	6.2	6.2	6.2	6.5	6.8
20	3	32.32	81.041	6.49	38.06	2.78	4.6	5.6	4.5	4.5	4.9
30	2	27.78	76.382	8.84	43.11	3.40	4.6	5.5	4.3	4.3	4.5
20	2	18.35	79.36	7.66	40.24	3.10	5.4	5.7	5.3	5.0	5.5
30	3	35.36	77.982	8.52	40.00	2.87	3.9	4.9	4.7	4.5	4.7
20	2	23.78	79.36	7.63	40.23	2.96	5.7	5.9	5.1	5.4	5.6
20	2	27.78	83.471	7.66	40.20	2.89	5.2	5.7	5.5	5.6	5.7
10	2	16.07	75.807	5.31	42.96	3.16	7.2	6.5	5.9	5.7	6.6
30	1	13.04	88.938	9.25	41.92	3.42	3.8	4.1	5.0	4.8	4.2
contr	1	5.27	88.938	-0.62	21.92	4.78	8.0	7.2	7.2	7.2	8.0
contr	2	5.58	88.657	0.50	20.39	4.48	7.8	7.0	6.7	6.9	7.4
contr	3	4.97	89.277	0.26	16.85	4.63	7.6	7.1	6.2	6.5	7.0

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Table 1 RSM Coefficients for a quadratic model terms for the OFSP-cassava composite gari responses and their significance

Response	β_0	X_1	X_2	X_1X_2	X_1^2	X_2^2	R^2
BC	23.31	4.36	10.79	0.15	-1.39	-1.34	94.06
P-value	<0.001*	0.021*	<0.0001*	0.932	0.525	0.539	
L*	79.468	-3.6445	0.6592	0.351	0.296	0.906	99.69
P-value	<0.0001*	<0.0001*	0.001*	0.029*	0.098	0.002*	
a*	7.475	2.027	0.235	-0.677	-0.118	-0.771	97.31
P-value	<0.001*	<0.0001*	0.208	0.019*	0.657	0.027*	
b*	40.297	0.909	-0.723	0.590	2.644	-3.259	81.28
P-value	<0.0001*	0.182	0.273	0.450	0.033*	0.015*	
SC	3.0021	-0.0483	-0.3717	0.1375	0.250	0.040	89.28
P-value	<0.0001*	0.500	0.003*	0.152	0.059	0.714	
APPEARANCE	5.422	-1.110	-0.047	0.185	0.441	-1.004	95.91
P-value	<0.0001*	<0.0001*	0.714	0.265	0.063	0.003*	
TASTE	5.019	-0.693	-0.003	-0.055	0.543	-0.267	71.72
P-value	<0.0001*	0.025*	0.988	0.846	0.17	0.466	
TEXTURE	5.832	-0.7128	0.1972	0.219	0.101	-0.559	94.75
P-value	<0.0001*	<0.0001*	0.077	0.10	0.495	0.009*	
FLAVOUR	5.057	-0.745	-0.137	0.090	0.363	-0.232	73.38
P-value	<0.0001*	0.018*	0.555	0.748	0.325	0.516	
OA	5.44	-1.098	0.101	0.192	0.42	-0.433	93.44
P-value	<0.0001*	0.001*	0.499	0.307	0.105	0.098	

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Effect of Soft Skills Training in Secondary School Principal's Performance in Kenya

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Abstract

A school leader's achievement is not what they study in learning institutions but the way they organize themselves into problem solving and realistic decision making. While this includes some taught hard skills, the bulk of school activities rely on soft skills. Soft skills, however, are frequently neglected, although they play an important role in school principals' daily operations as an instructional supervisor. This study aimed to examine the relationship between soft skills training and Principals' performance. The study adopted a cross-sectional mixed survey design. Using Yamane formulae, the sample comprised of 167 principals from 286 public secondary schools in Kiambu County. These were spread proportionally across all the 12 sub-counties in the County. The principal research instrument was primarily a questionnaire. The reliability of the instrument using the Cronbach Alpha coefficient was deemed reasonable at.73. The findings showed that a substantial relationship exists between the training of the principal on soft skills and their good performance of the duties. The study suggests routine in-service training should be undertaken in the county to improve the development of soft skills. It is also advisable that undergraduate, postgraduate, or in-service training include soft skills as a unit, to build knowledge of the value of soft skills.

Keywords: Soft skill, instructional supervisor, performance and training

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INTRODUCTION

Background

The performance of a school leader is not what they learn in learning institutions but the way they package themselves in problem-solving and decision making. Goleman (2010) reiterated that good manager's secret is not what they learn in schools but the soft skills they possess. Ward and Dorothy (2014) stressed that soft skills play a very important role in career-life and must not be overlooked by the employees. Effectively, any organization will be effective if leaders incorporate and leverage soft skills and integrate them into everyday services.

Many researchers have described soft skills as personal characteristics that individuals possess and that which helps them to survive in their daily chores. Marcial (2013) has described soft skills as the personal qualities that influence individuals' interpersonal relationships, job performance, and career outlook for individuals. Marcial argued that those skills help to shape a manager's personality and integrity in the work environment. Soft skills as seen by Pereault, (2004) are special characteristics and abilities that distinguish a person from individuals who have similar professional backgrounds and experience. In other words, Robles (2012) saw soft skills as a person's personal qualities such as honesty, competence, commitment, and versatility which are considered to be very important in the workplace. Robles further argued that soft skills use character characteristics, habits, and attitudes instead of technological aptitude and experience. Soft skills can therefore be defined as those qualities in a person that one uses in their day-to-day management to solve problems, respond to crises, or even manoeuvre in negotiating times.

Bhatnagar (2011) insinuates that soft skills are the key qualifications in today's economy for getting a job. He believes that a small percentage of technological skills inspire, but the ability to use soft skills counts for a greater percentage. Deepa and Manisa (2012) agreed on this view, adding that soft skills provide a variety of an individual's interpersonal skills required to establish a relationship with others, and therefore a requirement for employees of the 21st century. This Wijan (2012) noted that leaders of the 21st century need creativity, communication, and innovative thinking among other soft skills to tackle the challenges of the technological era.

Wallapha (2012) listed seven soft skills including critical thinking and problem solving, communication and presentation, teamwork, lifelong learning and knowledge management, development and construction of innovation, morality, and professional skills as the soft skills administrators and teachers can use educational management. In their day-to-day operations, school leaders find themselves in situations involving negotiation, responding to emergencies, and dispute resolution. Negotiation skills, for example, enable the principal to be able to turn agreements into partnerships with strong communication forces. That needs the ability to use soft skills and possess it. Bhatnagar (2011) thought that leaders with low soft skills have drawbacks in achieving personal as well as professional success. Farmer, Meghan, and Jill (2011) reiterated this stance by noting that educators have the

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crucial task of perceiving the worker as a whole about the roles of the community of which he/ she is an integral part. Therefore, the effectiveness of the principal has a major impact on the school's progress.

Ordinarily, leadership classes teach three skills essential for leaders namely, technical skills, human skills, and conceptual skills. Technical and conceptual skills are very useful at the lower managerial levels. Human skills are what primarily houses soft management skills which are mostly applicable at higher management levels. As noted earlier, seven soft skills in Wallapha (2012) should be highly practiced by educational administrators. Wijan (2012) further stressed that it is the responsibility of educational administrators to build these soft skills among their staff to allow them to perform highly. According to Katz (1974), if educational administrators want to operate school organizations effectively and efficiently, they must incorporate and integrate these essential skills.

As Goleman (2012) suggests, when leaders reach senior management ranks, more human skills are required than technological skills. Goleman argued that the competencies of emotional intelligence are synergistic with those of cognition; the top performers have both. The more complicated the work, the more it's about emotional intelligence. This is because a shortcoming in these capabilities could impede the use of whatever technical expertise or intelligence an individual may have. Simply put, if one does not regulate one 's emotions, it may make them dumb however intelligent they might be.

Ang, Van, and Rockstuhl, (2015), describe cultural intelligence as the capacity of an individual to adapt as he/she communicates with others from different cultural regions and has behavioural, motivational, and metacognitive aspects. On the other hand, Ababneh (2016) sees cultural intelligence as the cognitive, motivational, and behavioural capacities for recognizing and reacting effectively to individuals and groups' beliefs, values, attitudes, and behaviours under dynamic and evolving conditions to bring about the desired change. People with higher cultural intelligence are considered to be able to integrate successfully into any climate. Another culture can have the same cultural practices as a leader but vary in department specialization. Seeking a common ground helps the leader understand other people and reduce contact barriers (Alon, Boulanger & Taras, 2016).

A school principal should avoid stereotyping. Stereotyping gives a leader the profile of other persons but can be risky as it can lead to making negative and incorrect assumptions being made. A leader should note that for a common purpose, people from different cultures have their traditions and values that may vary (Livermoore 2011) but must be a blend for a common goal. Principals should therefore cultivate understanding rather than the judgment of a person on his/her worth instead of assessing him/her from a cultural point of view.

According to Adeel and Pencheng (2016), people with high cultural intelligence are attuned to the values, beliefs, attitudes, and body language of people from different cultures. They use this knowledge to interact with empathy and understanding. They also use observation, empathy, and intelligence to read people and situations and make

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informed decisions about why others are acting the way they are. In the era of advanced technology, delocalization, and 100% transition in Kenya, principals must possess emotional and cultural intelligence. Being able to control emotions, helping employees appreciate their feelings, and functioning well in any situation with any form of the employee helps leaders build trust and accomplish goals.

Communication is a central feature of leadership. Communication skills are important in individual and organizational success, as Conrad and Robert (2011) have emphasized. School principals lead teachers, support staff, students, Board of Management (BOM), parents, community, and other stakeholders. Principals, therefore, need to be great managers, meaning they must have things done by people and through people. And therefore, the individual interpersonal relations must be prevalent for positive perception. This requires good communication between the super-ordinate and sub-ordinate. The way the administrators converse with their employees determines the level of trust they received from them. Lee and Tien-Tse (2011) posited that communication skills are one of the soft skills that must be acquired by all leaders and especially school principals. They believed that principals could improve their roles by sharing insights through various forms of communication and learn from them.

The way followers perceive you as a Principal determines your competence and therefore the overall productivity. Bhatnagar (2011) mentioned that communication is one of the most important soft skills which when it lacks in principals, the whole system may collapse. Through communication skills, principals can persuade, train, present, inspire, and teach the implementers of the vision.

Effective leaders regularly evaluate their leadership styles when they manage others. This calls for a leader to periodically assess their managerial strengths and weaknesses. Wijan (2012) argues that to effectively communicate, it is important for the leader to re-assess the channels of getting objective feedback. According to Dede (2010), the success of every school principal is connected with the subjective judgment that others have about them whether verbal or non-verbal. These include those above, on the same level, and those below the principal in the pecking order. Their perception about you majorly affects leaders' productivity at a given time and space. This was viewed by Marcial (2012) as the practice of open communication and demonstrates fairness in the workplace.

Teams are groups of people in an organization composed of members who are interdependent, share common ideals. In a school, teams must be coordinated to achieve intended organizational objectives. Teams emphasize the collaborative effort of all members. Team building is an important factor in providing quality service and remaining competitive as an organization. Teamwork was seen by Lingard, (2010) as comprising various skills such as arriving on time promptly, sharing opinion and knowledge, considering the suggestion of others, showing respect to other team members, and providing help to others.

Goleman (2012) posits that when teams operate at their best, the results can be more than simply additive and hedge at multiplicative, with the best talents of one-person catalysing the best of another and another to produce

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results far beyond what one person might have done. The explanation of this aspect of team performance lies in the members' relationships that are in the chemistry between members. According to Pauli (2018), teamwork can improve communication and increase the efficiency of the individual, bringing benefits to everyone. Pauli asserts that collaborative skills are very important in the workplace to enhance cooperation with colleagues for better results. The ability to work with other team members is a very important soft skill, which increases significantly the chances of getting the job done.

Principals' performance in this study will comprise of results of an institution measured against the intended output. Specifically, the study will measure performance by academic and financial performance. In an era where there are so many changes happening including technological advancement, crisis management, delocalization in Kenya, the introduction of Teacher Professional Appraisal and Development (TPAD) and more importantly enshrining of Continuous Professional Development (CPD), principals must have soft skills to ensure achievement of objectives.

Although principals' operations require hard skills taught, the bulk of school operation is dependent on the soft skills. Soft skills, however, are often overlooked, yet they play an important role in the day-to-day operations of a principal as an instructional supervisor. This study aimed at investigating the relationship between soft skills training and Principals' performance.

The objective of the study

The objective of this study was to find out if there exists a significant relationship between soft training and principals' performance.

Methodology

A total of 286 principals in Kiambu County were targeted to participate in the study which was done between July 2019 and November 2019. Using Yamane formulae, a sample comprised of 167 principals was selected from 286 public secondary schools in Kiambu County, Kenya. These principals were proportionally distributed in all 12 sub-counties in the County.

A monkey survey was sent to principals' emails after a formal request through a phone conversation. The questionnaire consisted of closed and open-ended to elicit reactions and to provide flexibility in the answers. A five Likert scale was used for easy of finding the effect between training on soft skills and principals' performance.

