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# Catching up, falling back or forging ahead: Perceived opportunities and prospects of the circular economy in Ghana



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Catching, falling back or forging ahead: Perceived opportunities and prospects of the circular economy in Ghana

By

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## Acknowledgements

A word cloud of acknowledgements. The words are arranged in various orientations and colors. The most prominent words are 'Supervisors' (large, bold, black), 'Mum' (large, bold, red), 'Brothers' (large, bold, blue), 'Thank you' (large, bold, pink), 'Graduation' (large, bold, purple), 'Fiancé' (large, bold, blue), 'Family' (large, bold, yellow), 'Netherlands' (large, bold, orange), 'Wageningen' (large, bold, orange), 'Sis' (large, bold, green), 'Circular economy' (large, bold, green), 'Holland Bike' (large, bold, pink), 'Entrepreneurs' (large, bold, black), 'Research' (large, bold, black), 'Appreciation' (large, bold, red), 'Friends' (large, bold, black), 'WUR' (large, bold, black), 'ABF Funds' (large, bold, black), 'ISOW' (large, bold, black), 'Ghana' (large, bold, black), 'Student life' (large, bold, pink), and 'Wageningen' (large, bold, orange).

Appreciation Thank you  
Brothers ABF Funds  
Mum WUR  
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Ghana Sis Netherlands  
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## Abstract

Entrepreneurship has been the backbone of most developing economies more especially when entrepreneurship grows to be able exact change with its production process or decisions. All entrepreneurs have been noted to have gotten or conceived their entrepreneurial ideas through or from certain triggers and motivations. These triggers to a large extent determines the entrepreneurial paths they take and what entrepreneurial labels are attributed to them.

The research set out in Ghana to find the profile of entrepreneurs compared to those identified in the literature and the perceived opportunities for entrepreneurs to transition to a circular economy. Qualitative data was collected from twelve entrepreneurs to answer the research questions set for this research.

Aside the triggers identified to motivate and 'push' individuals into entrepreneurship in the literature, sampled entrepreneurs in Ghana were additionally noted to be motivated and triggered by their social circumstances and environment.

Being triggered or motivated to start /have an idea is but the first step of an entrepreneurial journey. Entrepreneurs go through phases of venture development to come out with a fully developed business. It was realised that at the idea development and evaluation phase, some sampled entrepreneurs in Ghana used NGOs as a medium to test their product until they were ready to scale up or had attracted investors.

The circular economy idea was not home to the entrepreneurs even though almost all of them produce their product with or from waste (one of the circular economy ideology). Even though these entrepreneurs see prospects and opportunities for transitioning into the circular a major concern of transitioning is that, not all the principles or building blocks of the circular economy are feasible in a developing context like Ghana at the moment.

The challenges entrepreneurs forecast to hinder or slow their transition to the circular economy and its opportunities are: lack of investors in research, quality of product versus circular principles, lack of an enabling environment and funding or finance available.

In summary, sampled entrepreneurs in Ghana are forging ahead through their many efforts of entrepreneurial actions which through their goals, motivation and triggers through which they seek to solve social and environmental (underlying) problems. They are also catching up with the pace of entrepreneurial development and innovation through product which indirectly benefits local communities by unknowingly adopting a circular economy principle. Finally they are falling back/behind on investment in research, enabling conditions, product design quality versus circular economy principles and funding or finance available to fully reach their potentials.

**Keywords:** Entrepreneurial goals, Motivations, Circular economy, Prospects, Opportunities, Challenges, Ghana

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## 1.0 Introduction

In the beginning of the 21st century, the attention of the world was drawn to the persistent development crisis in the continents of Asia and Africa. Hence government policies to promote entrepreneurship and innovation have become a mainstay in developing countries, where their relative success can perpetuate the gap in economic prosperity between the developed and developing countries (Robson, Haugh, & Obeng, 2009). The potential and benefits of entrepreneurship and innovation in developing countries are immense under the right conditions. Scholars have claimed that entrepreneurial action can preserve ecosystems, counteract climate change, reduce environmental degradation and deforestation, improve agricultural practices and freshwater supply, and maintain biodiversity (Cohen & Winn, 2007; Dean & McMullen, 2007).

Today, there is also growing evidence of a significant causal relationship between entrepreneurship, economic growth and poverty reduction especially at the community level. Small, micro and medium-sized enterprises are often the backbone of the private sector in the developing world, creating jobs and providing a tax base for local government.

Small enterprises contribute to employment (Birch, 1979), innovation and competitiveness (Schumpeter, 1942). And according to Robson et al., (2009) It is the only employment available to millions of poor people hence governments have endorsed their role in policies, in a quest to creating an enabling environment for entrepreneurs, new venture creation and firm growth. Entrepreneurial firms are important elements in economic development and even though they have low market influence individually (Dickson, Coles, & Lawton Smith, 1997), collectively they have the potential to contribute to national wealth and generate economic growth.

Besides the contribution of entrepreneurs to the economy and their mainstay in policy making process, there are different motives, motivations, strategy, models and or resource streams that these entrepreneurs take to arrive at their various impact on societies and the economy at large. Despite some of the obstacles, there are some success stories of entrepreneurs in Ghana and the increasing support available to them through governmental and non-governmental schemes. These obstacles and support to a large extent shape the stories (motivation, motives, strategy etc.) of entrepreneurs.

Entrepreneurs in developing countries evolve and are inspired by different reasons. These might be different from theories and frameworks developed for western economies more especially looking at the challenges they face. This research would delve into the stories of entrepreneurs in Ghana to be able to build a profile of the various 'types' of entrepreneurs that exists. More importantly their day to day activities and production processes would be probed to identify sustainable, if not circular practices.

Delving into these motives, motivations and strategies prevents the over-generalization of findings and experiences as is normally the case in literature for developing countries. And on the practical side, policies, resources, aid and support would better be administered to areas and aspects most needed. This will equally prevent the 'one size fits all' policies and solutions currently administered in Africa and Ghana for that matter.

Sustainability is a buzz word used in most policy, political document and mission statements of entrepreneurs and governments in Ghana. Its understanding and context is vast but it is generally used to mean an improvement in production processes, goods or services. The importance of understanding sustainability as more than an improvement in production process to the issue of material, resource use and scarcity is of importance. Even though entrepreneurs are becoming increasingly aware of sustainable production and process issues and a few have advanced toward circular production (unaware), there is quite a journey ahead to transition from sustainability to circularity through better choices of materials, product designing, green sourcing and the use of renewable resources among others.

Ghana as a geographical area presents itself as a useful area to study how entrepreneurs can incorporate circular economy thinking into their businesses because the entrepreneurs in Ghana are continually thriving towards sustainability with their current business models in the existing institutional framework and are exhibiting some features of circular production and thinking even though they are unaware of this. Hence, this study would highlight these circular economy features\peculiarity and shed light on the possibilities of transitioning to a circular economy under the frameworks and models.

## **1.1 Research Problem**

Aside the pertinent issue of resource depletion and a near future of scarcity, the effective use of resources is profitable to the economy, environment and people. The campaign for efficient (eco-efficiency)<sup>1</sup> use of resources started with sustainability, which to a large extent can be said to only

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<sup>1</sup> Eco-efficient techniques seek only to minimise the volume, velocity, and toxicity of the material flow system, but are incapable of altering its linear progression. In this process, materials are recycled, but often as an end-of-pipe solution. Instead of true recycling, this process is actually down-cycling, a downgrade in material quality, which limits usability and maintains the linear, cradle-to-grave dynamic of the material flow system. (<https://www.ellenmacarthurfoundation.org/circular-economy/interactive-diagram/efficiency-vs-effectiveness>) Accessed 01/10/2017.

delay the depletion and scarcity of resources but does not either stop or ensure the effective (eco-effectiveness)<sup>2</sup> use of materials.

Entrepreneurs in Ghana are the new and developing backbone of the economy; creating jobs which reduces the high unemployment rates experienced as well as innovating to solve current problems. Despite entrepreneurs' benefits to the economy and their evolving roles, entrepreneurs in developing economies have been noted from literature to exhibit features especially motivations fairly different from that of developed economies Boso, N., Story, V. M., & Cadogan, J. W. (2013). This to a large extent affects the choices they make for the material selection, production process, business model and strategies. Again, these choices orient them towards some typology of entrepreneurs. These differences collectively make some of them prone to producing within the circular economy principles.

There is therefore a need to study the characteristics of entrepreneurs in Ghana (as a developing economy), how different they evolve or operate from the identified features of entrepreneurs in developed countries. Again, the current systems of production or resource use may allow entrepreneurs to think in 'circles'. Therefore, the research will seek to highlight such circular economy features\peculiarity if they arise and shed light on the possibilities of transitioning to a circular economy.

Entrepreneurs in developing economies do not necessarily or always fall within the 'boxes' constructed by western literature about the characteristics, motives, motivations or strategies of entrepreneurs. The peculiarities and similarities exhibited by these entrepreneurs affects the choices they make (resource type, energy, product design etc.) which invariably reflects in systems of productions like sustainable or unsustainable production systems. Based on this problem, the following research questions would be probed.

## 1.2 Overarching Research Question

***What are the characteristics and distinguishing features of entrepreneurs in Ghana and to what extent do they perceive opportunities towards transitioning to a circular economy?***

### 1.2.1 Sub Research Questions

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<sup>2</sup> Eco-effectiveness proposes the transformation of products and their associated material flows such that they form a supportive relationship with ecological systems and future economic growth. The goal is to generate cyclical, cradle-to-cradle 'metabolisms' that enable materials to maintain their status as resources and accumulate intelligence over time (upcycling). (<https://www.ellenmacarthurfoundation.org/circular-economy/interactive-diagram/efficiency-vs-effectiveness>). Accessed 01/10/2017.