Results and Discussions

Findings

Out of a total of 167 principals who were sent the questionnaires, a total of 156 completed and returned. This gave a response rate of 93.4 %. According to Mugenda and Mugenda (2003) in which they assert that a 50 % response rate is adequate, a 60 % response rate is good and above 70 % response rate is very good. Creswell (2014) asserts

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that a questionnaire return rate of above 75% is sufficient for generalization of the findings to the target population. The return rate was thus favourable for data analysis.

The study sought to find out the demographic characteristics of the sampled principals. This was necessary because the experience for example would enable principals to acquire soft skills not taught in school. Table 1.1 gives a summary of the demographic characteristics.

Table 1.1

Demographic information for school principals

Variable	**Category**	**N**	**Percentage**
Gender	Male	87	55.8%
	Female	69	44.2%
Academic qualification	Bachelor's degree	109	69.9%
	Masters	54	34.6%
	PhD	1	0.006%
	Others	1	0.006%
Administrative experience	Less than one year	13	8.3%
	1 – 5 years	48	30.8%
	6- 10 year	53	34%
	More than 10 years	42	26.9%

Table 1.1 shows that there were more male teachers than female teachers sampled. This could be attributed to the possibility that the Teachers Service Commission (TSC) in their deployment policy endeavour to acquire gender parity especially in a leadership position in schools. The increasing number of female principals could be attributed to this and as observed also the fact that more women are gradually accepting leadership positions in institutions of learning in Africa (Muzvidziwa, 2014)

Almost all principals (99.94%) had a bachelor's degree and above. This shows that all the principals sampled had gone through common courses in the University that are geared to providing soft skills to graduates. Among, these a big number (35.66%) had a Master of Education degree. This means that they have been taken through leadership skills in their course work.

Quite a sizable number of principals (61%) have had enough administrative experience of more than 5 years. This shows that a majority of principals have served for a substantially long period thereby accumulating some soft skills necessary in work performance. They were therefore able to address the items presented to them with confidence and knowhow. As theorized by Palestini (2009) experience of a leader can influence efficiency and productivity through repeated situations and environmental circumstances. This is for example true when a principal increases performance by emphasizing order, rules, and defined roles in a group that is not motivated.

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Further, the principals were asked to rate the training effectiveness of various soft skills selected for the study. The results were as shown in Table 1.2.

Table 1.2

Mean scores of importance of soft skills training and school principal's performance.

Soft skill	**Mean**	**Standard Deviation**
Communication	3.67	.23
Cultural Intelligence	3.26	.57
Emotional Intelligence	3.33	.47
Teamwork	3.64	.32
Problem Solving	4.21	.53
Critical Thinking	3.60	.49
Total	**3.62**	**.44**

Table 1.2 shows that among the skills identified as soft skills, principals scored highly on problem-solving (4.21) and communication skills (3.67), followed by teamwork (3.64) and Critical thinking (3.60). The principal's rated training on cultural intelligence (3.26) and emotional intelligence (3.33) as not very important.

The study sought to find out if there exists a significant impact of soft skills training on principals' performance.

Hypothesis testing

H01: There is no significant relationship between soft skill training on principals' performance

The impact of soft skills training on principals' performance was measured using school performance. The results were summarized in Table 1.3

Table 1.3

The relationship between soft skills training and principal's performance

Soft skill	Beta	t- value	sig	Comment
Communication	-0.432	-2.1	0.046	Sig
Cultural Intelligence	-0.187	-0.751	0.524	Not sig
Emotional Intelligence	0.017	0.863	0.645	Not sig
Teamwork	0.568	2.875	0.004	Sig
Problem Solving	0.316	1.63	0.001	Sig
Critical Thinking	0.617	0.684	0.021	Sig

Table 1.3 presents statistical estimates of standardized coefficients and p values of the predictors (Communication, cultural intelligence, emotional intelligence, teamwork, problem-solving, and critical thinking skills). Among the predictors, cultural intelligence and emotional intelligence were found not too significant predictors of principals' performance.

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Table 1.4

Relationship between soft skills training and principals' performance

Model	Sum of Square	DF	Mean Squares	F	Sig
Regression	42.75	5	5.213	2.542	0.034
Residual	119.876	61	2.152		
Total	162.626	66			

a. Predictors: (Constant), Communication, Cultural intelligence, emotional intelligence, teamwork, critical thinking, problem solving skills

b. Dependent Variable: Principal performance

Table 1.4 shows the regression of combined independent variables. The results had an adjusted R2 of .378 which shows that at least 37.8% of the variance in principals' performance was accounted for by selected soft skills training. The F value (2.542) was significant at 0.034 ($p < .05$) shows the effect of selected soft skills training on principals' performance.

Discussion of the findings

The results revealed an average rating of soft skill training ranging from 3.26 to 4.21 with an average of 3.62. The results of simple linear regression showed that training on soft skills impacted the principal's work performance. This finding is in agreement with many researchers on soft skills such as Ibrahim (2017), Homer (2001) who found that soft skills are needed in day to day running of schools. However, it disagrees with the findings by Donald (2001) who assert that there is no relationship between training in soft skills and work performance. Although Donald does not agree that soft skill training is important for performance, he alludes that these important skills can be acquired as one climbs the ladder of management.

Generally, principals pointed out that problem-solving skills should be introduced as a unit in Universities as there are so many emerging issues that require this skill. They also were all in agreement that communication skills, critical thinking, and teamwork should also be taught to school managers. A probable reason being why problem-solving rated very high was that principals especially in Kenya are encountered with varied issues to handle including unrest, 100% transition which requires infrastructural development, nationalization of teachers, teacher utilization, internally displaced students, and other emerging issues in education.

The principals were aware of the importance of soft skills in their performance of duty. They alluded to the fact that although some skills seem more important than others, situational analysis is necessary to determine the most appropriate skill. Training in emotional intelligence for example will make principals associate with workers

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professionally without feelings. The principals agreed with the assertion by Coleman (2010) who said that employees will not ordinarily become emotional, but leaders will. When leaders become emotional, they may not be able to control the emotions of their employees. Hence the need for training on emotional intelligence.

Recommendations

Based on study findings, the following recommendations were proposed.

Soft skills training should be encouraged as it raises awareness among the school administrators. Before being appointed as principals, TSC should establish whether principals have some soft skills. Today's employees should have more soft skills than hard skills.

Training of principals on soft skills should be incorporated at all levels of training school administrators. This would make the administrators have basic soft skills.

Training agencies mandated to offer INSET should break from the normal practice and modernize training to include a unit in soft skills. For employability, Universities and other institutions offering INSET, should offer a course in soft skills at all levels and especially at master's level. Such institutions could create awareness on the importance of soft skills in life.

Conclusion

Principals should have a high level of soft skills if they are to be abreast with day-to-day efficient performance of duties for the general school productivity. Training in soft skills may not be in the mainstream academic teaching and learning calendar but this study has revealed that it is an important ingredient for principal performance. To address the challenges of the 21st-century principal in times when information is at the click of a button and upsurge of collaboration, acquisition of soft skills to have effective communication, build teams, solve problems through critical thinking, and above all have some level of intelligence. Principals can also improve their proficiency in soft skills through In-Service Training (INSET) to meet the school goals and objectives.

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The "Hospitality Entrepreneur" in Tourism Education in Ghana, Africa

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Abstract

Studies in entrepreneurship education in hospitality and tourism has indicated that further attention could be given toward helping students to develop creativity and critical thinking skills, engage in deeper self-discovery experiences, and understand tourism more fully to help prepare them for entrepreneurial roles. This study aims at evaluating Hospitality entrepreneurial modules offered in Tourism programs in Ghanaian institutions. The curriculum of Tourism in two tertiary institutions in Ghana offering Tourism is studied. The research highlights on the need to integrate hospitality technical skills into Tourism education to create a culture that will enhance the growth of entrepreneurial hospitality into Tourism as culinary Tourism is becoming common. Some of the challenges faced by tourism students and entrepreneurship educators are highlighted. Structured interview technique was used to collect data from 20 purposive sampled students of the selected institutions. The results revealed that the level of importance and attention given to hospitality skills in tourism and the perception of students on acquisition of the required competencies is minimal. It is therefore recommended that more skills and competences in hospitality operation, food and beverage production and service be introduced in tourism education in a more holistic manner with emphasis on skill acquisition in order to make the tourism graduate more creative and critical thinker in today's global competitive environment.

Keywords: Tourism education, Hospitality entrepreneurial skills, Culinary Tourism, curriculum, Ghana

1. Introduction

Tourism has become a major science that is taught in higher education across the world (Malihah, Puspito and Setiyorini, 2014). This is because tourism education plays a key role in fostering tourism development and ensuring continuous supply of quality human resources to meet industry requirements and expectations as well as fulfilling the broader perspective of managing tourism (Lam and Xiao, 2000).

Tourism education has generally been structured to train graduates with academic insight to take up managerial positions and address tourism management problems within the industry. Thus, the need for developing tourism education with academic perspective has increased over the years with little attention given to vocational and practical training (Malihah, Puspito and Setiyorini, 2014; Başaran, 2016).

Even though tourism education has been developed to emphasize theoretical learning in academic point of view, there is still the need to undergo training to gain understanding in occupational knowledge for future ventures (Malihah, Puspito and Setiyorini, 2014). Thus, tourism education also has the potential to develop hospitality entrepreneurs based on practical and technical skills acquired during training (Deale, 2016). In this regard, Lewis (2005) indicated that balancing the conceptual and vocational aspects of tourism education is crucial to producing

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well-rounded graduates. The creation of this balance develops students who are well-versed and responsible in tourism development as well as occupationally functional in tourism through the creation of business ventures.

Notwithstanding the need for occupational instructions, the lack of practical and technical skills training to foster applied applications in real world situations has been the weak link of tourism education for years. As a result, several research have revealed that although tourism education has progressed over the years, there has been a lack of focus on practical and technical skills that can foster venture creation, entrepreneurship and entrepreneurial mindset among tourism graduates (Zhang and Wu, 2004; Pani, Das and Sharma, 2015; Batra, 2016).

According to Lam and Xiao (2000) the underlying cause of this problem is that, during the planning of tourism curriculum, educational institutes pay more attention to theoretical concepts and knowledge rather than skill development. This means that practical training is given limited attention at most universities and graduates who fail to secure employment lack the competencies to start own businesses. In response, Zhang and Wu (2004) emphasize the need to review tourism education curriculum to make it more market-oriented in order to meet industry's expectations and promote entrepreneurship. Therefore, tourism education requires comprehensive analysis to move away from the normal practice of producing graduates to occupy positions within tourism businesses.

In Ghana, research within the tourism industry shows that there is lack of empirical studies that evaluate tourism curriculum of universities to identify whether entrepreneurial modules are offered. For instance, research in Ghana by Owusu-Mintah (2014) focused on entrepreneurship practice among tourism graduates rather than evaluating tourism curriculum. This shows that there is dearth of first-hand evidence on the assessment of courses that aim at preparing entrepreneurially minded graduates and entrepreneurs for the thriving Ghanaian hospitality and tourism industry. This becomes more problematic because it is believed that there remains a considerable gap between what educational institutions offer compared to actual needs of the hospitality and tourism industry.

Purpose of the Study

The purpose of this study is to evaluate hospitality entrepreneurial modules offered in tourism programs in Ghanaian tertiary institutions. Specifically, it assesses the curriculum of Tourism in two tertiary institutions in Ghana that offers entrepreneurship within the Tourism program. This present research is significant because it highlights the need to integrate hospitality technical skills into tourism education to create a culture that will enhance the growth of entrepreneurship within the tourism industry as well as create a synergy between theory and practice in the industry.

Literature Review

In the last few decades, tourism education has expanded substantially due to worldwide increase in the number of schools, student population and diversity of programs (Shen, Luo and Lam, 2015). Many tertiary institutions all over the world offer different courses within hospitality and tourism while several travel agencies offer short-term courses to train upcoming candidates (Fidgeon, 2011; Batra, 2016). In view of this, tourism education has been defined as

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the academic and professional development and preparation of human resources for the hospitality and tourism industry (Malihah, Puspito and Setiyorini, 2014; Kunwar, 2018). Tourism education is crucial to the industry because it contributes significantly to customer satisfaction as well as competitiveness of tourism businesses (Bashar and Alsaleh, 2013; Romanova et al., 2016).

According to Airey (2008) the evolution of tourism education can be categorized into four stages within 40 years of its existence. The stages are industrial stage (courses focused on the practice and operations of the industry); fragmented stage (characterized by uncertainty about curriculum); benchmark stage (courses extending beyond the industry to include role of tourism in communities and environments); and mature stage (focusing on independent thinking and stimulating intellectual curiosity). Furthermore, Dale and Robinson (2001) opine that tourism education provides three types of degrees namely: generic degrees, functional degrees and market/product-based degrees.

Despite the advancement of tourism education which is evidenced by the growing number of degree and diploma courses, it has largely been criticized for overly focusing of theoretical training. Pavesic (1993) stated that hospitality and tourism management education has been criticized for being very theoretical or industry focused. Similarly, Chen et al (2011) identified that there are huge concerns that tourism education emphasizes extensively on theoretical knowledge, while practical skills and practices are largely ignored. Also, Lam and Xiao (2000) observed that little attention is given to practical training and skill development in tourism education whereas conceptual ideas are highlighted.

Specifically, the Asian Development Bank (2019) argued that tourism education lacks practical specializations and dimensions of core hospitality such as food and beverages management, housekeeping management, etc. Shen, Luo and Lam (2015) revealed that in China, although tourism curriculum design involved practical training, such trainings contributed little because they only happened in the last year of studies. In Turkey, Yeşiltaş, Öztürk and Hemmington (2010) identified that tourism curriculum lacked coordination and collaboration with industry because it failed to meet industry needs and expectations.

As a result, Djurasevic and Kavaric (2016) contend that introduction of practical training into tourism educational curriculum is needed at all levels. Likewise, Tribe (2002) emphasized that tourism education and training urgently require integration of academic and vocational aspects into curriculum to train 'philosophic practitioners. The fundamental idea of 'philosophic practitioners' is that tourism education should provide both theoretical and practical education to equip students with abilities to reflect and act. Also, Shen, Luo and Lam (2015) reiterate that combining theory and practical training better prepares students to apply acquired classroom skills to the working environment.

The outcome of such curriculum improvement is that tourism students become skilled in real world competencies to meet the changing needs of employers, new technologies, and alternative forms of service (Sakharchuk, Khanbabaeva and Daitov, 2013). A typical example of such alternative forms of service is that tourism students can

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venture into personal business activities within the industry based on acquired practical skills and specializations to become 'hospitality entrepreneurs' in the thriving industry (Ahmad, 2015; Deale, 2016).

Methodology

The study was conducted at two (2) tertiary institutions A and B in Ghana, West Africa. The study evaluated the curriculum of Tourism programs run at bachelor's level of the universities to determine the core hospitality modules included in the curriculum. Descriptive research design was adopted for the study and according to Burns and Bush (2010) descriptive research focuses on the present situation of the phenomenon under investigation by simply attempting to identify, determine and describe the occurrence. The study population consisted of all students pursuing Tourism program at the two universities. Out of this population, 20 students were purposively sampled and interviewed for the study. Structured interview technique was used as tool for data collection and similar to (Ahmad, 2015) the interview questions focused on assessing students' perception regarding the practical nature of the Tourism curriculum, overall assessment of the curriculum and preparedness for career prospects. Data was analyzed using Statistical Package for Social Sciences (SPSS) Version 20 whereas web-based content analysis was employed for reviewing Tourism curriculum of the two universities.

Results and Discussion

The study addressed three prominent questions which are related to assessment of Tourism curriculum, students' perception about practical nature of Tourism curriculum and challenges faced by students in tourism education.

Tourism Curriculum of University A and B

At University A, the Tourism program which is a 4-year Degree program focuses on the following modules: Tourism and Recreation, Communication Skills, Management in Tourism, Culture and Tourism, Marketing Planning, Tour Guiding, Eco-Tourism and Park Management. The findings therefore show that at University A, there are no practical hospitality courses included in the curriculum.

At the University B, the Tourism program which is also a 4-year Degree program emphasizes on the following modules: Tourism and Recreation, Culture and Cultural Practice, Communication Skills, Tourism Resources of Ghana, Tourism Entrepreneurship, Map Reading, Events Management, Tour Guiding, Eco-Tourism, Bio-Tourism and Facilities Management. This signifies that at University B a small number of courses / modules that enhance practical skills are given some level of attention. These courses are Tourism Entrepreneurship, Events Management and Facilities Management.

The findings from the Tourism curriculum review at University A and University B revealed that Tourism curriculum (especially at University B) focused on theoretical training, while little or no attention is given to practical courses or core hospitality modules that can foster entrepreneurship after school. This finding is confirmed by Lam and Xiao (2000) who observed that little attention is given to practical training and skill development in tourism education

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whereas conceptual ideas are highlighted. In addition, the finding is similar to Chen et al (2011) when they identified that tourism education emphasizes extensively on theoretical knowledge, while practical skills and practices are largely ignored.

Students' Perception about Practical Nature of Tourism Curriculum

The study assessed the perception of students concerning the practical nature of the Tourism curriculum to ascertain general acceptance among students. Out of the 20 students that were interviewed, 30% disagree that the Tourism curriculum was practical whereas 25% strongly disagree. Moreover, 15% each strongly agree, agree or remained neutral about the practical nature of the Tourism curriculum.

The responses are shown in Table 1.

Table 1 Students' Perception about Practical Nature of Tourism Curriculum

Practical Nature of Tourism Curriculum	Frequency	Percentage
Strongly Agree	3	15
Agree	3	15
Neutral	3	15
Disagree	6	30
Strongly Disagree	5	25
Total	**20**	**100**

Source: Field Survey, 2020

The findings from the assessment of students' perception concerning practical nature of Tourism curriculum demonstrate that majority of students (55%) disagree or strongly disagree that the Tourism curriculum was practical enough to enhance their training in core hospitality which can make them venture into small tourism businesses in future. This finding is in line with Ezeuduji, Chibe and Nyathela (2017) assertion that hospitality students in South Africa had concerns relating to inadequacy of hospitality curriculum to address their study needs and prospects for the future.

Challenges Faced By Students in Tourism Education

The study also attempted to identify the challenges that confront students in tourism education at the two universities. Out of 20 students interviewed, 45% identified limited practical training opportunities as the major challenge faced in tourism education. In addition, 30% mentioned lack of specialization as the main challenge whereas the remaining 25% stated inadequate collaboration between education and enterprise. The responses are depicted in Table 2.

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The research found that the leading challenge faced by tourism students is limited practical training opportunities. This is supported by Akoglan-Kozak (2009) and Asian Development Bank (2019) who identified that lack of practical skill development is a challenge encountered by students studying tourism and hospitality.

Table 2 Challenges Faced By Students in Tourism Education

Challenges Faced by Students in Tourism Education	**Frequency**	**Percentage**
Lack of Specialization	6	30
Inadequate Collaboration between Education and Enterprise	5	25
Limited Practical Training Opportunities	9	45
Total	**20**	**100**

Source: Field Survey, 2019

CONCLUSION AND RECOMMENDATIONS

This research basically assessed hospitality entrepreneurial modules offered in Tourism programs in Ghanaian tertiary institutions. Specifically, the curriculum of Tourism programs of two traditional Universities were assessed to determine the core hospitality modules included in the curriculum. The drawn conclusion from the research is that curriculum for the two universities focused more on theoretical training and devote little or no attention to practical skill development. This means that core hospitality courses that can inspire entrepreneurship like food and beverages management, front office management, and housekeeping management remain absent from Tourism curriculum of the two tertiary institutions in Ghana. As a result, tourism education must incorporate courses that develop the skills of students so they can possibly start small businesses within the industry as entrepreneurs.

Therefore, in relation to the findings of the study, the following recommendations are made.

- It is recommended that Tourism curriculum at the various universities is reviewed to include core hospitality courses like food and beverages, front office, housekeeping management, and event planning and management. This is essential in tourism education because it will foster skill development and entrepreneurial mindset among tourism students.
- Also, tourism education should focus more on practical training and offer applied opportunities to students to further develop skills and competencies for future endeavours.

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- Lastly, Tourism education should collaborate more with enterprise to ensure alignment between theory and practice.

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Kenya as an East African destination For German Ecotourists:

The development from a charitable organization to a niche market using the example of Mully Children's Family

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Abstract

In times of climatic or political grievances that affect not only human life worldwide, but also the environment and the economic situation of a country, a change in the way of thinking about tourism is beginning and the sector of ecotourism is also becoming increasingly important in Germany. The applicability of this form of tourism in the East African destination Kenya in the form of a travel package that is both partly unique and can be designed individually describes the subject matter of this elaboration and is illustrated using the example of the charitable organization Mully Children's Family and the related registered tourism company, MCF Africa Safaris. The underlying research aims to determine how to transform the organisation's own tree planting initiative into a niche tourist market and how this must be geared to gain the interest of the German eco-tourist. Based on the evaluation of the research results, there is high potential, which is dedicated to the implementation of a form of travel consisting of the active support of the named charity and its initiative as well as individually selectable holiday activities in the target market Kenya. As a result, there are basic prerequisites, the consideration of which is essential for the successful integration of the so-called niche market tree planting and the branch-specific nature of ecotourism in the Kenyan travel market.

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1. Introduction

The desire to get to know previously unprecedented destinations, including their cultural peculiarities, contributes to factors such as the personal need for unforgettable experiences or the desire for a certain feeling of freedom and relaxation, to the increasing willingness to travel and dedicates an enormous importance to the everyday life of everyone. The German population, in particular, is known as a travel-loving nation with regards to the number of trips, the intensity and the amount of expenditure, whose preferred destinations often go far beyond their own national borders (Reinhardt, 2020, pp. 8-14). Some of the preferred destinations of the German travel population are located in the developing and emerging countries worldwide and annually host 11 million German citizens (Federal Ministry for Economic Cooperation and Development, oJ). In order to benefit from the emerging interest in travel, more and more developing countries, including large parts of the Africa, are focusing their economic activity on the tourism sector. However, they also understand the consequences of advancing global warming and effects, not only on nature, but also on the life of the residents to an ever-increasing extent (Human Rights Watch, 2015).

In times when environmental disasters of all kinds determine the daily headlines of the international media, there is a change in the way of thinking of the population and causes the interest in change to become increasingly important and sustainability considerations are taking over everyday life of many. In order to make a personal contribution to the protection of the given resources, it is usually limited to the immediate vicinity and actions such as the acquisition of proven regional and fair/bio manufactured products or the transportation by public transport, are adapted. These behaviours can be seen as a first step towards long-term improvement, but if possible, not as a solution that secures the global situation and the economic sectors based on it. Contrary to this need to integrate the sustainability aspect and the increasing interest in travel to developing and emerging countries, (Christie, et Al. 2013) (Pop, 2014), there is insufficient research on the willingness of the German ecologically interested population and their views on active support during the holiday trip, which both preserves and improves the natural environment resources, as well as the well-being of the locals and relates to the East African country of Kenya. To ascertain this, raising awareness of the enormous need for responsible tourism and raising awareness of sustainable travel among the local population and international travellers are indispensable in order to establish a tourism-oriented organization that is aimed at improving damaged ecosystems for this niche market. Accordingly, the change in the tourism industry in the form of a complete waiver of travel does not clarify the relevance of this elaboration, but rather the change implementation.

1.2. Research Question and Objectives

Is there a market in Germany for Ecotourism and a form of sustainable travel (Balas & Strasdas, 2018), offered by a Kenyan NGO, MCF Africa Safaris?

The objectives of the study are the following:

1. Are there Germans, who see themselves as Eco-friendly, be willing to book Eco-tourism offerings to Kenya with and through a Kenyan NGO?
2. Which platform or travel booking method is most common for the German Eco-traveller?

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3. How much money would they be willing to spend on a trip to Kenya which includes Eco-elements?
4. What kinds of lodging are preferred?
5. Is tree-planting as a climate-change activity attractive for German Eco-travellers and which other Eco-activities could be attractive?

2. Ecotourism

Ecotourism, a form of sustainable travel (Balas & Strasdas, 2018), unites numerous perspectives that have changed over the years. A definition of Ecotourism for the purpose of this study is explored below. The UNWTO, the United Nations' World Tourism Organization, defined the concept of ecotourism as part of an analysis of the German ecotourism market in 2001 as a type of travel that has five different elements. It is a tourism close to nature, the main motives for which are based on observing and appreciating nature and the traditions cultivated in the destinations. This definition also includes the continuous clarification of the conceptual content and the minimization of negative influences on the ecological and social environment. This type of interpretation also provides for the organization of trips for small groups, which can be created and carried out both by specialized and local organizers, as well as by companies with a foreign headquarters and an ecotourism specialist area. Likewise, according to the definition of the UNWTO, ecotourism stands for the protection of natural areas, which among other things deals with the creation of jobs and income opportunities for the local population as well as the increased awareness of the conservation of natural resources (World Tourism Organization, 2001, pp. 4-5). The International Ecotourism Society describes ecotourism again as a responsible travel to near-natural areas, which on the one hand preserves the environment and safeguards the well-being of the locals, and on the other hand the educational work on the contents of this form of travel, which both in the local population and at must be provided to those willing to travel themselves (The International Ecotourism Society, oJ). In view of these varying definitions, the present scientific work is based on the interpretation that the practice of ecotourism is a special form of travel that focuses on the responsible use of the environment and local people and pursues the goal of nature conservation and the guarantee of social well-being within the holiday destination.