## **What is the profile of the current entrepreneurs in Ghana?**

This is to explore what characterises, motivates and influences the peculiarity and similarities that exist among entrepreneurs. It will include their motives, resources, business models, short and or long-term strategies. The entrepreneurial environment, i.e. the institutions, laws, procedures and or niches/incubators that encourages, supports, finances and promotes the activities of entrepreneurs would also be probed

The above finding(s) would be used to identify the types of entrepreneurs in Ghana as well as to spot emerging trends, similarities and differences between literature about the developed economies and that of the developing economies (Ghana in this case).

**2a. What are their perceived opportunities and or hindering factors to transition to the circular economy.**

**b. What are the (future) strategies or paths to incorporate circular economy thinking among Ghanaian entrepreneurs?**

Through their goals, motivations and strategies, entrepreneurs are in an iterative process of reaching their objectives which more often than not, are met with opportunities and challenges. The circular economy presents prospects usually noted to bring more change and growth. Therefore the researcher will probe into aspects of the production process within which entrepreneur operate to identify areas or sections that can be strengthened or changed to enable transition into a circular economy. Based on this and the findings from the previous question, a road map (paths) and what line of action(s) to be taken would be prescribed, and recommended. Since the knowledge of circular economy is virtually absent in Ghana, this process would include educating entrepreneurs on the prospects of their business adapting the principles of the circular economy and a possible brainstorm section of incorporating these ideas.

## **1.3 Research Objective.**

To identify and examine strategies that entrepreneurs can incorporate into their business models and productions processes as well as prospects to transition into or towards the circular economy (thinking). In this quest, the entrepreneurial characteristics of start-ups, their current model(s) as well as the current institutional framework within which they operate would be analysed.

A transition model or roadmap towards a circular economy would be prescribed as well as the role of the current institutional framework in this transition economy.

## 1.4 The Circular Economy

The current economic system is characterised by an environment where resources are extracted from the environment, mixed and turned into other products, used and disposed of in the long run. McDonough and Braungart (2009) and the Ellen MacArthur Foundation, 2012 refers to this as a linear system: the take, make and dispose system. The biggest challenge this linear system is set to face is the depletion of resources. The last stage of the linear system (dispose) destroys the materials and resources embodied in a product either to landfills or incinerators. A solution to this resource and material lost in this unsustainable linear system is to transition to a more sustainable paradigm of effective resource utilization: a circular economy.

The circular economy is an alternative to the traditional linear economy (make, use, dispose) in which resources are kept in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life (Davies, 2017). It is a system that makes effective use of resources and addresses mounting resource-related challenges for business and economies. It has good prospects to generate growth, create jobs, and reduce environmental impacts, including carbon emissions. The circular economy is defined as one that is “restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times, distinguishing between technical and biological cycles” (MacArthur, 2015, p. 2). The circular economy is focused on maximizing what is already in use along all stages of a product’s life cycle, from sourcing to supply chain, to consumption, to the remaining unusable parts for one function and converted back into a new source for another purpose (Cha, 2017). This new economic model seeks to ultimately decouple global economic development from finite resource consumption. It is a model that preaches the non-existence of waste and equates waste to food. There are three main principles of action by this school of thought which are to:

Principle 1: Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows.

Principle 2: Optimise resource yields by circulating products, components, and materials at the highest utility at all times in both technical and biological cycles and

Principle 3: Foster system effectiveness by revealing and designing out negative externalities (Ellen MacArthur Foundation).

The main building blocks of the circular economy goes beyond just product design. It is an economic concept that entails Product Design, Business Models, Reverse Networks and Enabling Conditions (Arcadis, 2016). In designing a circular product, these principles also need to be taken into

consideration: durability (extended life), dematerialisation by design, ease of maintenance and repair, ease of disassembly or reassembly, potential for upcycling and repurposing, material separation and recovery (Davies, 2017).

Transitioning towards a circular economy also requires a shift in perspective and way of thinking. It calls for a new economic model based on systems-thinking and from the efficient use of resources to an effective use while staying in business and or thinking in systems. Researchers and modelling experts at the Ellen MacArthur Foundation and the McKinsey Centre for Business and Environment estimate that, in a circular economy scenario, consumption of new materials could be reduced by as much as 32% within 15 years, and by 2050 by more than half, at 53% (MacArthur, Zumwinkel, & Stuchtey, 2015). Primary materials used in construction, car manufacturing, fuel, non-renewable energy, land use, synthetic fertilizers and pesticides among other uses, can be replaced with recovered and repurposed materials in cascaded use. It is also estimated that moving towards a circular economy could eliminate 100 million tons of materials waste globally in the next five years.

The Ellen MacArthur Foundation (2015), presents a 'butterfly' diagram which distinguishes between the technical and biological cycles in a CE, as shown in figure 1. The technical cycle involves recovering and restoring finite materials while the biological cycle encompasses the flows of biological materials that are regenerated in the cycle. Before the appearance of CE, there were few terms that described similar concepts. These include the "industrial ecology" which has been used as a synonym for the "circular economy," as well as other related concepts, such as "cradle -to-cradle," "closed-loop," "biomimicry," and "blue economy," all emphasizing the circularity of resources (Benyus, 1997; Geissdoerfer, Savaget, Bocken, & Hultink, 2017; Ghisellini, Cialani, & Ulgiati, 2016; Lieder & Rashid, 2016). The literature largely ignores stakeholders; the key to the transition to a CE. Ghisellini et al. (2016) believes the involvement of stakeholders in a suitable collaboration is key to the transition to the circular economy. Connett et al. (2011) argues that if a product cannot be reused, recycled, or composted, then the industry should not produce such a product and consumers should not buy it. This emphasizes the shared responsibility among all stakeholders, including customers.

In the literature, the implementation of CE is often viewed from three levels: micro, meso and macro levels (Ghisellini et al., 2016; Lewandowski, 2016; Murray, Skene, & Haynes, 2016). The micro level involves the activities of individual firms, the meso level involves eco-industrial parks or industrial symbiosis (group of firms) and the macro level which involves a city, region or national scales. This research focuses on the micro level implementation and how to gear towards the meso levels.

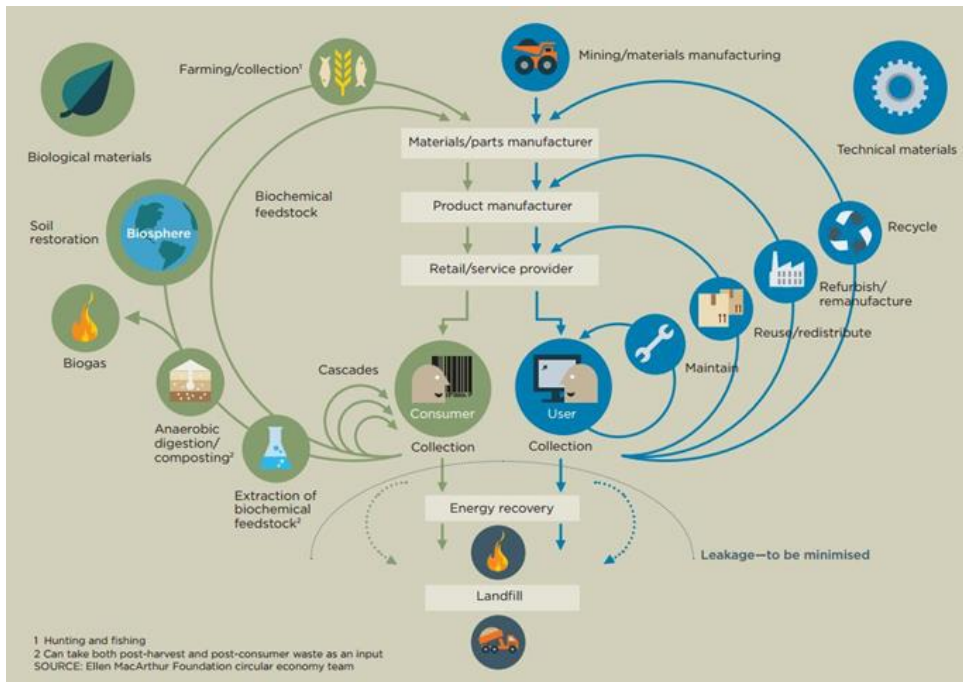


Figure 1 Circular economy butterfly distinguishing the technical and biological circles (Ellen MacArthur Foundation, 2012)

## 1.5 Prospects of the Circular economy for entrepreneurs in Ghana

### The Virtue of Proximity: Materials Recovery and Economies of Scale.

Looking at the current rate of population growth and urbanization, which has been speculated to have over half of the world's population living in cities by year 2050, the proximity to resources that are already in circulation in the system is high in these cities. Meaning it is much more realistic to recover and treat post-consumer materials on a large scale to prepare them for re-use in a new capacity. The economies of scale are most obtained in the reduced rate and cost of transporting recovered resources and the cost of having to obtain virgin but scarce resources.

### Job creation potential.

The circular economy is expected to have a large impact attributable to increased spending fuelled by the lower prices expected across sectors. Also, a transition or production process that works with the circular economy principles would be labour intensive due to the high-quality recycling activities and higher skilled jobs in the remanufacturing sectors. Employment opportunities would not be limited to the remanufacturing sector and growth within large corporations alone but jobs would be created across industrial sectors, through the development of local reverse logistics, increased innovation and entrepreneurship and a new service-based economy (Ellen MacArthur foundation, 2015)

### Increased Innovation and Entrepreneurship.

The aspiration to replace one-way products with goods that are 'circular by design' and create reverse logistics networks and other systems to support the circular economy is a powerful spur to new ideas.

The benefits of a more innovative economy includes higher rates of technological development, improved materials, labour and energy efficiency and more profit opportunities for companies and or start-ups (Ellen MacArthur foundation, 2015).

### **Increased profit margins.**

As anticipated by the Ellen MacArthur foundation, individual businesses could achieve lower input costs and in some cases, create entirely new profit streams. Most profit would be made from complex medium-lived products and fast-moving consumer goods that uses circular economy approaches. For instance, the cost of remanufacturing mobile phones could be reduced by 50% per device if the industry made phones that are easier to take apart, improved reverse cycle and users offered incentives to return 'old' phones.

## **Theory building and Framework.**

### **2.0 Entrepreneurial contribution in developing context.**

Entrepreneurship has varies meanings and importance based on the context under study. To Shane and Venkataraman (2000), it is seen as the 'discovery and exploitation of opportunities'. From an economic perspective, entrepreneurs have been noted to contribute to economic development by facilitating the reallocation of resources from less to more productive uses (Z. Acs & Storey, 2004), by performing 'cost-discovery', 'gap-filling', and 'input-completing' functions in the economy (Hausmann & Rodrik, 2003) and by supporting structural change (Gries & Naudé, 2010). Based on this economic premise, some scholars who share the "Schumpeterian" view of entrepreneurship do not consider it to be very important in earlier stages of economic development. They presumed the contribution of entrepreneurship to be much more important in later stages of development, where economic growth is driven by knowledge and competition as compared to earlier stages of development, where entrepreneurship plays a less pronounced role because growth is largely driven by factor accumulation (Ács and Naudé, 2013). Nonetheless, Kanbur (1979, p.773) definition of entrepreneurs as one who 'manages the production function' by paying workers' wages (which are more certain than profits) and shouldering the risks and uncertainties of production has been regarded to be very relevant in developing country contexts which is characterized by high risk and uncertainty.

Entrepreneurship contributes to developing economies in diverse ways. Over the past three decades, they have been remarkably resurgent in poverty reduction in countries like China, hence, donors and international development agencies have turned to entrepreneurship more, to improve the effectiveness and sustainability of aid (Naudé, 2010a).



Another important role of entrepreneurs in developing economies is usually to discover that a certain good, already well-established in world markets, can be produced at home at low cost (Hausmann & Rodrik, 2003; Rodrik, 2008) hence (Baumol, 1990; Boettke & Coyne, 2003; Powell, 2008) have argued that for entrepreneurship to unlock growth or economic development for a country, proper institutional setting must be put in place. Despite these, empirical studies on the role of entrepreneurship in economic growth have shown mixed evidence (Stam, 2008) (Naudé, 2010a) because of the heterogeneity in both the kinds of entrepreneurship and economic contexts in which the growth takes place. Simply put, it is a local and regional level activity in which new firms can immediately begin to create benefits for their host locations (bottom-up). Thus it creates and increases economic development at the community level where at its very least, creates one job for the entrepreneur and at best, it generates additional jobs and (financial or non-financial) incomes for other people.

In Ghana, entrepreneurship is usually important at the micro level in terms of creating stable and sustainable employment for individuals. This is because, majority of entrepreneurs in Ghana are in the informal sector where they tend to contribute to their immediate family and surrounding rather than the larger economy because for instance they do not pay taxes or are regulated their contribution to the country is through providing services or goods that the people need and creating employment despite the limitations and challenges they face (Boso, Story, & Cadogan, 2013). These limitations and challenges notwithstanding, business support schemes from both the public and the private sector have been identified and being made available to entrepreneurs. This support schemes can be regarded as a way of the government promoting or institutionalizing the contribution entrepreneurs made to the economy in the smallest way possible. The Africa Project Development Facility report for instance (APDF, 2002) documented about 48 donor support programmes in Ghana alone. Again, several institutions and schemes have been put in place by the government to support entrepreneurship. Notable among them are the Ghana centre for entrepreneurship, employment and innovation, the national board for small scale industries, Exim guarantee, and most recently the national entrepreneurship and innovation plan (NEIP) (worth \$100 million) initiated in 2017. Despite these efforts by the Ghanaian government, a survey in 2015 reported only nine percent of entrepreneurs knowing of these support schemes and just a handful accessing it because of the laborious paperwork involved.

## **2.1 Entrepreneurial Types and Characteristics**

Typology research over the decades has been a way of creating order or finding uniformity among this heterogenous, often ill-defined group referred to as “entrepreneurs”. Attention has increasingly been

devoted to how groups of entrepreneurs differ from each other and in a quest to do this, grouping them according into certain common characteristics as a way of understanding of who they are, what they aspire and what they do (Woo, Cooper, & Dunkelberg, 1991). The development of typologies represents a middle ground between treating each entrepreneur as unique and representing diverse populations through one set of averages. Therefore, the typologies explained here will be used as a conceptual tool to further analyse the extent of perceived opportunities for the entrepreneur to adapt the circular economy thinking. The types of entrepreneurs reviewed in this section are the researchers' efforts in describing the most mentioned and common ones in the literature. Again, it should be noted that this is not to 'box' entrepreneurs will be fitted into but it is to serve as a framework to help identify similar or different feature and peculiarity among entrepreneurs and most importantly to see if these characteristics also typify entrepreneurs in developing countries.

### **Sustainable Entrepreneurs**

Sustainable entrepreneurship is perceived to be conceived by the link between entrepreneurship and sustainable development which stemmed from theories based on an economic or market failure perspective (Ploum, 2018). Sustainable entrepreneurial action is seen as a promising way to preserve ecosystems, counteract climate change, reduce environmental degradation, improve agricultural practices, and maintain biodiversity (Cohen & Winn, 2007; Dean & McMullen, 2007; Patzelt & Shepherd, 2011). From the institutional or company point of view, sustainable entrepreneurs are actors and/or companies making environmental progress to their core business thus they generate new products, services, techniques and organizational modes that substantially reduce environmental impacts and increase the quality of life (Schaltegger and Wagner 2011). In the same vein, Young and Tilley (2006, p.88) define sustainable entrepreneurship to be embodied by someone "who holistically integrates the goals of economic, social and environmental entrepreneurship into an organization that is sustainable in its goal and sustainable in its form of wealth generation".

They are characterized as entrepreneurs who are focused on the preservation of nature, life support and destroy existing conventional production methods. Taking the responsibility of equally distributing well-being and risk between the rich and poor, human and non-human and the present and future generations is a strong motivation for sustainable entrepreneurs (Blok et al, 2016). They are also characterised by destroying existing products, market structures, consumption patterns, and replace them with superior environmental, social products and services. Thereby, creating the market dynamics of environmental and societal progress (Schaltegger & Wagner, 2011). Also, individual values and norms are essential among these entrepreneurs and it equally drives them towards recognizing opportunities for sustainable development (Lans et al, 2014).

The central idea behind the development of sustainable ventures is that the activities performed by entrepreneurs in the pursuit of gains must not undermine the ecological and social environments in which they operate and when necessary, they must restore or nurture such environments towards recovering the balance between the environment, society and economic activity (Parrish, 2010; Patzelt & Shepherd, 2010; Schaltegger & Wagner, 2011). Ultimately, its overarching aim is to balance the competing demands for environmental protection and economic development, emphasizing economic, ecological and social goals in equal degrees (Patzelt & Shepherd, 2010).

Whereas all entrepreneurs deal with bridging activities between suppliers and customers to create and change markets, sustainable entrepreneurs differ from conventional entrepreneurs in that they also build bridges between social and environmental progress and market success. Thus, it deals with how social-ecological systems ought to be developed in order to achieve a balance between economic, social and environmental aspects in business practices.

### **Institutional Entrepreneur**

Unlike the sustainable entrepreneur, an institutional entrepreneur is an actor that has an ambition and interest to change institutional settings by developing new institutions or facilitating change in existing institutions (replacing the old with the new), and by leveraging resources to achieve this change (P. DiMaggio, 1988; Fligstein, 1997; Schaltegger & Wagner, 2011).

These actors, institutional entrepreneurs, 'create a whole new system of meaning that ties the functioning of disparate sets of institutions together' (Garud, Jain, & Kumaraswamy, 2002). It thus offers promise to researchers seeking to bridge what have come to be called the 'old' and 'new' institutionalisms (P. J. DiMaggio & Powell, 1991; Greenwood & Hinings, 1996). They are characterised by their 'capacity to imagine alternative possibilities', 'to contextualize past habits and future projects within the contingencies of the moment' if existing institutions are to be transformed (Emirbayer & Mische, 1998, p. 963). To qualify as an institutional entrepreneur, individuals must break the existing rules and practices associated with the dominant institutional logic(s) and institutionalize the alternative rules, practices or logics they are championing (Garud & Karnøe, 2001) (Battilana, 2006).

### **Social Entrepreneurs**

Social entrepreneurship has been described as a specific form of ownership structure as well as a philanthropic, fund-raising or social-purpose business venture (Mair & Noboa, 2003) and one that makes diverse contributions to communities and societies, by adopting business models to offer creative solutions to complex and persistent social problems (Zahra, Gedajlovic, Neubaum, & Shulman, 2009). Zahra et al. (2009, p. 522) have defined it to "encompass the activities and processes undertaken

to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organizations in an innovative manner". It stemmed from its importance in addressing social problems and enriching communities and societies (Zahra et al., 2009) and it is characterised with providing the poor with cheaper options that allows them to substantially improve their living standards (Santos, 2012) and by deploying a new business models that addressed basic human needs (Seelos & Mair, 2005).

They have been noted to play a vital role in ameliorating adverse social conditions, especially in underdeveloped and emerging economies where resource scarcity and corruption among governments and even NGOs severely limit the attention given to serious social needs (Prahalad, 2005; Zahra, Rawhouser, Bhawe, Neubaum, & Hayton, 2008).

Although social entrepreneurs usually start with small initiatives, they often target problems that have a local expression but global relevance, such as access to water, promoting small-business creation, reintegration of individuals into the workforce or waste management.

Based on the works of social entrepreneurship pioneers like Hayak, Kirzner and Schumpeter, Zahra and his colleagues, three types of social entrepreneurs were identified: the Social Bricoleur, Social Constructionist, and Social Engineer Ardichvili, Cardozo, and Ray (2003). Social Bricoleurs focuses on discovering and addressing local social needs on a small-scale while the social Constructionists exploited opportunities and market failures by filling gaps to underserved clients in order to introduce reforms and innovations to the broader social system. The social Engineers recognizes systemic problems within existing social structures and addresses them by introducing revolutionary change. As a result, these entrepreneurs often destroy dated systems, and replace them with newer and more suitable ones.