2.1 Characteristic of German Ecotourism

The elementary question of a suitable target group for the establishment of a niche market dedicated to ecotourism is based on the analysis of two essential factors: the interest in the design of sustainable tourism and the level of willingness to invest during a vacation trip. In a global comparison, Germany with a total of $ 94 billion is the country with the third highest tourism expenditure (Statista, 2019) and is also considered to be a society with a huge commitment to sustainable activities in the tourism sector (The Economic Intelligence Unit Limited, 2017). In 2014, a study by the German Research Foundation for Vacation and Travel dealt with the need for sustainable vacation travel and provides an insight into the characteristics of the German eco-tourist (FUR Research Foundation for Vacation and Travel, 2014, p. VI). This shows that 61 percent of the German population aged 14 and over would like to increasingly use travel based on ecological and social compatibility for their own vacation plans, but there are

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hurdles to this approach, such as the increased financial outlay and/or the lack of sustainable offers at the desired destination, which hampers the tourists' ability to be as sustainable as desired (FUR Research Association Vacation and Travel eV, 2014, p. 8). As described in the underlying study, the German ecotourist can be found in all social demographic groups, whereby he mostly has an increased level of education and an above-average monthly income, is predominantly between the ages of 50 and 69 and often lives in a partnership. Factors such as relaxation and the distance from everyday events, in addition to the existence of an intact climate and the interest in being in touch with nature, represent the holiday motives of German ecotourists (FUR Research Association for Holidays and Travel, 2014, pp. 19-24). In relation to the travel behaviour of the general proportion of people interested in travel in Germany, there were only slight deviations in terms of organization, season, means of transportation, choice of accommodation and holiday destination. The summer months are also the main travel season for this target group and are carried out using means of transportation such as your own car (46%) or plane (40%). A holiday destination in a non-European country (72%) or the Mediterranean region (38%) is preferred in combination with a hotel (43%) or an apartment (24%), as the chosen form of accommodation during a trip (FUR Research Association Vacation and Travel eV, 2014, p. 31). Only the amount of the expenses and the duration of the trip offer an opportunity to differentiate, because the German citizen interested in ecology travelled an average of 14.3 days and invested a total of 1,029.00 € per person (FUR Research Association Vacation and Travel eV, 2014, p. 32). On the basis of the classifications received, it can be determined that there are no serious differences in holiday behaviour between the general German population and ecologically interested travellers, but the factor of sustainability, including all levels, is incorporated into the type of holiday arrangement of the German ecotourist at the destination.

2.2 Definition tree-planting

Environmental and climate protection is of high importance for a large part of the German population. This assertion emerges from a study by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, which is part of the German government, and also clarifies that this importance has increased in recent years. Furthermore, it is shown in the course of this that the people involved in the survey are concerned about the global environmental status and that the protection of natural resources also corresponds to an essential measure for dealing with future issues such as the prosperity of the country (Federal Ministry for the Environment, Nature Conservation and nuclear safety, 2019, p. 9). This is followed by the fact that 67 percent of a target audience from the age of 18 would consider using financially settled offers that serve the purpose of reducing personal CO^2 emissions. 11 percent of the participants have already supported an action of this type, which may include planting trees, for example (Statista, 2019). Given the increasing importance of the comprehensive sustainability aspect and personal responsibility in this regard, the formation of numerous organizations and corporate concepts, such as the global children's initiative plant for the planet (Plant-for-the-Planet Foundation, oJ) or in Germany's Internet search engine Ecosia (Ecosia, oJ), which pursues tree planting as an executive instrument to curb progressive climate change, is justified. This also includes, for example, the range of activities of the Christian, charitable organization Mully Children's Family, which enables thousands of children in need of help through rescue and holistic personal strengthening to take up a sincere place in society again (Mully Children's Family, oJ). The founder's vision was to share his family, financial and personal

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assets with destitute and marginalized children, in order to provide not only their daily needs, but also provide educational opportunities and to support in them in their personal development. Dr Charles Mulli and his wife Esther set up the foundation in the Machokos County, Kenya (Kenya Citizen TV, 2014). The basis for his vision realization is eight different projects, which include, in addition to the reintegration of the children, the overarching points of education, health and promotion of talent and the creation of income opportunities (Mully Children's Family, o.J.).

The climatic conditions in Kenya (Federal Ministry for Economic Development and Cooperation, o.J.), present the environment and its inhabitants with possibly insurmountable complexities (Böll, 2018). As a way of alleviating these challenges, the MCF organization has integrated an initiative to regenerate and maintain the environment into the core elements of its work, which serves the purpose of creating a long-term and safe living environment for vulnerable children and the community. In addition to projects for the generation, use and promotion of renewable energies and the conservation of water, the MCF-led measures for planting trees within the Ndalani and Yatta locations, which are characterized by a dry and semi-dry climate, are a key component of the ecological mission (Mully Children's family, no year). Dr. Charles Mulli, the founder of the organization, has devoted great importance to the planting of drought-resistant and country-specific species, the growth of which also requires little care, from the very beginning. The commitment shown resulted in a microclimate change based on the cross-area cultivation. This is evident both in the form of a temperature drop compared to the surrounding regions, as well as in the transformation of the once dry and non-fertile land into a geographical area with lush vegetation and the possibility of agricultural use. The transfer of knowledge about the need to adapt measures that promote a positive impact on the ecological situation is also essential and is implemented within the scope of the tasks.

The aim of maintaining a high level of understanding for necessary ecological and climatic changes is the possibility of independent and practical participation in the planting of the natural good. With the initially exclusive support of the children residing at the MCF's locations and the people involved, the development of tree planting has become regular and with the participation of a large number of students, partners and the community in general. With regard to future developments, the aim is to ensure that all further trees planted are native to the regionally given soil culture, temperature and precipitation (or are compatible to climate change that has already taken place) which will build on the reforestation transformation already achieved (MCF Canada, 2012).

3. Tree-planting – a Niche Market for German Eco-Tourists

The complete integration and conversion of the initiative for planting trees carried out by Mully Children's Family serves the market of a tourist niche, which according to the high percentage of people living in Germany and who are interested in the factor of sustainability on vacation. traveller (57%) (Statista, 2020), may have extensive potential. Based on the given purpose of offering high-quality round trips for supporters of Mully Children’s Family the organization-related company name MCF Africa Safaris makes it easily recognized on the Kenyan tourism market as an income generating company for the NGO (MCF Africa Safaris, oJ). This together with the design of an eco-travel packages, consisting of active participation in tree planting carried out and organized by MCF as well as individually selectable experiences within the East African Republic of Kenya is the direction the MCF Africa Safaris wishes to go. This proves to be expedient in order to grant an increase in the international attention potential for tree plantings

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and to build on the increasing reputation of Kenya as a versatile and attractive travel destination (Republic of Kenya, 2017).

The package is characterized by flexibly selected 1. travel times, 2. individually preferred activities within the holiday destination Kenya, and 3. with a 2-4 day stay at MCF's locations in Yatta and Ndalani. The chosen period of minimum two days is to ensure that the tourist can fully experience the organizational pillars and impact. According to this concept, a visit to the institution proves to be the fundamental element of this trip and combines four essential aspects with one another, which the German ecotourist strives to fulfil. The factor of authenticity in the context of a tourist-related international experience is illustrated, among other things, by its guarantee with regard to the type of accommodation, the catering or the unrestricted integration of travellers into the everyday life of the locals. The travel package aimed at establishing offers the guests with rooms that were originally built for the purpose of accommodating participants in conferences in the areas mentioned (MCF Canada, 2012), a place of accommodation and in connection with getting to know regional-typical Dining, the foundation for an intensive experience of the institution. Based on MCF's mission, the rescued children by experiencing values such as parental love and Christian faith as well as the involvement in activities related to leisure and further education, as well as providing support, the best possible basis for future reunification. Favouring the structure of society (Mully Children's Family, oJ), for example, experiencing Kenyan choirs and singing up close or the warmth of the children is another element that enables people to be authentically perceived in their local structures and cultures. The travel package, which is carried out in small groups of a maximum of five people, is supplemented by a guide who is available during the stay. In the visits to the locations in Yatta and Ndalani, which are integrated during the stay and accompanied by the guide, together with their educational facilities and areas dedicated to agricultural use, provide an insight into the extensive and locally performed services and create space for receiving further information. The resulting ability for the traveller to expand the range of knowledge not only represents a component of the definition of ecotourism, but also ensures the creation of a contribution to the well-being of the locals. This confirms the resulting jobs and the associated opportunity for professional independence. In particular, the commitment to the protection and preservation of the environment and the continuation of actions that can mitigate the effects of global warming are important within the framework of ecotourism and are guaranteed by planting trees, the crucial element of this form of travel. Together with the children and young adults living at the organizational locations, earth depressions are planted with tree seedlings. Interacting with the children not only offers travellers the opportunity to get in touch and the associated exchange, but also serves to gain insight into the enormous importance of this action, its influence on the life of the inhabitants of this region and the changes already achieved (MCF Canada, 2012). The range of tourist services is complemented by the level of personally preferred experiences, which in turn fulfill the aspects of flexibility and individuality. The range of activities here ranges from the experience of a safari, a holiday in coastal destinations or the discovery of cultural offers. MCF Africa Safari's existing network of contacts to nationwide residences as well as operating airlines and companies, whose trade spectrum is dedicated to experience-oriented leisure activities during a trip, guarantees the adaptation to personal needs and the selection of service providers who meet your own criteria. The guide, who acts as a tour guide, will also accompany the tourists during the extended stay within the destination Kenya and based on his skills, guarantee a carefree travel route. By means of a modular system integrated

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on the website of the Kenyan company name, the potential German customer is given the opportunity to design the trip according to personal preferences. Exemplary criteria are the number of people, the desired travel period, the type of accommodation or the desired activities that would like to be carried out apart from the essential part of planting trees. As a follow-up step, the selected request points are sent to MCF Africa Safaris in the form of a non-binding inquiry and worked out to meet the needs. It should be noted in the context of the design of the offer that despite the activities chosen and their desired sequence before the start of the trip, there is no rough timing. The factor of flexibility arises and enables a corresponding adjustment of the travel package to personal preferences or given situations. Based on the almost uniformly high significance value to which the target group of German ecologically interested people assigns both individually organized (54%) and pre-planned vacation trips (55%) (FUR Research Association Vacation and Travel eV, 2014, p. 32), the range of tourist services creates a combination of both forms of organization and enables a comprehensive approach to the group of people who prefer responsible travel. Both the conclusion of the travel booking and the execution of the service at the holiday destination Kenya are carried out by the MCF Africa Safaris company name. The willingness of the German ecotourist to undertake a flight of several hours to a distant destination, irrespective of the associated and negative effects on the environment, should be seen as a prerequisite for using the described form of travel. The value of making a personal contribution to the destination-related living conditions resulting from the active participation in the charitable initiative of tree planting is of increased relevance.

4. Methodology

Both the use of questionnaires and an expert assessment are considered as target-oriented research elements within this scientific elaboration. The choice of the German population as the target group of this opinion survey is based not only on the designation as a growing and travel-friendly nation (Reinhardt, 2019), but also on the increasingly increasing level of interest that is devoted to the extensive topics of sustainability. Furthermore, the selection is due to the need for a compatible adjustment to personal vacation planning (Statista, 2020). Likewise, the use of the destination Kenya as a relevant travel area within the framework of this basic opinion research is based on the sector of tourism, which is gaining importance from the point of view of the local economy and the international and willing society, and the knowledge regarding the need for a considerate handling of the natural treasures typical of the country. There were three questionnaires, and one expert interview, each of which was entitled "Development of a niche market for German ecotourists in the East African destination of Kenya". The questionnaires were to determine the needs and willingness of the German population for a sustainability-related, tourism-related travel packages. The target groups for the questionnaires mentioned are three actors that are essential and influential for the tourism industry, which include the travel-loving individual and the travel agency responsible for booking the holiday, as well as tourism and sustainability-related organizations. In the context of addressing individuals and travel agencies based in Germany, opinion research, each carried out with ten questions, is characterized by demographic questions, which aim to assess the personal background of the survey participants, as well as their own person or institution-related and essential factors for the implementation of a tourist niche market of this kind. The opinion-forming measure is completed by the integration of international tourism and environmental organizations. Their information, which is

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based on five questions, is intended to provide information, among other things, on whether a steadily increasing demand for travel behaviour based on the principles of ecotourism is perceived by the German and English-speaking organizations and intends to analyse the scope of intensity by the selected target group can be found. The questionnaire was put on the online platform SurveyMonkey for a period of at least two months. An electronic letter consisting of an enclosed brief description of the travel package and eight topic-specific questions, which are directed to the organization Mully Children's Family and the executive company MCF Africa Safaris, was the final research element. The goal of this opinion survey is to be seen in the expertise about the further development possibilities of the travel package.

5. Research Results

5.1 Individuals

The questionnaire was completed by 90 participants. The majority were female (81.11%) and are between 19 and 25 years old (82.22%). Regardless of the individually pursued tourist orientation, more than half of the participants (59.55%) regard traveling to remote and exotic destinations as an uncompromising option and is dependent on the existence of appropriate security standards (41.57 %) and quality levels applicable in Europe (13.48%). According to the opinion poll, the channels of internet-based holiday providers (86.52%), traditional travel agencies (48.31%) or the direct contact of service providers (41.57%) have so far been based on the information provided by the respondents.) is preferred as the form of booking. A financial commitment of 1,500.00 to 2,000.00 euros reflects for over half (55.68%) of the answerers, followed by the price range of 2,000.00 to 2,5000.00 euros (30.68%) maximum willingness for a 14-day trip to an exotic destination. In return, just over five percent (5.68%) of the opinion sellers are willing to invest a sum that exceeds the value of 3,000 euros. The predominantly preferred form of accommodation is based on the usual standards of the people participating in the survey, with accommodations with an award of four stars (53.93%), followed by three stars (42.70%). The hotels of the highest class (16.85%) are of least interest in the course of the categories available for selection. From the perspective of around 55 percent of the opinion sellers, the sustainability factor is an important aspect that decides on the choice of accommodation. Based on the integrated research, which is devoted to the interest in active participation in charitable projects during a vacation trip, as shown in Fig. 1, the manifestations are rather important (38.64%) or even unimportant (35.23%) as the dominant readiness values for support. As shown in Figure 2, approximately 74 percent of respondents perceive tree planting as a possible form of active participation in charities within the target destination as an activity that they would consider personally. The description of the desired travel package resulted in the desire for activities such as the experience of nature (91.91%), participation in a safari (80.90%) or the implementation of sporting activities in the form of hikes or tours the mountain bike (59.55%).