A central argument revolving around the discourse of social entrepreneurship is the difference between social value and profit. The likes of Certo and Miller (2008) have argued that "social value has little to do with profits but instead involves the fulfilment of basic and longstanding needs such as providing food, water, shelter, education and medical services to those members of society who are in need". Hence even though profit is what keeps an entrepreneur in business, it is not the main motive of the social entrepreneurship field (Santos, 2012). To social entrepreneurs, entrepreneurship is not only concerned with business success, as measured by profits, but also with subjective welfare and non-economic well-being.

### **Circular Entrepreneurs**

A circular entrepreneur is defined as an agent who promotes change and exploits opportunities, with the purpose to do business according to the principles of the circular economy concept (Daalderop,

2016). From this perspective, innovative entrepreneurial activities done in line with the principles of the circular economy can be described to cause creative destruction to an existing linear economic system. Here the circular economy can be seen as a wider system that sustainable entrepreneurs can adopt to help them change the institutions into a new, more supportive system. *“The challenge for these entrepreneurs is, how to transition to a circular economy when constrained by an institutional system that is aligned with the status quo of a linear economy”* (Fisher, 2015).

### **Necessity Entrepreneurs**

Necessity is the factor that forces a person into entrepreneurial activities. Necessity entrepreneurs have been said to engage in entrepreneurship to avoid unemployment (Reynolds, Bygrave, Autio, Cox, & Hay, 2002). Thus, the person did not choose to become an entrepreneur because s/he sees a business opportunity; entrepreneurship was the only viable option left for survival. In the literature, they make up an important part of the total set of entrepreneurs in developing countries, and are relatively less common in developed countries. In 2004, the Global Entrepreneurship Monitor (GEM) report on Ghana noted that more than 97% of individuals starting a business reported doing it because of either *opportunity* or necessity. These figures saw an improvement in the 2012 GEM data which suggest that new Ghanaian entrepreneurs see themselves as being opportunity-driven (51%), rather than forced to open their own business out of necessity (28%).

One reason attributed to the high rates of necessity entrepreneurship in developing countries is the size of the informal sector. Hence people who become entrepreneurs to avoid unemployment are likely starting low-skill, small-scale, subsistence activities.

### **Theorizing the entrepreneurial idea and opportunity development process.**

Theorizing concepts and emerging themes are relevant in this research as it aims to build a framework with which the data collected will be set and analysed. It will help to put the data in perspective and in light of the works and theories built by others when answering the research questions.

## **2.2 Opportunity Conception and generation**

Identifying and selecting the right opportunities for new businesses are among the most important abilities of a successful entrepreneur (Stevenson, Roberts, & Grousbeck, 1985). In broad terms, an opportunity is the chance to meet a market need, interest or want through a creative combination of resources to deliver superior value (Casson, 1982; I. Kirzner, 1973; Schumpeter, 1934). But “opportunities” are also described as a range of phenomena that begins unformed and become more developed through time. This range of activities and phenomena is referred to as the *entrepreneurial*

*process* in this research. In its most elemental form, what may later be called an “opportunity” may appear as an “imprecisely-defined market need, or un- or underemployed resources or capabilities” (I. M. Kirzner, 1997).

Opportunities come in different forms some of which have been suggest being a direct result of momentary insights (e.g., discovery) while others adopt a process perspective (e.g., creation or development). Therefore, explaining the discovery, creation and or development aspects of opportunities is pertinent to entrepreneurship research as posited by Venkataraman (1997).

### Discovery.

From the earlier literature of I. Kirzner (1973), opportunity has largely been considered as a process of **discovering** something already formed. It was further argued to include the distinct processes of sensing or perceiving market needs and/or underemployed resources; recognizing or discovering a ‘fit’ between particular markets needs and resources (De Koning & Muzyka, 1999; Hills, 1995). In this regard, Hills, Lumpkin, and Singh (1997) have also indicated that entrepreneurs’ *networks* are important for opportunity recognition. This argument is based on Granovetter (1973) classic article on the ‘strength of weak ties’, which argues that weak ties (including casual acquaintances) are ‘bridges’ to information sources not necessarily contained within an individual’s strong-tie network (including friends and family). A network of weak ties: one used to gather general information that could lead to the identification of an opportunity (Ardichvili et al., 2003). The process or act of discovering or recognising opportunities comes in different forms, among which are: **Intentional discovery or recognition**, where one is actively engaged in venture idea generation check or search because of the desire to start a new venture, or on how a given resource could be commercialized, or on how an unfulfilled customer need could be addressed (Jolly, 1997).

Another way of opportunity discovery is through **accidental** means. Unlike cases of intentional opportunity, accidental discovery is where the generation of opportunity or venture ideas happens unintentionally. In recent years, many researchers have argued that people do not search for opportunities, but, rather, happen to recognize the value of new information, which they receive. These entrepreneurs are in a ‘receptive’ mood, though not engaged in a formal or systematic search process. Based on the above assertion, Ardichvili et al. (2003) hypothesized that, in a state of ‘passive search,’ entrepreneurs with higher entrepreneurial alertness will be more likely to experience an ‘accidental’ discovery of an opportunity. Entrepreneurial alertness appears to be a more powerful determinant of discovery accidental or purposive than level of activeness of search.

### Opportunity Creation

Aside discovering opportunity, it can also be created. Creation is a process of bringing into being ideas that are both novel and useful (Amabile, 1996; Sternberg & O'Hara, 1999). As Afuah (2003, p. 13) explains: "Generating good ideas or adopting a new one, in and of itself, is only the start. To be innovative, an idea must be converted into a product or service that customers want". Creating a business concept that matches market needs with resources, must logically follow perception of both the needs of the consumer and the resources available. But business concept creation is more than perception and discovery. The creation concept involves redirecting or recombining resources in order to create and deliver value superior to that currently available. The creation concept may go well beyond adjustment of current matches of resources and needs which could even lead to dramatic restructuring of an existing business or 'radical innovation.'

## **2.3 Triggers, Goals and Motivations of entrepreneurial businesses and ideas**

Aside the way ideas are conceived, other factors and reasons prompt the thought of venturing into entrepreneurship either as a solution or a means to an end. These factors or reasons are referred to as triggers, goals or motivations this research. The role of triggers in idea generation has received significant attention from creativity and innovation scholars and has also caught the interest of some entrepreneurship researchers (Bhave, 1994). Typically, the literature in these domains has studied idea generation as a result of either a recognized customer segment or customer need ("market pull"; (Brown, 2008; Smith, 1998) or a resource that is to be commercialized ("resource push";(Jolly, 1997). Beyond the traditional classification of resource push and market pull, people may also engage in new firm creation simply because of their desire to be an entrepreneur, without yet knowing specifically what they are going to do.

### **2.3.1 Resource push as a trigger or motivation.**

Entrepreneurial opportunities are said to exist when different agents have insight into the value of resources that other agents do not, and the agents with the insight act upon these unexploited opportunities (Casson, 1982; I. Kirzner, 1973). The (un)availability of any resource is a key element in the decision to exploit a venture concept or business idea; therefore, resource availability is a key dimension in entrepreneurial motivation (Morales-Gualdrón, Gutiérrez-Gracia, & Dobón, 2009). Some individuals may start their entrepreneurial efforts by seeking to use the resources they have at hand for productive purposes while others will start because there is an abundant resource for which they seek to find purpose or a business venture from.

### 2.3.2 Market pull

Market pull is when the market demand of a solution to a problem or need in the marketplace triggers the development of a new product. Simply put, it is when an opportunity emerges from a need or problem that cries out for a solution. As described by T.J. Mierzwa (2018), it is the pressure, desire and interest from the market which tells entrepreneurs they need to do something. In this regard, external needs are recognised which triggers a search for potential solutions and leads to an innovative offering in the marketplace. What this basically does is taking ideas from the marketplace and finding technologies or resources to respond to them.

### 2.3.3 A desire to start

The decision to start a venture precedes opportunity recognition for some entrepreneurs. For these entrepreneurs, the decision is influenced by personal and environmental circumstances at the time. The reasons given for the desire to start a business were numerous, but what they all had in common was that, the decision preceded the choice of a particular opportunity for committed pursuit. Bhawe (2004) recognised that most entrepreneurs who decided to begin ventures in this manner recognised vastly more opportunities than they seriously chose to pursue. These decisions to start was therefore followed by an 'intentional' search to align the prospective entrepreneurs' knowledge, experience, skills and other resources with market needs. In seeking this alignment, an entrepreneur eliminates inappropriate opportunities.

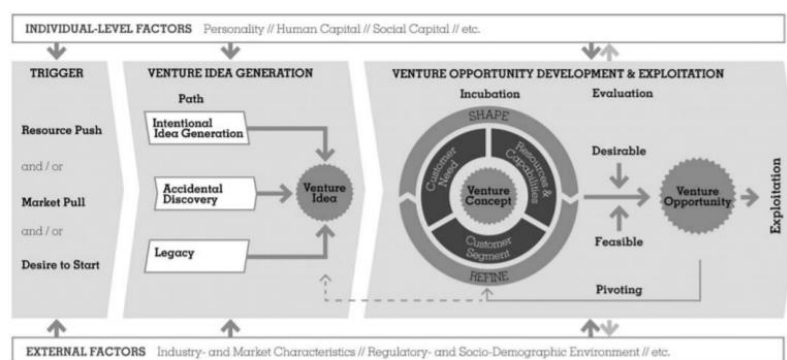


Figure 2. Theoretical framework as presented by Vogel 2016.

### 2.3.4 Social push

A true entrepreneurial behaviour according to Baker et al., (2005) is one motivated by several personal reasons and influenced by the social context or background in which that behaviour takes place. As Baker, Gedajlovic, and Lubatkin (2005) pointed out, social circumstances and idiosyncratic (personal) motives exert an influence over the way an individual perceives entrepreneurial activities. As was noted by Serviere (2010), the conditions for entrepreneurship are far from ideal in several world regions where rapidly growing new ventures are actually the exception, not the expected outcome.



Baker et al. (2005) further buttresses the assertion that there are nations where starting a business becomes the only viable or possible option because of the lack of opportunities for employment and the non-existent or inadequate social safety networks. To some entrepreneurs, their economically challenged environment influences their decision. These entrepreneurship benefits the individual, the locals and the national economy at large.

### 2.3.5 Altruism

Consistent with Simon (1993) and Eshel, Samuelson, and Shaked (1998), it is believed that *altruism* is one of the factors that triggers individuals to start a venture. Their research posits that when individuals see that the living conditions of their children or family members are not optimal and that they are possibly suffering because of poverty, altruism moves them to provide for their families. Altruism, or the caring feeling that they experience for their families and communities, generates dissatisfaction. Research conducted on family businesses has determined altruism to be one of these motives. Based on the altruism literature, Schulze, Lubatkin, and Dino (2003) found that *parental altruism* is the motivation behind some family businesses. Parents use their business as a means to provide family members with secured employment, benefits and privileges. Altruism is an aspect of social embeddedness (Greenwood, 2003) that induces parents to care and provide for their offspring (Eshel et al., 1998; Simon, 1993).

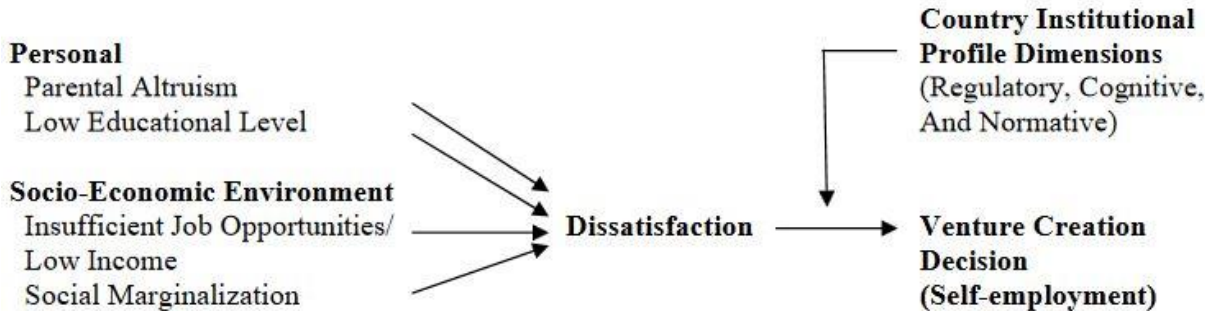


Figure 3. Venture Creation Decision Model for Necessity Entrepreneurship presented by Serviere, 2010.

### 2.4 The process of Venture Opportunity development

Opportunities begin as simple concepts that become more elaborate as entrepreneurs develop them. The process involves proactive efforts much like that of new product development, but the developmental process gives rise to an entire business, not just a product (Pavia, 1991). As Ardichvili et al. (2003) noted, opportunities develop as individuals shape element of all ideas into full-blown business plans. But the process of opportunity development is conceptually distinct from opportunity recognition or discovery. Entrepreneurs identify business opportunities to create and deliver value for stakeholders in prospective ventures. The *“Careful investigation of and sensitivity to market needs as*

well as an ability to spot suboptimal deployment of resources may help an entrepreneur begin to develop an opportunity (which may or may not result in the formation of a business” (Ardichvili et al. (2003).

Opportunity development also involves entrepreneurs’ creative work. The need or resource ‘recognized’ cannot become a viable business without its ‘development.’ The creation of successful businesses follows a successful opportunity development process. *This includes recognition of an opportunity, its evaluation and development.* Therefore, opportunity development is regarded as a continuous, proactive process essential to the formation of a business. The development process is cyclical and iterative: thus, an entrepreneur is likely to conduct evaluations several times at different stages of the development process and this evaluation could also lead to the recognition of additional opportunities or adjustments to the initial vision.

The process of Opportunity development into Venture Opportunity (Business) involves phases which are briefly highlighted below.

### **Incubation and Evaluation**

This opportunity development stage is both iterative and dynamic, encompassing learning under conditions of uncertainty and as a consequence of trial-and-error (Corbett, 2005; Dimov, 2007; McGrath & MacMillan, 2000). As Thomas Edison said, there are always difficulties arising after the initial idea is generated and intense work is required before the commercial success or failure is reached (Friedel, Israel, & Finn, 1986).

This stage sees the entrepreneur collecting missing information and constructing a more refined image of what the future venture might look like. More specifically, the entrepreneur will shape and refine the venture concept and its underlying first-order dimensions, namely the customer segment, the customer need and the entrepreneur’s resources and capabilities (Abell, 1980). During the incubation phase, the entrepreneur seeks to understand and test whether there is a ‘product–market fit’ or whether adjustments need to be made to either the offering or the targeted customer segment. In plain language, the incubation cycle can be viewed as an entrepreneurial learning process, for accumulating missing information about the venture idea; for engaging in experiments (e.g., testing different pricing strategies); or for adapting, shaping, and refining the venture concept (Alvarez, Barney, & Anderson, 2013; Corbett, 2005; Garud & Gehman, 2012). At this stage, it is critical that the entrepreneur gathers sufficient information for an informed decision (evaluation), as to whether or not it appears to be both desirable and feasible (Krueger, 1993; McMullen & Shepherd, 2006) to move forward and launch a new venture, whether he or she will have to go back to incubation or even abandon the project altogether.

## **Exploitation.**

Irrespective of the nature of opportunity, the end goal is usually to develop a business or venture from the opportunity. It requires time and effort to take an idea from the conceptual level to a state where it is ready for exploitation\business (Garud & Giuliani, 2013; Ven, Polley, Garud, & Venkataraman, 1999) but once the entrepreneur has accumulated sufficient information and knowledge to assess whether it is desirable and feasible to create a new venture based on the current venture concept, he or she will move towards exploitation. Exploitation “refers to building efficient, full-scale operations for products or services created by, or derived from, a business opportunity” (Choi, Lévesque, & Shepherd, 2008). The degree of elaboration of the business or entrepreneurial concept, at the point where the entrepreneur evaluates it as being a desirable and feasible opportunity for a new venture, may vary considerably from case to case. Entrepreneurs will differ in their level of preparation for the exploitation process i.e., the amount of knowledge and information about the various dimensions of the venture concept and their belief in the correctness of their plans. Hence it is defined as a favourable combination of endogenously shaped and exogenously given circumstances that make it both desirable and feasible for an entrepreneur to exploit a business idea (venture concept) and to introduce a potentially value-adding product to the marketplace.

## **First Theoretical Summary**

The theory building process departs from the premise that entrepreneurship is a process which contributes to an economy based on conditions or factors functioning in that context. Also individuals decide or are triggered to engage in entrepreneurship for different reasons which serves as their motivation or goals. Based on these they tend to exhibit some characteristics of the kinds of entrepreneurs. Again, conceiving the idea is just the start of the process which entails an iterative process of information gathering, incubation, evaluating and finally deciding if the idea is ready for the market (exploitation).

The work of Serviere (2010) and (Vogel, 2016) captures the concepts and themes of the theory’s point of departure, therefore they are merged into new model (figure 7).The individual and external level factors as well as the educational and country institutional profile discussed by Vogel and Serviere respectively are excluded from the framework because they go beyond the scope of this research and extends the research objectives.

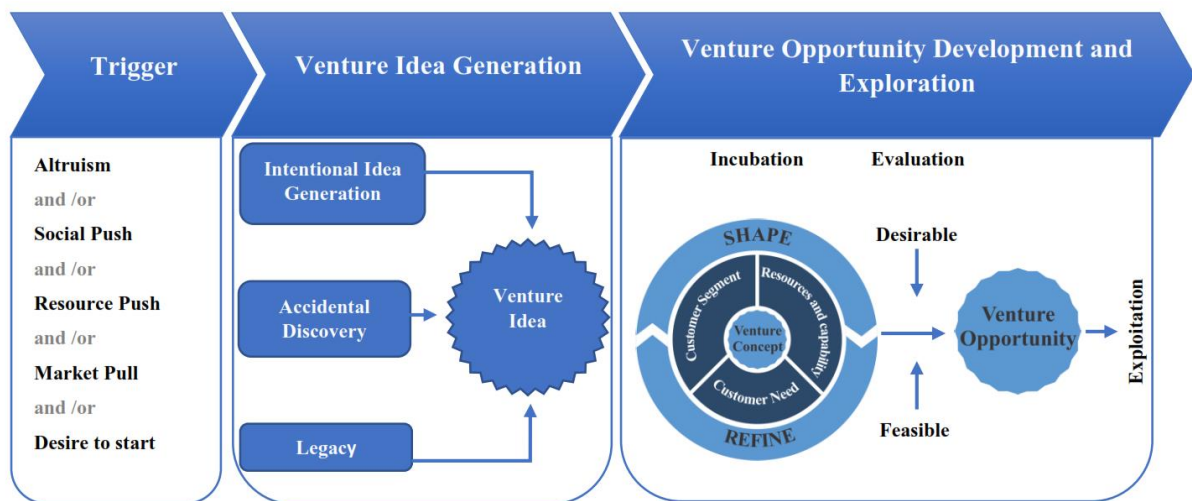


Figure 4 Combined and adapted theoretical framework of Vogel (2016) and Serveire (2010).

## 2.5 Enablers

Almost all entrepreneurs go through a triggering, goal or motivational phase from which they develop their ideas into products or business ideas but not everyone gets extra support or is exposed to enabling factors or condition like the few discussed below. These are set of activities, processes, programmes or activities entrepreneurs engage in to aid their entrepreneurial journey. This section of the theory building is to serve as a compliment to or an add-on to the venture development process discussed above.