Fig. 1: Willingness to participate in charitable projects

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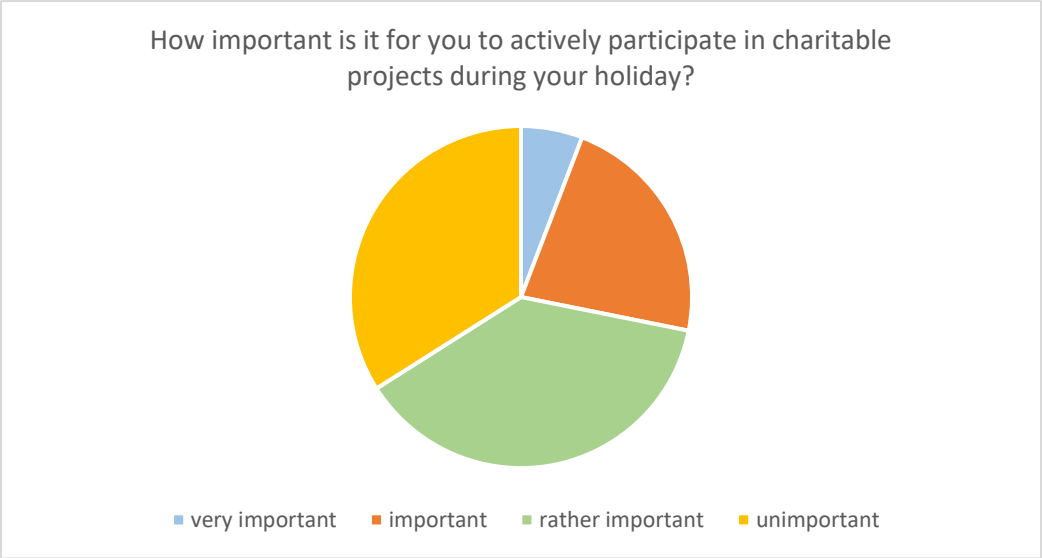

Fig. 2: Assessment of the willingness to implement tree planting

5.2 Travel Agencies

To get an understanding of potential of travel agency cooperation 6 were sent “agency questionnaires”. In addition to the overarching theme of ecotourism, 4 of the participants confirmed cooperation with travel agencies whose services are carried out under ecologically sustainable conditions and relate to the target market Kenya. The view of an increased interest in ecotourism was agreed to by about half of the respondents (50%). The others answered as not applicable (33.33%) or applicable (16.67%). Based on a question devoted to the assessment of the customer-specific willingness to participate in the activity of tree planting, the exercise of which pursues the goal of maintaining or improving the sustainability levels within the region of Sub-Saharan Africa, as can be seen from Fig. 3, estimates half of all Participating travel agencies surveyed the interest in participation as low and only about 16 percent

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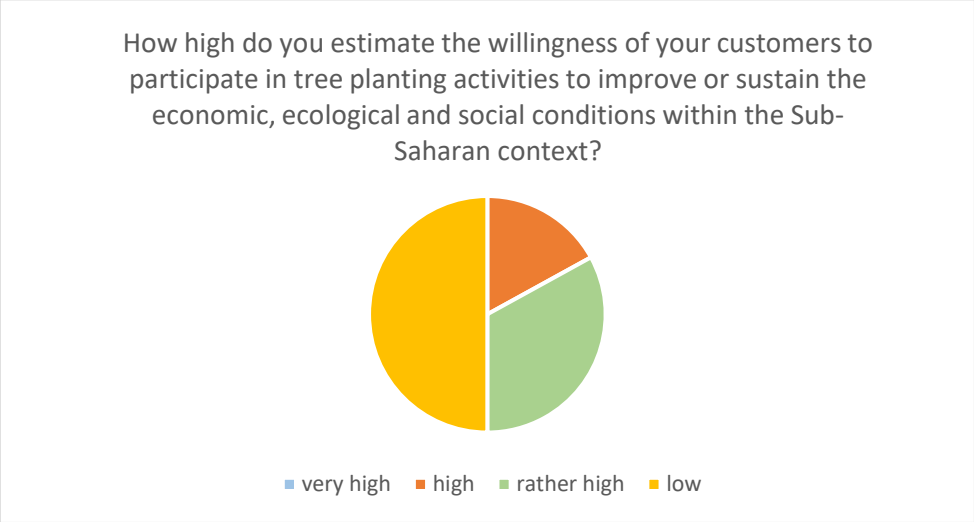
(16.67%) rate it as high. The majority (50%) dedicate a small amount of potential to the offer, followed by how the final exploration based on the personally assigned level of potential that a vacation package reveals this form in order to become an essential part of the international travel market in the future the graded classification of the high (33.33%) and very high potential (16.67%) (Mertl, development of a niche market for German ecotourists in the East African destination Kenya, questionnaire ecotourism in Kenya, 2020).

Fig. 3: Classification of willingness to participate by travel agency end customers



5.3 Organizations

8 English speaking organizations participated in the questionnaires. In view of the results of addressing the organizations located in English-speaking countries, around 60 percent (62.50%) of these institutions agree without any reservations that an increasing growing interest in eco-touristic travel behaviour is perceived. In relation to these results, counterparts located in Germany reveal an unqualified agreement on the existence of an interest in the principles of ecotourism, which is encouraging. The majority of the English-speaking answerers (62.50%) are in favour of the understanding of the population for the need for responsible travel to require the provision of important information and only 25 percent of the participating organizations fully agree with the claim. The institutions based in Germany also agree with this assessment and classify its necessity as fully true (50%) and true (50%). As can also be seen from the results of the English-language survey, over 60 percent (62.50%) of those who expressed their opinion spoke out in favour of excluding long-distance travel within the scope of ecotourism. Only 12.50 percent disagree with the assertion and consider traveling to distant destinations to be non-adaptable under the principles of this type of tourism. The acceptance of the German population towards the desired vacation package is rated as rather high by the English-speaking organizations, whereas the German counterparts, as can be seen in Fig. 4,

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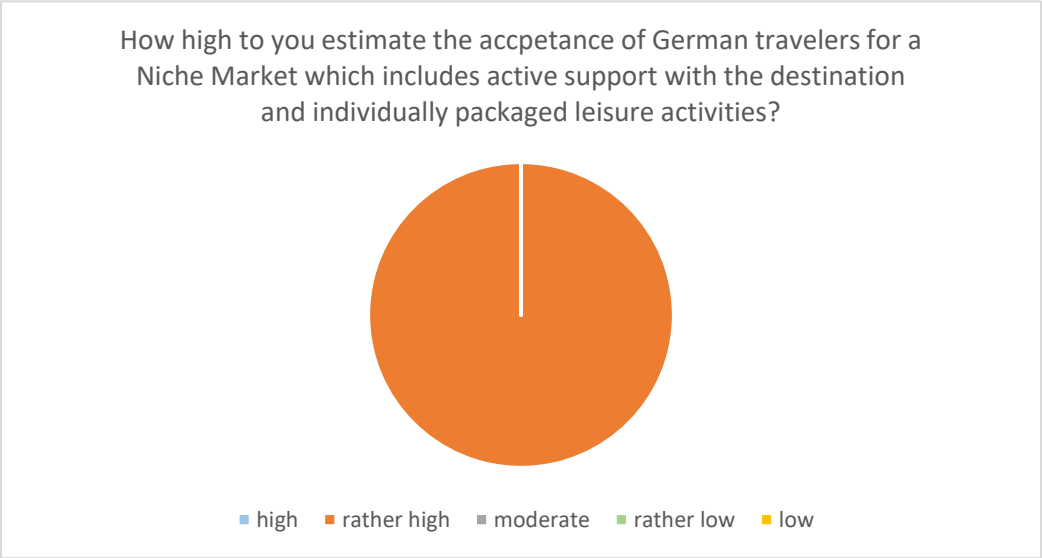
unanimously have a rather high (100%) acceptance on the part of the tourist niche market. dedicated population (Mertl, development of a niche market for German ecotourists in the East African destination Kenya, questionnaire ecotourism in Kenya, 2020).

Fig. 4: Assessment of the acceptance of the German travel population



5. 4 Interview of Mully Children's Family and MCF Africa Safaris

Based on the question of the potential of the niche tourist market, the founder of the organization Dr. Charles Mulli, stated that it has a high potential in the travel segment, however, the choice of the right marketing concept is to be regarded as crucial for further offer development. With regard to the exploration of a possibly growing level of interest on the part of the visitors for the tree-planting initiative, the enthusiasm of the guests involved, whose number has increased since then, is particularly emphasized. Dr. Mulli also replies that the stay of German students at the IUBH International University almost four years ago enabled a change in the way the market potential is viewed and confirms the decision to develop tree planting into a comprehensive range. In view of the suitability of the booking process and packages, Dr Mulli confirmed that the packages can be individually put together which would ensure that the German eco-tourist has an unforgettable and individually compiled offer. As can be seen from the answer with reference to the attached brief description of the travel package and the possible range of offers, he believes that the local (German) population knows the booking behaviour typical of the country and also the source market Germany better than the Kenyan population does and therefore should be involved.

Based on this assessment and the existing experience in planning trips, he reveals that the organization MCF and the company name MCF Africa Safaris undoubtedly have the ability to offer unforgettable and individually designed stays. The use of a modular system for determination of the consumer-related travel criteria is considered due to years of use within the organization and also with regard to the implementation of the desired form of vacation. The

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creation of a network that informs the visitors involved in the activity of tree planting even after their stay about the development of the tree and the resulting improvement in the environment could, according to the survey results, create a department that will ensure supply with regular, written and graphic reports. In conclusion, Dr. Charles Mulli implemented the travel package into the existing range and also provides information that the basic elements of this offer have already been given and that they are very interested in finalizing it through an MCF Africa Safaris office located in Germany (C. Mulli, founder of the organization Mully Children's Family, email from March 6th, 2020).

6. Findings

Tourism and environmental organizations that appear in the form of blogs or comparable institutions on the German and English-speaking market recognize ecotourism as a form of travel that reconciles the interests and needs of a constantly expanding group of needs. The movement evident on the basis of the research results obtained presumably, in connection with the increasing striving for responsible travel behaviour, justifies the creation of booking platforms that follow the principles of ecotourism. In view of the recognizable expansion of this sector and the positive assessment of the German tourism organizations, the realization and intentional placement of the travel package on the German market should be seen as a comprehensive opportunity with regard to future tourism development. As the evaluation also shows, ecotourism does not rule out long-distance travel and, under the condition of being a remote destination, dedicates increased potential to Kenya. Based on this, the assumption can be made that the receipt of essential information that sets out the individual objects and intentions of ecotourism is of enormous importance, especially for individuals interested in sustainability but not yet tested with regard to a vacation trip. The reduction of the often-prevailing false interpretation that ecotourism mainly relates to the aspect of nature and its preservation should be considered as an intended aim.

The German population willing to travel sees the institution of a travel agency as a preferred form of holiday booking even today. This entrepreneurial initiative recognizes the interest in responsible travel, which, despite the personal principles, shows distant destinations can still have ecologically positive elements. Regardless of the continuously growing market for this type of tourism, travel agencies consider the willingness of their end customers to participate in the activity of tree planting within the sub-Saharan Africa region as low. On the basis of this, the claim can be considered that it is preferred by the German-speaking population to use the services of a travel agency to book their tourist stay abroad and a trip that includes the active support of a charitable project at the destination is not yet known. The consumer preference is internet booking for travel via a website especially with a modular system. From the questionnaires with the travel agencies, it should be noted that direct face-to-face contact during the booking process is nevertheless of great importance for individuals.

On the basis of this, it would be recommended that MCF Africa Safaris, would offer their product through a local representation in Germany. This establishment could not only guarantee an increase in interest in participating in a stay abroad of this kind and the fulfilment of the needs of German ecotourists for a direct contact person, but also an expansion of the existing potential of the activity of tree planting. In order to access the result regarding the preferred internet booking, the German-speaking branch should not see itself as a form of the classic travel agency,

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but rather as a link between MCF Africa Safaris in Kenya and the desired target market of German ecotourists. The procedure-related adaptation of the booking procedure to a German-language website, which in cooperation with MCF Africa Safaris receives the inquiries received through the modular system to a needs-fulfilling offer, the travel booking is finalized by the conclusion and then handed over to the Kenyan company name for the execution of the holiday offer at the destination, can be considered as an exemplary approach in this regard. A German branch can not only facilitate communication between the ecologically interested traveller and MCF Africa Safaris, but also creates the feeling of increased trustworthiness. Sustainability certifications can help to expand this. The involvement of a German contact person can be seen as crucial to ensure that the domestic target group of ecotourists can be addressed, whereby the assessment of the country-specific booking behaviour and the needs of the German travel population are to be considered as sufficient factors.