### Mentoring

Entrepreneurial mentoring is widely regarded as an effective way to train novice entrepreneurs all over the world (Ting, Feng, & Qin, 2017). In this regard, Eby (2010, p. 505) defines mentorship as a “developmentally oriented interpersonal relationship that is typically between a more experienced individual (i.e., the mentor) and a less experienced individual (i.e., the protégé)”. In addition to national institutions that support new businesses, entrepreneurs need to establish and maintain contact with sources that provides information and advice in start-up processes. It is also believed that the greater the information and advice that individuals receive in their start-up phases, the greater the likelihood of sustaining their businesses (Serveire, 2010). Mentors are valuable sources of information at any stage of the entrepreneurial growth and they give fresh perspective on problems or ideas because they are not personally involved in the business. Aside the fact that investors trust entrepreneurs who are recommended by their friends, a successful mentor has an unlimited network of people who can benefit an entrepreneur’s career. All the guidance entrepreneurs’ gain from having a mentor literarily leapfrogs them to success<sup>3</sup>.

<sup>3</sup> <https://www.entrepreneur.com/encyclopedia/mentoring>. Accessed 26\04\2018

## Networking

According to the entrepreneurship literature, social networks are also a key prerequisite to starting a business, especially a successful one. Entrepreneurial networks function as resources to the entrepreneur, a source of new information and legitimacy. The more contacts an individual has to aid in locating funds and establishing relationships with suppliers and clients when starting a business, the more successful the endeavour should be. Access to a network provides the entrepreneur with select information that otherwise might not be readily available. Usually these networks provide relevant information regarding technology, experienced labour, capital accessibility and market opportunities. It is quite likely that the higher the cohesion levels within these networks, the more success these firms will achieve (Reynolds, 1991).

## Business model

The term “business model” refers to a description or model that represents a firm’s reasons for creating, distributing, and capturing value for its stakeholders (Haaker, Bouwman, Janssen, & de Reuver, 2017) or customers in this case. Magretta (2002) and Wirtz, Pistoia, Ullrich, and Göttel (2016) found that business models are used to lead businesses to success as structured management tools or theoretical concepts, which are broken down into components that contribute to decision-making processes. The business model describes the design or architecture of the value creation, delivery, and capture mechanisms it employs. The essence of a business model is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit. It thus reflects management's hypothesis about what customers want, how they want it, and how the enterprise can organize to best meet those needs, get paid for doing so, and make a profit. Casadesus-Masanell and Ricart (2010) argue that a business model is a direct result of strategy or a reflection of a firm’s realized strategy. According to Chesbrough and Rosenbloom (2002), the functions of a business model are “to articulate the value proposition, identify a market segment, define the structure of the value chain, estimate the cost structure and profit potential, describe the position of the firm within the value network, and formulate the competitive strategy.”

## Business strategy and long-term agenda

If you look at both the reasons for failure and the factors for success, it is clear that commitment to a plan is key. Business strategies are often compared to or confused with business models. A business strategy is sometimes defined simply as a firm's high-level plan for reaching specific business objectives. Strategies succeed when they lead to business growth, a strong competitive position, and strong financial performance. This does not mean it is completely inflexible, but it can stay its course.

When the high-level strategy fails, the firm must either change strategy or prepare to go out of business.

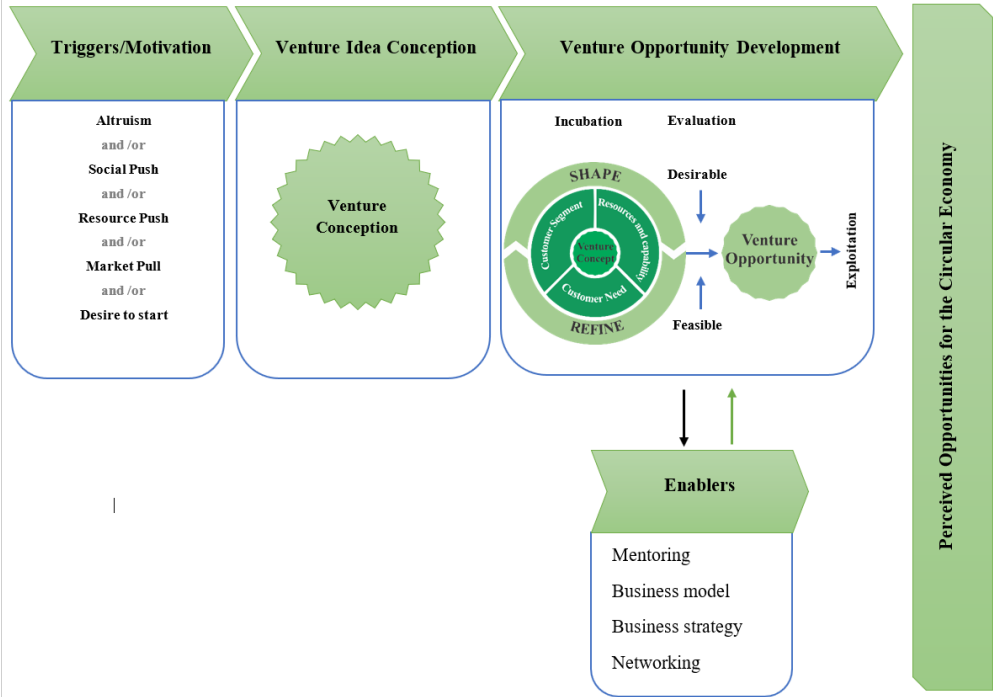


Figure 5. Theoretical framework

The theoretical framework is summarised in this diagram consisting of the triggers and motivations, which leads to the venture idea conception and then to the process of venture opportunity development. The enablers are add-ons to the whole entrepreneurial process, which contributes to the development of a good exploitation process and success factors of entrepreneurs. The final part (perceived opportunity for transitioning to the circular economy) will mainly constitute the results of this research.

It is hypothesized that, what triggers an entrepreneurial idea or opportunity, how well the idea is developed, the enablers used or received will to a large extent determine the success and failure probabilities of an entrepreneur as well as their perceived opportunities to transition to the circular economy. With these factors duly analysed, the tendency or susceptibility of incorporation the circular economy principles will be determined.

**Methodology**

**3.0 Overview of study field**

Ghana, a developing West African country is the study field. As a developing country, Ghana has experienced rapid economic growth rates, with average GDP growth of 16.30% which have primarily been attributed to the direct results of market-based activities of private enterprises (Bank, 2011;

Chironga, Leke, Lund, & van Wamelen, 2011). According to the Organization for Economic Cooperation and Development (OECD), private enterprises now account for 88.50% of economic activity in Ghana as opposed to 11.50% of government services (OECD, 2008). In this regard Ghana presents itself as a suitable location to engage entrepreneurial firms who are fast sprouting and gaining the support of the government, international organizations and the general populace.

This research uses multiple cases and mimicked an inductive approach according to the grounded theory method. An inductive approach was appropriate for this study because the literature offered little theoretical insight into how to conceptualize entrepreneurs in developing economies more especially with regards to the circular economy. Data was collected from four regions in Ghana, namely Central, Greater Accra, Eastern, and Ashanti regions as shown in figure 2, these regions were not pre-selected prior to the field work but where as a result of the locations of entrepreneurs identified for this research. Most of the entrepreneurs either grew up in these locations or moved because of their inability to acquire working spaces in the cities.

# Sampled Entrepreneurs and their locations in Ghana.

## Legend

- Sample Point
- Ghana Region

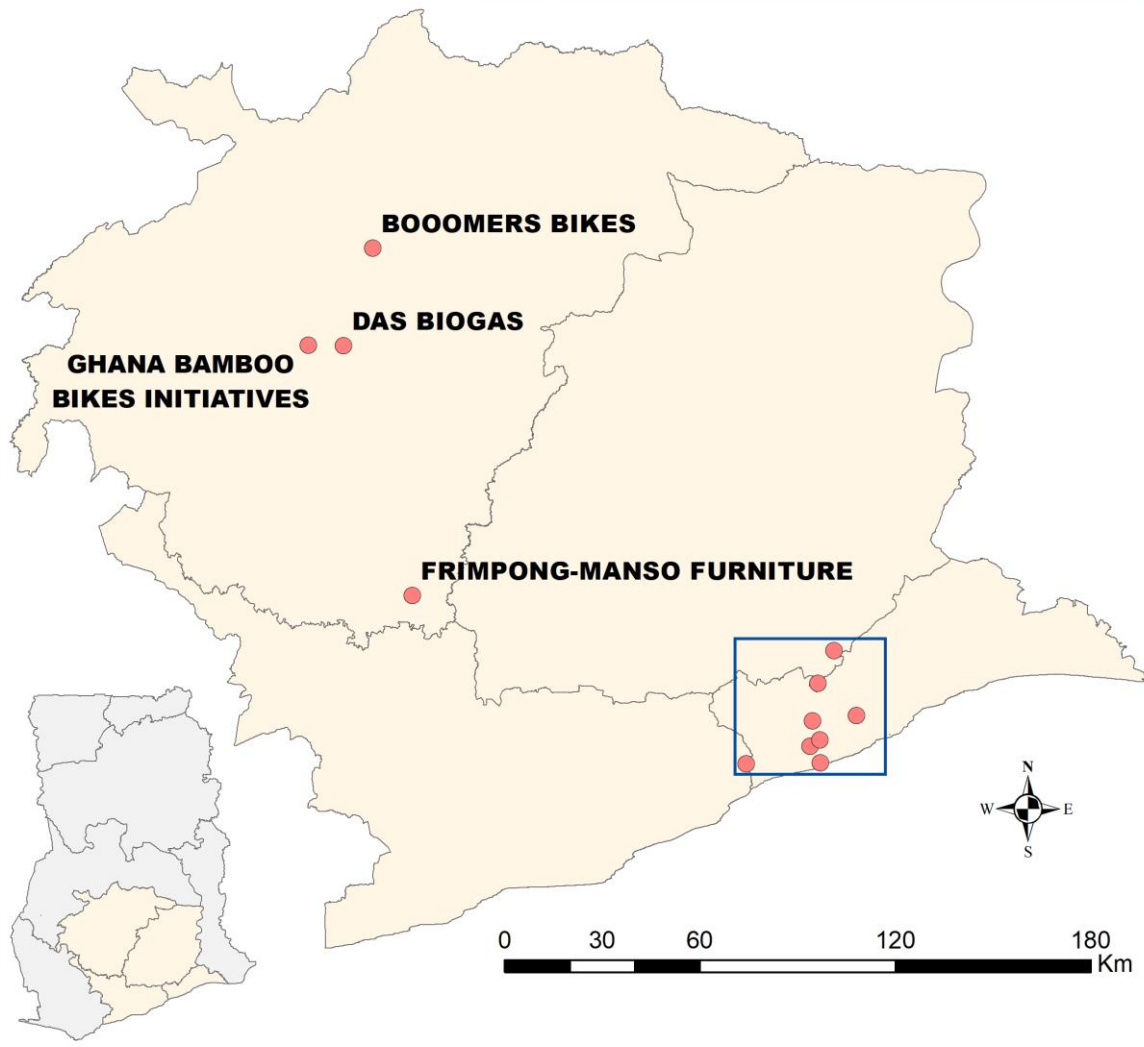


Figure 6. Sampled Entrepreneurs and their locations in Ghana.