Based on the high response from individuals in the age range of 19-25 years and the often-related use of social media, the focus on an internet-related marketing – especially social media – is recommended. In this regard, the use of contributions to tourism or environment-specific web blogs could be used. As a result of the analysis of the questionnaire, the factor of authenticity continues to influence the choice of accommodation and suggests that the ecologically interested individual traveller strives for contact with locals. In view of the research-related sale of choosing an exotic destination based on certain standards as a travel destination, the inclusion and further expansion of the East African Classification System applies, which create a uniform quality in the tourist and East African businesses Application and serves to ensure consumer satisfaction (Tourism Regulatory Authority, 2018), as advisable. In order to meet the need for the sustainability aspect in the choice of accommodation and the related presentations of the target group, the network needs to be expanded to include accommodation providers that meet the principles of ecotourism. The resonance in view of the preferred activity implementation during the further stay in the country has the opportunity to create a demand-oriented orientation for MCF Africa Safaris, on the basis of which the targeted acquisition of suitable and varying service providers can take place. In addition, the constant adaptation and renewal of the network is to be regarded as essential in order to provide a form of offer design that both attracts the attention of a single, ecologically interested person for a trip of this kind, and at the same time matches the personally existing requirements. Subsequently, the factor of individuality proves to be an important criterion when it comes to leisure activities tailored to the customer during the trip to Kenya. In order to preserve the individual aspect, it is only recommended to advertise the travel offer on booking platforms in the form of articles and note contact information as recommended, but not its offer for booking. The decisive factor here is not only the fact that the travel packages have already been prepared and are not customizable, but rather that the intended avoidance of a mass product is to be considered.

The high level of financial willingness to invest in a trip to an exotic destination in relation to the age of the participating prospects shows that an increased amount can be invested in an individual and unique experience. Regardless of the acceptance of German ecotourists for a travel package of this form, which is regarded as high on average by organizations, the support of charitable projects during a vacation is considered unimportant or rather important. In contrast to this view, the individual who is interested in responsible travel behaviour feels a high need for sustainability and shows willingness to plant trees. If these three insights are put in relation to each other, the

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hypothesis is revealed that participation in planting trees and the resulting feeling can be part of the change, an awareness of the contribution made personally to the well-being of the local population, the preservation of the environment and the potential impact on yourself. Setting up a network that informs the tree planting participants about the development of the planted trees after the trip through photographs or short letters about the added value that the trees offer the environment and its inhabitants can be an option awareness raising should be considered.

7. Limitations

In the context of this study, methodological features are given which have influenced the research process and its interpretation and are subsequently presented on the basis of the division into the three main stakeholders of individuals, travel agencies as well as environmental and tourism organizations. First of all, it should be emphasized that a research period of two months is not sufficient to enable the three existing levels to be addressed in addition to the sale of the opinion survey using the Internet-related platform SurveyMonkey. The responses of 90 individuals, six travel agencies and eight tourism and environmental organizations achieved within the specified period do not correspond to any representative value. In addition, they may not reflect the view of the entire German population or the proportion of the population that is committed to ecotourism. Within the framework of the above-mentioned levels, the survey was presented in topic-specific groups on social media, within the personal circle of acquaintances or on the basis of internet-based research and then electronically contacted. In addition, it should be noted that the survey was carried out under anonymous circumstances despite the fact that some of the demand groups in question were directly addressed. In addition, factors such as the personal travel experience in the East African Republic of Kenya, the stay and experience of the charitable organization Mully Children´s Family as well as participation in the activity of tree planting were included in the underlying assessment. The personal assessment of the organizational founder Dr. Charles Mulli, which was based on the transmission of an email, was also considered in the research. The research measure carried out can be seen as a basic form of probability determination and aims to obtain an assessment of the potential for success of a niche tourist market of this kind.

8. Conclusion

The integration of responsible travel behaviour into the previously cultivated habits during a stay abroad is gaining in importance and is also creating the demand group of ecotourists that is becoming increasingly popular in Germany. The study suggests that there is a market for the product of Eco-Tourism which combines tree-planting and supports charitable non-profit organizations such as Mully Children's Family. There is a growing market of millennials who not only wish to travel and have special experiences, and are willing to spend money on these experiences, especially if they know these experiences are also doing something for the environment and the communities they are visiting. There is a need in the market to have individualized elements that can be chosen. Preferred booking in the German Travel market is online, but the study suggests when traveling to exotic destinations like Kenya, cooperating and booking with a local agency is preferred.

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In view of the hypotheses raised at the beginning of this study, it can be recommended that the establishment of a branch of the MCF Africa Safaris in Germany, is to be regarded as essential in order to support the existing field of activity of the charitable organization.

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Market potential for eco-mountain bike tourism in Kenya

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Abstract

Kenya as a touristic destination is well known as an exotic country offering many different landscapes as well as the diversity of wildlife; this is typical for several African countries. To ensure a sustainable tourism development, different forms of tourism have to be considered. One of these forms could be eco-mountain bike cycling tours, as these tours are gaining in popularity, for example in Germany. The aim of this study was to obtain results regarding the market potential for mountain bike eco-tourism in Kenya. The up-and-coming tourism branch of mountain biking was examined in connection with the increasing demand for long-distance travel. The results of this study showed that mountain biking in exotic countries like Kenya has market potential in principle. However, it was also found that mountain biking alone is not a sufficient pull factor for tourists. The combination with other activities turned out to be promising. It was found that tourist packages that include mountain biking as an activity are perceived as attractive. Moreover, it was obtained that not only tourists who ride a mountain bike regularly are addressed as a target group. Even "regular" tourists find mountain biking an attractive (touristic) activity, especially in combination with game drives. Experts also assess the market potential for eco-mountain bike tourism as positive and find existing routes and accommodation attractive. The findings are giving indications for the possibilities to develop eco-mountain bike tourism as a touristic alternative and addition to existing touristic products.

Key words: Mountain Biking, Eco-Cycling, Kenya, Active Eco-Tourism in Emerging Tourism

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1. Introduction

Mountain biking as a part of adventure tourism has experienced a great growth in recent years. Mountain biking (MTB) is not only a growing trend in Germany but also one of the most demanded sports to German tourists. In addition, mountain biking together with normal cycling is the second most popular sport in Germany (especially to the 40-59-year-olds by 40 %) (Statista a. , 2016). Also, at 25 %, it is the second most popular outdoor activity among German day tourists after hiking (54 %) (Statista b. , 2019). In 2019 there was a total of around 15.26 million people over the age of fourteen in Germany who rode mountain bike. 3.74 million even did so regularly. This means that around 21 % of the over 14-year-olds ride a mountain bike at least occasionally (Statista c. , 2019). Additionally, in 2019 there were around 62 million cycling excursions by Germans on holiday alone (Hofmann & Böhler, 2020). Bavaria (26.8 %) and Baden-Wuerttemberg (21 %) attract the most active MTB-vacationers. More often than other German states, foreign destinations (20.5 %) are now chosen by mountain bikers for their MTB-holidays (Deutsche Initiative Mountain bike DIMB e.V., 2010, p.6). Long-distance travel is also becoming more popular among German tourists. While 10.2 % took long-distance trips in 2009, this figure rose by 7 % within 10 years to 17.2 % of all holiday trips (Reinhardt, 2020, p. 14-20). This means that every sixth holiday trip taken by Germans is now a long-distance trip. Especially couples, singles and young adults take long-distance trips. Also, the average travel expenses per day have risen by €21 over the past 10 years to a total of €125 per day for long-distance travels (see ibid.). As a result of both mountain biking and long-distance travel becoming increasingly popular the relevance of investigating the relationship between the two areas is developing.

The aim of this study was to gather information about the survey-participants, their travel behaviour and willingness to explore new mountain bike destinations. Furthermore, it is to be found out which requirements the participants have for a possible long-distance trip including MTB and whether already existing MTB-tracks as well as typical accommodation in Kenya are considered attractive. The study focuses on the socio-demographic characteristics of the participants, the preferred mountain bike target regions and the attractiveness of existing MTB-tracks in Kenya. In addition to the requirements of mountain bikers for such a tourist product, information and needs of the non-mountain bikers should also be obtained. Finally, the expert assessment should provide further results about the marketability of such a product. In addition to further content analyses, such as information procurement and booking platforms, the average expenditure for mountain biking holidays on the one hand and long-distance travel including transport on the other hand was also determined. In summary, the aim of this study was to investigate the market potential in Germany for MTB-tourism in exotic countries like Kenya.

The study is structured as follows: First, the methodological procedure is described in more detail. Then the results are presented and analysed. In the following chapter, two established best-practice examples are being presented and explained. The last chapter is the conclusion, in which the essential results of this work are presented in a condensed form and which provides a final review in the form of an outlook for further action. Recommendations are also developed and presented within the last chapter.

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2. Methodology

In principle, two types of data collection can be distinguished in empirical studies. These include qualitative and quantitative empirical research (Oehlrich, 2019, p. 84). While quantitative research aims particularly at achieving a large number of characteristic carriers on a high scale, qualitative research is characterized by the collection of qualitative data, for example through interviews (see ibid.). Due to the subjective character of qualitative research (e.g., through an interview), purely qualitative research in the sense of this paper could not be promoted. Moreover, the linking of both quantitative and qualitative approaches in the form of "mixed-method approaches" is becoming increasingly important (Wichmann, 2019, p. 2), which is why a mixed-method approach was used during this study. The central concern for qualitative research is to understand the phenomena in terms of the question "why" (Goldenstein, Hunoldt, & Walgenbach, 2018, p. 92). Qualitative research also serves to establish connections between constructs and to conceptualize and ultimately transfer these into theories (cf. ibid.). At the centre of qualitative research is the investigation of human experiences, i.e. the subjective experience of those affected (Ritschl, Weigl, & Stamm, 2016, p. 68). In contrast to a group interview or focus group interview, the expert interview is characterized by the high degree of expertise of the person(s) interviewed (Oehlrich, 2019, pp. 85-88). This was one of the main reasons why experts were interviewed in addition to tourists. Additionally, to get a deep insight in the according estimation of biking tour operators, destination managers and other mountain bike experts.

Since quantitative research usually has a deductive character, i.e., it tests theoretical causal relationships for their validity and transferability to the population on the basis of the research sample (Goldenstein, Hunoldt, & Walgenbach, 2018, p. 107), quantitative research in the form of a survey was chosen for a closer examination of the investigation of the central questions of this study. The survey is regarded as the most important method of primary data collection, which is why it was preferred to an observation or experiment as a basis (Oehlrich, 2019, p. 138). In addition, with little use of resources, larger line samples can be obtained than with other survey methods (Ritschl, Weigl, & Stamm, 2016, p. 161). According to this, the scientific knowledge that emerges from the survey aims to obtain generally valid statements for its area of activity (Ritschl, Weigl, & Stamm, 2016, p. 138). In order to do justice to the main criteria of quantitative research, the survey was drawn up taking into account objectivity, reliability and validity (see ibid.). The formulation of the question can be considered good if both semantics and pragmatics are understandable and plausible for the interviewee (Porst, 2019, p. 830). In order to meet this requirement, the questions were created according to the ten commandments of the question formulation according to Porst (2019). Accordingly, the questions must be easy, clear, comprehensible and not excessively long. Possible unclear terms were defined and explained to avoid ambiguity. Furthermore, care had to be taken not to influence the interviewee by asking specific questions and only to ask for already known information from the green-light interviewees. In order to investigate the attractiveness of MTB-tracks in exotic countries, the respondents were shown pictures with already existing tracks in Kenya. Furthermore, the participants were shown pictures of already existing accommodations but were not told yet which destination was involved in order to ensure the objectivity of the assessment. At a later stage it was explained that the pictures were taken in Kenya and Ghana respectively.

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Hypothetical questions were asked sporadically in order to obtain an assessment of possible activities and sports that are possibly considered interesting in countries like Kenya. In addition, insinuations as well as double stimuli and negations were avoided when formulating the questions. Furthermore, the temporal reference of the questions was always made clear. Thus, for example, it was also possible to ask for an outlook with the question of measures to be taken in case of a new foundation. Last but not least, the answer categories were chosen in such a way that they did not overlap (pp. 831-839). As far as possible, the questionnaire was provided with closed questions in order to make the results comparable and to be able to evaluate them measurably. Since the answer categories may not correspond to the respondents' own selection, an additional answer category with an open answer option was provided for some questions (see ibid.). The resulting semi-open questions offered themselves because possible answers were known, but further possibilities were expected (Ebster & Stalzer, 2017, p. 203). Because the population of the study was too large for a total survey, a random sample survey was conducted in which a part of the population was interviewed, the results of which were transferred to the corresponding population (Ebster & Stalzer, 2017, pp. 175-179). The aim of the sample selection is to make statements about the population, which is why representative samples are understood as a reduced image of the population (see ibid.). For this purpose, the sample had to be selected in such a way that it corresponded to the characteristic values of the population to a high degree, because representativeness is dependent on the proportional representation of the characteristics according to their distribution in the population (see ibid.). For this purpose, a probabilistic selection procedure of the sample, i.e., a sampling procedure based on the random principle, was used (Goldenstein, Hunoldt, & Walgenbach, 2018, pp. 123-124). A simple random selection was used, in which a "blind" selection was made from all the objects of investigation according to the statistical random principle (cf. ibid.). The division of the survey into active mountain bikers and non-mountain bikers provides a differentiated view on the assessments. The study thus provides information about the attractiveness of accommodations and MTB-tracks for both experienced mountain bikers and non-mountain bikers, which can also represent a great potential. The survey was spread over the German Alpine Association, Mountain bike Tourism Forum and university networks. The expert survey was conducted at the MTB-Tourism Congress 2019.

3. Results

3.1. Tourist survey:

A total of 279 people completed the online survey. The majority of the participants (97 %) are from Germany. 54 % of the participants are female while 46 % are male. The age of the participants is fairly evenly distributed with a majority of 21-30-year old’s (47 %). The participants were distinguished into two different groups: the mountain bikers (n = 128) and the non-mountain bikers (n = 151). The group of the non-mountain bikers are characterized by never riding a mountain bike during a year, whereas people who ride a mountain bike less than 5 times a year are considered mountain bikers. All people who are riding a mountain bike regularly are among the mountain bikers as well.

Most visited locations of MTB-holidays are Austria (72 %) Switzerland (35 %) and France (20 %) beside Germany (78 %). While 9 % of Mountain bikers are travelling by themselves, 52 % are travelling with friends and 36 % travel

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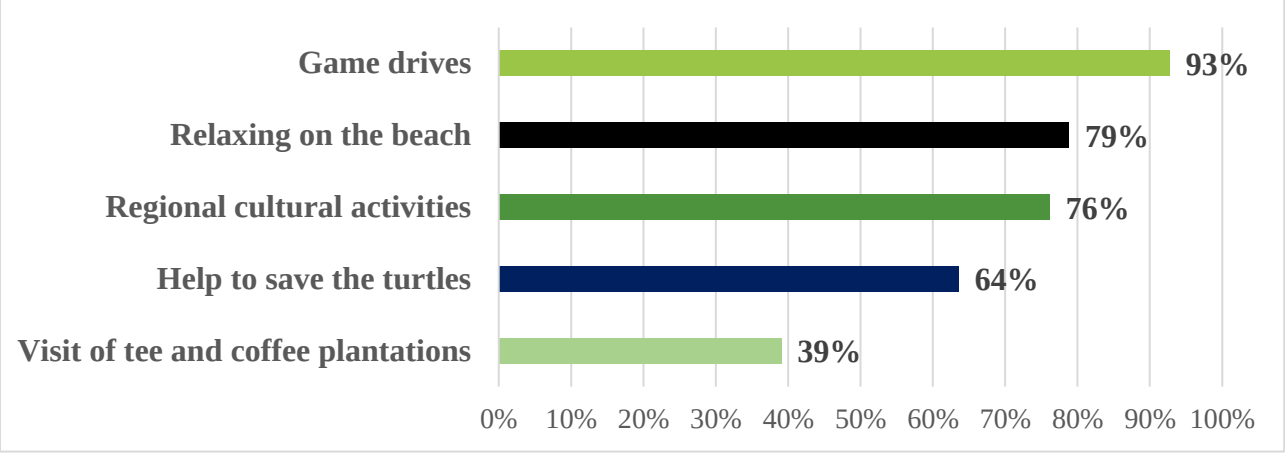
with their family. Friends and family are also the main source of information about mountain bike destinations (68 %). Other sources of information about MTB-destinations are MTB-forum (43 %), -magazines (39 %) and -guidebooks (31 %). Overall, the Internet is the main source of information. In terms of organization, 84 % of mountain bikers organize their tours themselves rather than with a commercial guide (16 %). Mountain bikers seek an athletic challenge mostly when riding mountain bike (74 %). The second most important attribute for MTB-riding are the trail characteristics (37 %). Especially All mountain/Enduro is being preferred (50 %), followed by Touring trail characteristics (38 %). When it comes to discovering different destinations for MTB, mountain bikers are willing to try something new. 86 % agree, that they like to discover different destinations for MTB. They would also like to travel to destinations that are considered exotic from a mountain bike perspective (e.g., Asia, Africa) and to bike there (44 % agreed). Moreover, mountain bikers like to get in contact with locals when they are on their holidays (85 % agreed).

Beside the mountain bikers the non-mountain bikers were asked if they had ever ridden a mountain bike on their holidays. Almost one third (30 %) of the non-mountain bikers were already riding a mountain bike during their holidays which indicates that mountain biking is not only a sport for a specific group but also for “regular” tourists. According to the mountain bikers, non-mountain bikers could imagine riding MTB when travelling to an “exotic” destination (75 %).

In order to obtain assessments of the attractiveness of current MTB-tracks and accommodations, an image survey with actual African tracks and accommodation was conducted. Both mountain bikers and non-mountain bikers valued the tracks attractive regardless of the location, which was not known to the respondents at that time of the survey. After showing the participants the pictures of already existing MTB-tracks in Kenya, they were asked if they could imagine travelling to such countries to ride MTB there. While 26 % could not imagine making such a trip, 38 % would. The remaining 37 % would undertake such a trip only in combination with other activities such as regional cultural activities (76 %), Game drives (93 %) or relaxing on the beach (79 %) (see figure 1).

Figure 8: Interesting activities in exotic countries like Kenya



Reference: Own Results. n = 151

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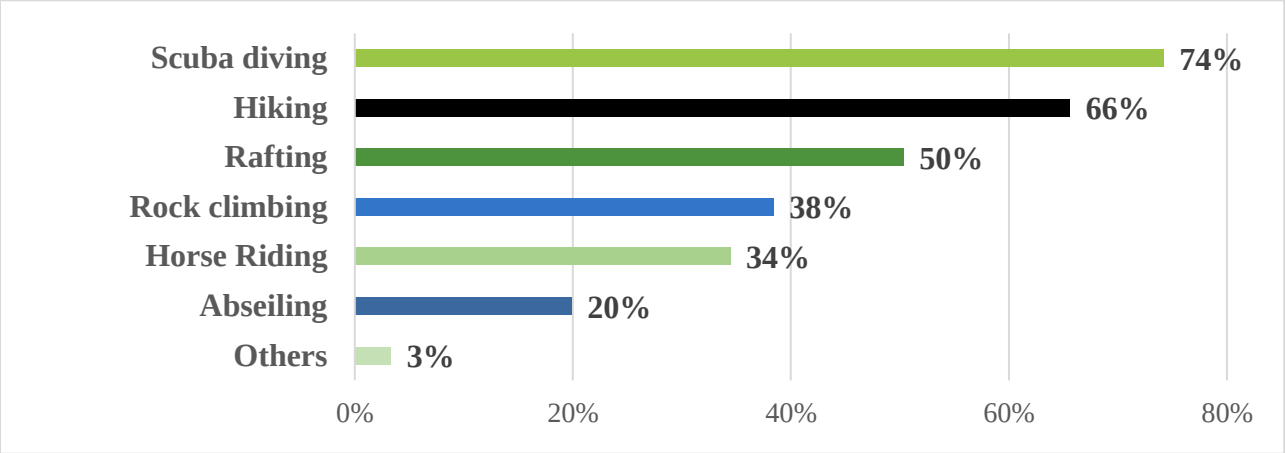
Exotic activities, which are not possible in Germany, such as safaris or only under different conditions, such as relaxing on the beach, were mentioned particularly frequently. Furthermore, the participants would combine such a holiday with other sport activities e.g., scuba diving (74 %), hiking (66 %) or rafting (50. %) (see figure 2).

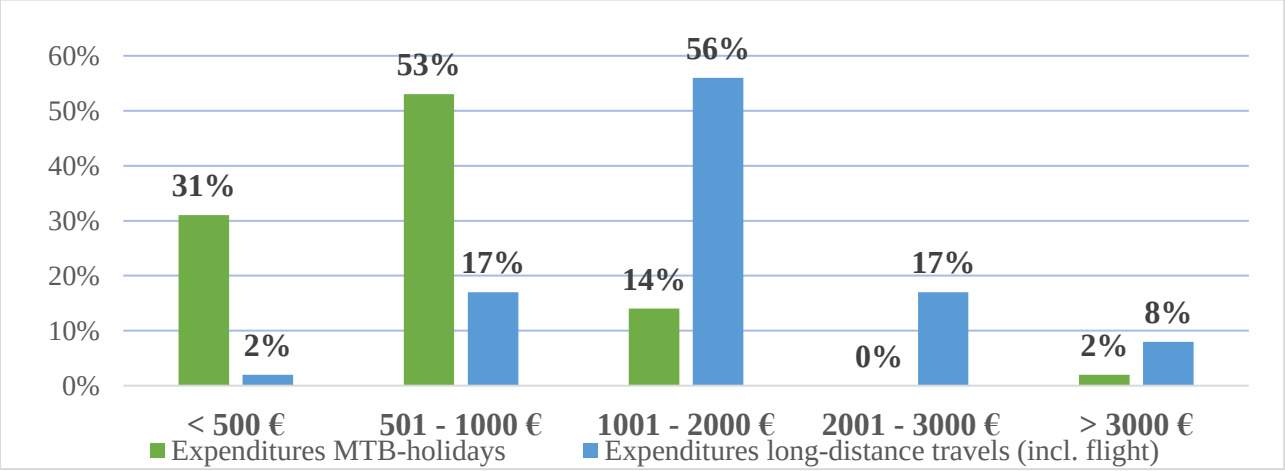
Figure 9: Interesting sports in exotic countries like Kenya



Reference: Own Results. n = 151

In order to get an estimation of the price range for a touristic product including MTB, the average expenditure for both mountain bike holidays, and long-distance travel was examined (see figure 3). This provides information about a possible price range for such a product.

Figure 10: Expenditures per person for a holiday



Reference: Own Results. n = 128

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Most mountain bikers spend between 501-1000 € per person for a MTB-holiday, whereas most people spend between 1001-2000 € per person for a long-distance travel (incl. flight) (see figure 3). This shows an approximate value that the mountain biker is willing to pay for mountain biking holidays in non-exotic areas. As he spends on average considerably more on long-distance trips, a tourist product that includes mountain biking can accordingly be set within a higher price range.

3.2. Expert survey:

Following the tourism survey, an additional expert survey was conducted to provide a differentiated assessment. 26 experts completed the survey at the annual German and Austrian mountain bike conference in May 2019. More than half of all experts work in tourism- and destination management (54 %). Tourism consulting was also mentioned often as a profession of the experts (23 %).

85 % of the experts agreed that a diversified MTB trail network makes a mountain bike destination attractive. They also consider the possibility to do other activities as important as self-organized biking and good accessibility of the destination (each 62 %). The safety of the MTB-track (35 %) seems less important than the safety of the travel area (46 %). As well as the mountain bikers indicated, the experts estimated that Touring (88 %) and Allmountain/Enduro (62 %) are the most suitable target groups for mountain biking in a country like Kenya. In addition, they estimated the potential of German mountain bikers to travel to exotic countries like Kenya to bike there at 32.15 % on average. What seems to be little at first turns out to be a great potential considering the number of mountain bikers in Germany. Nevertheless, most experts do not see mountain biking as the main reason for travelling to an exotic country like Kenya (15 % do so). In fact, the experts see the potential in combining such a trip with other activities to become an attractive destination for mountain biking (69 %). Such activities correspond to those shown in figure 1 & 2 listed possibilities.

In order to meet the mountain bikers needs of an accommodation the accommodation doesn't necessarily need to be a hotel especially equipped for mountain bike guests. Although more than 90 % agree that such accommodation would be suitable, typical lodges for mountain bikers seem to be sufficient as well (see figure 4). However, the condition is that the accommodations are suitable for mountain bikes and the corresponding equipment.