### **3.1 Research design: A Qualitative Approach**

This research employed a qualitative research approach to help understand and present the experiences and actions of entrepreneurs as they encounter, engage and live through their responsibilities, situations or every day work. This method is particularly useful because little is known about circular economy among the entrepreneurs in Ghana and insufficient literature or scholarly works exist about the subject in this regard.

This approach helped to probe into their daily experiences, entrepreneurial practices, goals, motivations, processes, strategies among others to explore their susceptibility of incorporating circular economy (principles) into their businesses as well as their perceived opportunities. The qualitative approach ultimately helps or leads to the building or formulation of hypothesis which could further be researched using other approaches.

### **3.2 Sampling Procedure and Size**

The concept of population is crucial, because the population defines the set of entities from which the research sample is to be drawn. Therefore, selecting an appropriate population controls extraneous variation and helps to define the limits for generalizing the findings (Eisenhardt, 1989). For that matter, the sampling frame for this study was developed from the Ghana Business Directory, made in Ghana goods website and media coverage stories. The two basic criteria used for the selection of firms was: (1) firms that are into the manufacturing of physical products. The reason for delineating firms that produce physical products is because the principle of circular economy is most useful in the manufacturing or product design and process innovation phases. Product design is one of the main building blocks of the circular economy. Hence firms into the provision of services (non-tangible goods) were exempted.

(2) Firms that have been operating for 48 months or less. This criterion was not always possible to verify from the online information (desk research) prior to the interview sections hence two of the companies had been in existence more than the stipulated time. One of the two firms is a waste management company but their products under consideration for this research was developed about a year and half ago. The other firm (shoe making) is one that has been handed down through the family for two decades. The two brothers currently in charge have been running the business six years. Their effect will be discussed in the limitation.

With regards to these criteria, the purposive random sampling and snowballing techniques were applied. Nine firms were sampled with the purposive technique with the other three through referral

(snowballing). A cross sectional (one time) design was used and a total of 12 entrepreneurs were interviewed.

### **3.3 Methods\ Strategy of Enquiry**

#### **Critical Incidence technique**

The Critical incidence technique (CIT) is a method of gathering facts (incidents) from domain experts or less experienced users of an existing system to gain knowledge of how to improve the performance of the individuals involved. Even though it has its roots in the health sciences, organizational development and market research, it is a flexible set of principles that can be modified and adapted to meet the specific situation at hand. Three aspects or information needs to be obtained when using the CIT. Thus: (1) a description of the situation that led to the incident, (2) the actions or behaviours of the focal person in the incident, and (3) the results or outcome of those actions (JC Flanagan., 1954)

In employing this method in the research, entrepreneurs were asked to tell a brief history of their firm and what they were doing prior to becoming entrepreneurs, which is analogous to a description of the situation that led to the incident (entrepreneurship). (2) The actions or behaviours of the focal person in the incident is also linked with their motivation and motives as entrepreneurs and (3) the results or outcome of those actions is related to their successes, annual turnovers and findings, which would be discussed in subsequent chapters.

#### **Desk Research**

Desk research was conducted to gain an understanding of the scope of entrepreneurs, firms, organizations, trends in the development of entrepreneurial activities, assumed motives and motivations of entrepreneurs and last but not least the circular economy. The sources of the desk research were articles, journals, past theses, company websites, publications, media coverage, videos, and written interviews with free access. In parallel to the desk research, the interview questions were developed through an iterative process of modifications.

#### **Interviews**

The semi-structured interview used was to obtain both retrospective and real-time accounts from people experiencing or practicing some form of entrepreneurship in Ghana. The purpose of the interviews was twofold: to get access to internal information to review the results of the desk research, to probe and identify entrepreneurial practices. The information available online is very scanty and provided basic understanding of the companies. It did not provide information such as the motives of the entrepreneur, their motivations, their partnerships, finance, ease of obtaining materials and or the sources of their materials hence a purpose of the interviews. The day to day running of the firm's

production processes and business strategies also gave a good reflection and understanding of the practices which can inform the feasibility, susceptibility or perceived opportunity of incorporating circular economy in their entrepreneurial ventures.

The results of the desk research were reviewed during interviews to verify the information that was collected from various sources. Missing information were filled in and misinterpreted information was corrected during the interviews as some of the entrepreneurs had not updated their websites in a while or some information reported in media coverages did not give a true depiction of the actual situation.

Interviews were conducted with mostly CEOs (entrepreneurs) of the firm and in other cases with the projects director, head of research department and development directors. The semi-structured interviews were scheduled for an average of 30 minutes. However, most lasted longer than the planned time. The materials and data obtained from the interviews was primary data that were recorded with due permission from respondents and were transcribed. These materials were analysed using the inductive theory methods and presented with descriptive narratives.

*Table 1. List of firms interviewed*

Name of Firm\organization	Location	Region
<b>BOOMERS BIKES</b>	Jamase, Ashanti-Mampong	Ashanti
<b>GHANA BAMBOO BIKES INITIATIVES</b>	Adum-Kumasi	Ashanti
<b>DAS BIOGAS</b>	Anwomaso- Kumasi	Ashanti
<b>FRIMPONG-MANSO FURNITURE</b>	Hwerimoasi, New Edubiase	Ashanti
<b>YABBS CREATIONS</b>	Kasoa	Central
<b>ABAN</b>	Aburi	Eastern
<b>ZAACOAL</b>	Dodowa	Eastern
<b>AMANZI SHOES</b>	Accra central	Greater Accra
<b>AKWABAH ARTS</b>	Ashesi University	Greater Accra
<b>E-JUICE</b>	Dome	Greater Accra
<b>TRASHY BAGS</b>	Abelemkpe	Greater Accra
<b>ZOOMLION</b>	Afariwa	Greater Accra

### 3.4 Inductive Process

Traditionally, authors have developed theory by combining observations from previous literature, common sense, and experience (Eisenhardt, 1989). Glaser and Strauss (1967) proposed grounded theory as a practical method for conducting research that focuses on the interpretive process by analysing "the actual production of meanings and concepts used by social actors in real settings" (Gephart, 2004: 457). It is also described as an organic process of theory emergence based on how well data fit conceptual categories identified by an observer, by how well the categories explain or predict ongoing interpretations and by how relevant the categories are to the core issues being observed. Grounded theory fits the explorative nature of this research which is probing into the characteristics and distinguishing features of entrepreneurs in Ghana and possibilities of incorporating circular economy thinking and principles into their production processes. Figure 3 gives an overview of the typical elements of a grounded theory methodology on the right and how I put these steps into practice on the left.

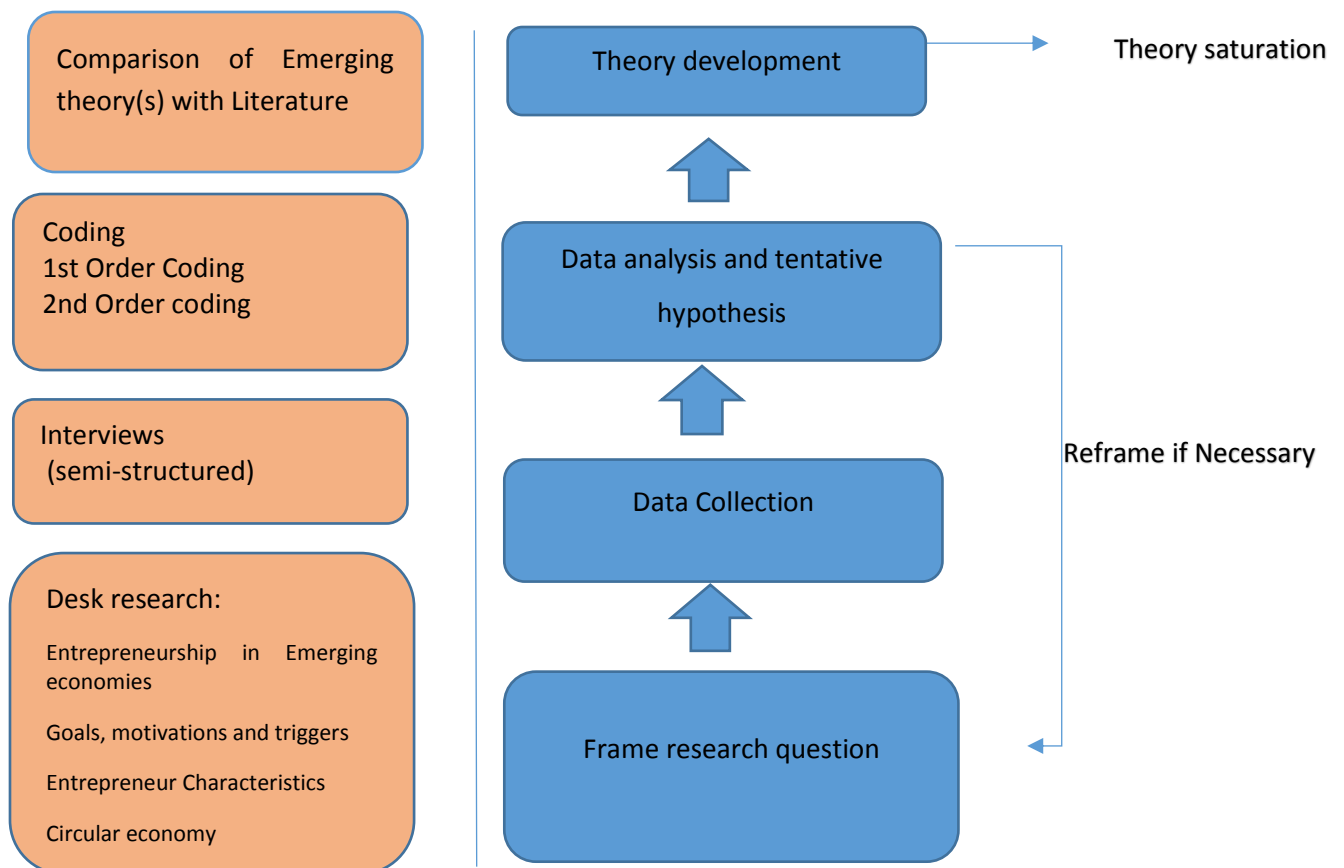


Figure 7. typical elements of a grounded theory methodology adopted and modified from Bitsch, 2005.