Figure 11: Preferred accommodation during a MTB-holiday in exotic countries like Kenya

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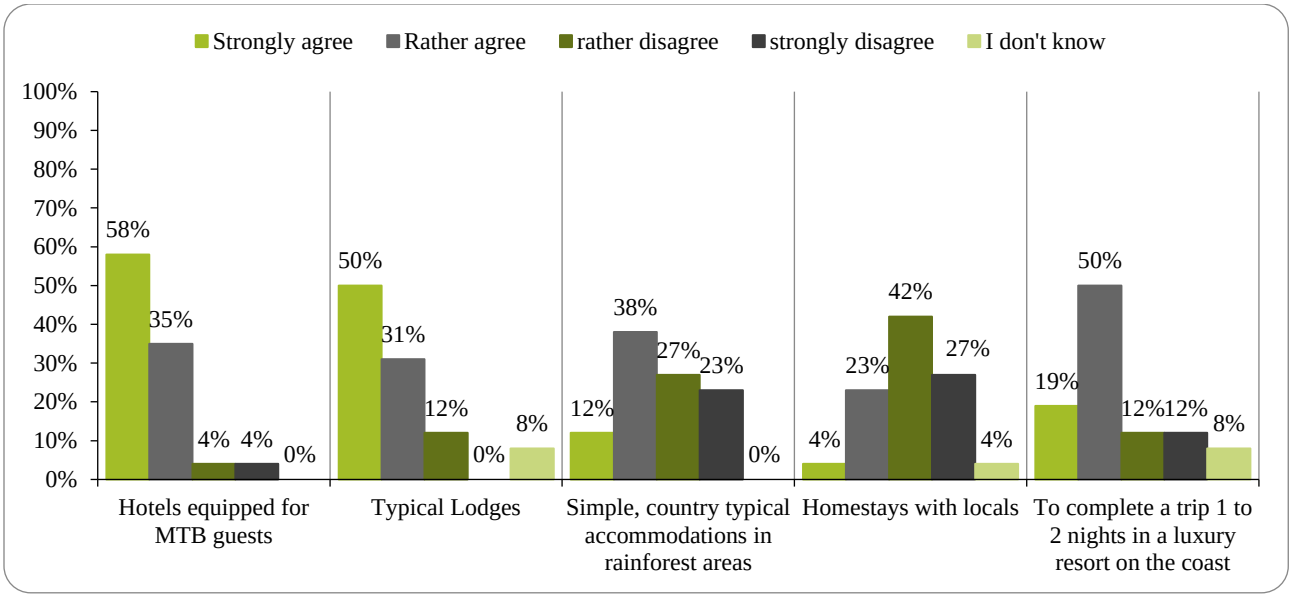
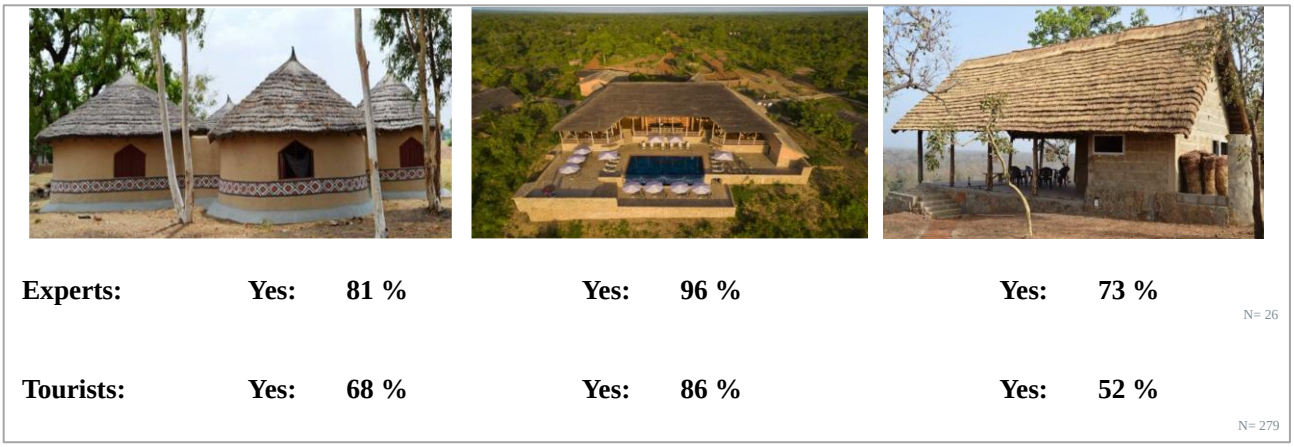


Reference: Own Results. n = 26

Also convincing seems to be a two-night stay in a luxurious accommodation near the coast at the end of a holiday (see figure 4).

As the following pictures show, both the experts and the tourists are seemingly liking the already existing accommodations (see figure 5). It can be seen that more luxurious accommodation is preferred to "simple" accommodation. Nonetheless all pictures are being attractive to at least 50 % of the experts as well as the tourists.

Figure 12: Attractive accommodations – comparison



Reference: Own Results.

In addition, the experts agreed that mountain bike tourists are likely to complete such a trip in a luxury resort on the cost (see figure 5). Accordingly, the attractiveness of the middle picture was highest as it seems most luxurious.

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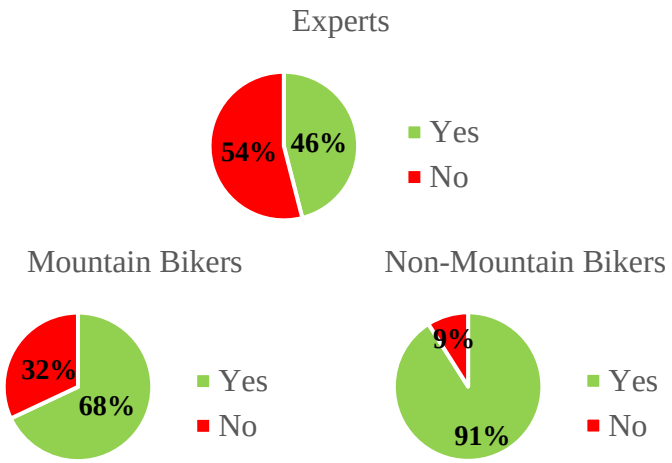
Like the tourists, the experts also evaluated the already existing mountain bike routes with regard to their attractiveness. As well as the tourists indicated, there was a high level of approval regarding the attractiveness of the existing tracks. The following two pictures show the comparison of the evaluation of the mountain bikers, the non-mountain bikers and the experts (see figure 6 & 7).

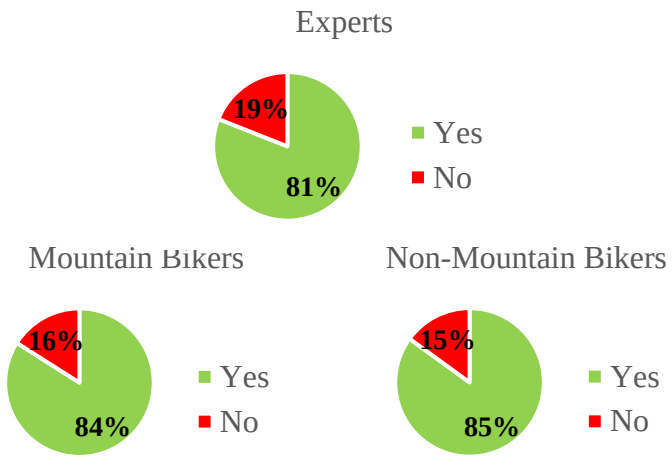
Figure 13: Attractiveness of MTB-track 1



Reference: Own Results.

The majority of participants (over 60 %) found the track of figure 6 attractive. Only the experts consider this route not particularly attractive for mountain bikers. While mountain bikers prefer higher and steeper tracks, non-mountain bikers tend to prefer relatively flat tracks according to the pictures shown to the participants. Furthermore, all pictures shown seemed to be attractive to the participants.

Figure 14: Attractiveness of MTB-track 2



Reference: Own Results.

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All parties agreed that narrow tracks are more attractive for mountain biking rather than wide tracks. More than 80 % of both the experts such as the tourists found the track of figure 7 attractive. They find this track more attractive than the track of figure 6 probably because of its width. This picture especially shows the high interest of both mountain bikers and non-mountain bikers as well as the high estimation of attractiveness of the experts. It also indicates that no special measures need to be taken in order to build such tracks.

Overall, there was a high level of agreement regarding the already existing tracks. Furthermore, there seems to be a great market potential, as a certain part of the participants would be willing to make a trip to Kenya and ride mountain bikes just on the basis of a few pictures. Especially the possibility to combine mountain biking with other activities and sports within such a holiday shows great interest of the tourists and the experts as well.

4. Best practice

As the previous results showed, mountain biking has great market potential as a tourist product and can be successfully implemented in exotic countries like Kenya. It also became clear that mountain biking as a sole pull-factor is not sufficient to make such a journey as a tourist. However, mountain biking seems to be an extremely promising activity in exotic countries. Successful examples can already be found in parts of Africa. South Africa in particular already has some of these offers. iSimangaliso Wetland Park (RSA) is one of the companies offering such adventurous MTB-experiences in South Africa. Riding with a mountain bike through the World Heritage Site of the iSimangaliso Wetland Park, tourists not only experience riding a mountain bike in different landscapes but with different animals surrounding them. The park operators use the natural tracks, which are etched in the soil by hippo's and antelope's footprints, the "nature's most accomplished trail designers". (iSimangaliso Wetland Park, 2020). Tourists can mountain bike through a World Heritage Site that transverses eight interlinking ecosystems and can "see a rhino and elephant in one day, followed by whales the next" (see ibid.). iSimangaliso Wetland Park is offering a touristic product which can easily be booked through their website. The entrance fee assists in monitoring, protecting and

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reintroducing animals into the park. This allows tourists to experience a safari on a mountain bike tour while conserving resources and supporting wildlife. Such a tour is led by a tour guide and thus ensures the safety of both the tourists and the animals.

Manyoni private game reserve also offers a special event regarding mountain biking within a wildlife reserve. There is a so called "Rhino Ride" where the poaching of Rhinos is pointed out. Furthermore, money will be collected for the fight against poachers. This event is held annually since 2013. Tourists also have the possibility to take a guided tour through the reserve and have the chance to see the "Big 5". In addition, game drives can be booked and attract not only mountain bikers but also "regular" tourists (Manyoni Private Game Reserve, 2020).

These best practices are indicating that mountain biking is already successfully used as a touristic product in Africa and enjoys great popularity and demand using relatively simple ways of implementing such a product.

5. Conclusions and Recommendations

The results of the study indicated that there is an apparent market potential for mountain bike tourism in exotic countries like Kenya. Mountain bikers as well as non-mountain bikers showed that they like to go mountain biking during their holidays. Furthermore, almost one in three non-mountain bikers has already ridden a mountain bike while on vacation. Consequently, mountain biking does not only appeal to mountain bikers themselves but can also be considered an interesting activity for "regular" tourists. As the photo survey showed, the mountain bikers, the non-mountain bikers as well as the experts consider the already existing MTB-tracks attractive. The accommodation that would be suitable for such a trip seems to convince the respondents, too. However, it can be stated that the German tourist prefers more comfortable and modern accommodation to "simple huts". Nevertheless, typical African lodgings are an attractive form of accommodation during a mountain bike holiday. Already existing MTB-tracks such as accommodations were valued as attractive, showing that new tracks and hotels do not necessarily need to be built in order to attract tourists from Germany.

Although mountain bikers like to ride on their own, for the protection of both animals and inexperienced tourists, secure tours should be offered, optionally with a tour guide. Furthermore, the participants showed a high need for safety both for the mountain bike route and especially for the destination, which should be taken into account. In addition, the experts consider Enduro/All mountain or Tour trail-characteristics to be a particularly suitable form of mountain biking for exotic countries. Moreover, narrow tracks are being preferred to wide tracks. Due to the fact that Kenya is not yet known for mountain biking, experts say that 15 % of the people would travel to Kenya to go mountain biking based on the pictures shown. However, the overwhelming majority of the experts considered such a touristic product to be successful only in combination with other activities. Additionally, a majority of mountain bikers would travel to Kenya to mountain bike, but also only in combination with other country-specific and sporting activities. These activities include, in particular, game drives, relaxing on the beach and cultural activities, as well as sporting activities such as scuba diving, hiking and rafting. The best practice examples also successfully combined some activities. Especially the combination of mountain biking and game drives already shows great potential. If

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other country-specific and sporting activities will be added to the portfolio of exotic destinations, there seems to be great potential to establish a successful tourism product in the European market.

In summary it can be concluded that MTB-tours in exotic African countries like Kenya can be an attractive way to spend a holiday. However, in order to obtain a product that is successful on the market, the combination with other country-specific activities and other sports is important, as mountain biking is probably not sufficient as the main reason for a long-distance trip. For this reason, tourist packages including eco-MTB-tours can be successful on the market and should therefore be focused.

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Development in Kenya for the German Source Market" in cooperation with MCF. Furthermore, Mr. Kremser, in cooperation with Prof. Dr. Wölfle, presented the results of their research project on mountain bike tourism at two international congresses. Currently, Mr. Kremser is studying Entrepreneurship and SME-Management in the master's program at the University of Siegen and is expected to graduate in September 2022.

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Godbless Biekro, posing with a picture of his Tiger Nut biscuit. Company Name: Tiger House Limited

BET Ghana – Building Expertise and Training for growth in consumer goods and food processing industries in Ghana.

BET Ghana
Building Expertise and Training for growth in the consumer goods and food processing industry in Ghana

Overview

The labour markets in Africa provide graduates who have sufficient theoretical skills but exhibit a lack of practical experience. The project's overall goal is to enhance employability and (self-) employment opportunity of students and graduates specifically in the Ghanaian consumer goods and food processing industry. In addition, awareness of the potential of the African markets among German SMEs should be raised and they should be given the opportunity to get involved by exploiting the advantages of a university partnership platform.

Corporate partners played a crucial role in the project as they provide universities with knowledge, requirements and needs to help them to improve the academic practice-oriented teaching and research and increase the employability of their graduates. At this juncture, the project conceptualized "win-win" cooperation models which led to direct benefits for companies and universities.

The project activities included the Enhancing knowledge, research capacities and professional skills among researchers, lecturers and students, as well as entrepreneurs in the Ghanaian consumer goods and food processing industries. In addition, the exchange of students and staff, and annual conferences aims to increase knowledge transfer between the private sector and academia especially regarding entrepreneurship in Africa

The project started in July 2019 as part of the "University-Business-Partnership programme" funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) and the German Academic Exchange Service (DAAD). The project is being carried out by the Bonn-Rhein-Sieg University of Applied Sciences (H-BRS) in Germany, the University of Cape Coast (UCC) in Ghana. Various corporate partners contributed to the project.

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