#### 3.4.1 First and Second order analysis

In this section the researcher describes which steps were taken in the data analysis, based on (Bitsch, 2005; Creswell, 2009; Eisenhardt, 1989). The data analysis and theory building is in accordance with the iterative nature of grounded theory, where the researcher moved between data, codes, emerging themes, concepts, relationships and relevant literature to advance the analysis process (Gioia, Corley, & Hamilton, 2013). I made use of the first and second order coding analysis approach as explained in Gioia et al. (2013). In this grounded theory, the interpretive research approach is used. The theoretical concepts and framework are grounded in and allowed to emerge from the data and analysis that follow (Glaser & Strauss, 1967; Strauss and Corbin, 1990), thus no prior theory guided the data collection and analysis.

### Development Process

With the data collected and transcribed, the heart of the first order analysis (content and discourse analysis) was interpreting the data and labelling pieces of information accordingly (Eisenhardt, 1989). The labels are the so-called codes (Creswell, 2009) which consisted of paragraphs, themes, keywords and ways of expression during the interviews. Excel was used, which helped to code at various stages in accordance with the evolving nature of the generated insight. To start with, it was useful to get an overview of the data and identify important words or groups of words and to label them. The actual coding started with organizing the data into segments and labelling them one by one, i.e. initial coding (Creswell, 2009) (Birks & Mills, 2010; Corbin & Strauss, 2015). In this phase “informant-centric terms and codes” were used (Gioia et al., 2013, p. 18).

To get a better overview and control of the data, the number of codes were decreased through grouping similar terms together. Naturally, the labels of these categories started to distance themselves from the original (Gioia et al., 2013). Over 50 thematic concepts (more general, less well-specified notion capturing qualities that describe or explain the phenomenon of theoretical interest) emerged at this stage (Appendix 1). With literature already reviewed, it gave an idea of existing ideologies and made it easier to find appropriate terminologies for the codes. This process most importantly increased the rigour of the research, because both the terms of informants and those of researchers are used in the analysis. This way, both voices are heard and the link between the data and the researcher’s process of sense making was easier to trace.

With increasing involvement of the researcher’s interpretation in labelling categories, formulating questions and construction of concept, 12 constructs<sup>4</sup> were further developed. To compliment this, my supervisor reviewed the codes as the “devils’ advocates” as he did not have any prior visit of the

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<sup>4</sup> Abstract theoretical formulations about a phenomenon of interest. Edwards & Bagozzi, 2000; Morgeson & Hofmann, 1999; Pedhazur & Schmelkin, 1991

cases. This increased the construct validity, because it brings in another interpretation or view on the study (Eisenhardt, 1989). At the end of each 'coding session' (one per case), related codes were grouped and revisited with literature to determine their relationship. By this way, new codes were formed as an umbrella for the existing ones and were renamed to be consistent or formed new categories. The 12 constructs developed from the thematic concepts are the foundations of the findings and discussions in the elaborated in the subsequent chapters.

From the first and second order analysis, substantive theory(s), which is a strategic link in the formulation and generation of grounded formal theory was identified. Even though formal theory can be generated directly from data, it is more desirable, and usually necessary, to start the formal theory from a substantive one (an already established theory). The substantive theory in this case does not only provide a stimulus to a "good idea" but it also gave an initial direction in developing relevant categories and properties and in choosing possible modes of integration (Glaser & Strauss, 1967: 79).

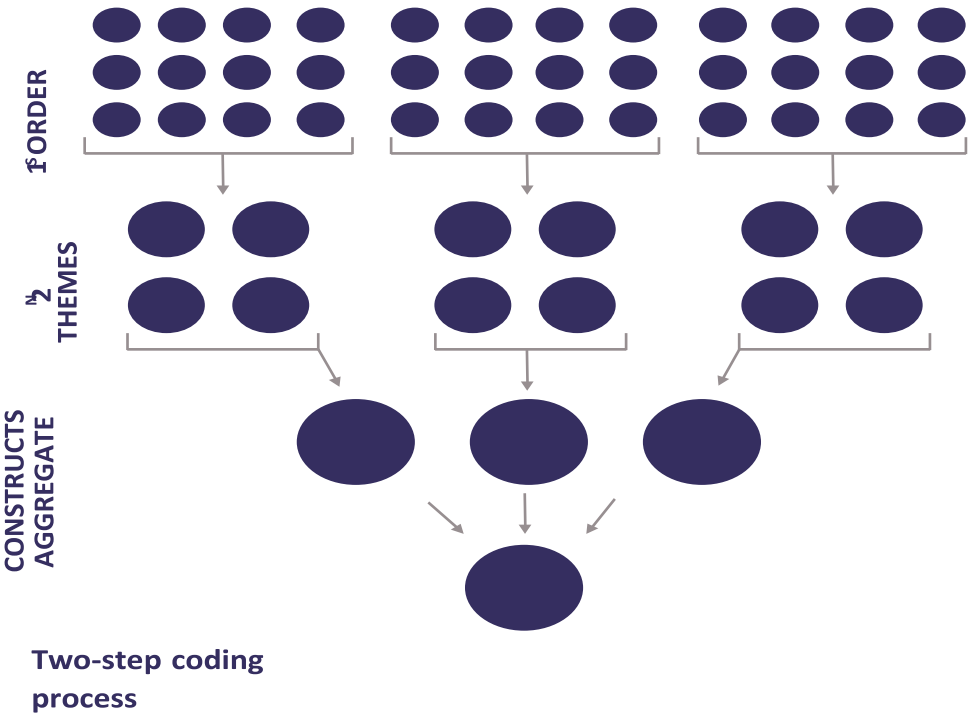


Figure 8. Tree diagram of the two step coding process

### 4.0 Findings

The main objective of this section is to present the results of the interviews and describe the characterizing features and experiences of sampled entrepreneurs in Ghana mainly categorizing them

into goals, motivations, the venture process, enablers and perceived opportunity to transition towards circularity. These categories mainly constitute the main findings summarised below. .

## 4.1 Entrepreneurial Goals and Motivations

The goals and motivations why individuals engaged in entrepreneurship were mostly used or explained interchangeably. The motivations were mostly their process to reach the goals. The literature identified resource push, market pull, the desire to start, social push and altruism as the main motivations or triggering factors for entrepreneurs but according to the interviews conducted with entrepreneurs in Ghana, in addition to the triggers and motivations identified in the literature, they are also motivated and triggered by the circumstances in the environment they found themselves. Some of their goals and motivations are:

- to help with the social problem of unemployment
- help the farmers minimise post-harvest loss during bumper harvest
- to empower the young and youth in rural communities and to alleviate poverty using the company
- to help the uneducated youth in the community
- To get rid of coconut waste on the streets.
- For a clean environment and awareness creation.
- To become a leading and innovative waste management company
- to help solve the severe environmental degradation from burning scrap
- Creating an opportunity to vocationally train the less privileged as a way of social inclusion

The list of motives and triggers above overgeneralises social environmental circumstances as their main goals but in actual sense, even though the problem, which triggered their entrepreneurial ideas seemed social, some of its underlying causes were different. Below are examples of seemingly social triggers with other underlying triggers (extraneous variables). The respondents from E-Juice expressed his goal and trigger as:

*"We realized that in the agro sector there is a lot of products (fruits) during bumper harvest hence post-harvest losses. We lose close to 40% of the total harvest. And about 10-15% goes waste. So, we had the idea to go into processing so that in the bumper seasons so we can help farmers reduce their losses [...] and we are "motivated to help the farmers reduce their losses so that all their struggles don't go waste"*

The underlying problem to the excess product loss during bumper harvest in Ghana is the lack of infrastructure specifically good roads to transport food to cities from villages and the lack of processing

companies to handle the excess from the harvest. So even though the entrepreneur's goal and motivation is to prevent farmers from running at losses, there is an underlying factor, which is poor infrastructural development. His motive of preventing food waste and farmers loss, can be viewed as a resource push according to the literature because it is the abundance of the resource that triggered his business idea.

Empowering deprived communities from which some entrepreneurs emerged was also a motivation. The CEO of Boomers bikes puts it as;

*"I'm motivated by my life. I was born in the rural area, grew up here and schooled mostly here so I'm always motivated to do more so that the young ones can grow and benefit from something we didn't get ". Therefore, "the goal is to see how we can empower the young and youth in rural communities and to alleviate poverty using our company."*

The bamboo bike making does not only offer vocational training to the youth in his village (where the company is located) but also provides employment which prevents the youth from moving out in search of non-existent white colour jobs.

Entrepreneurial ideas were triggered for some people too, by the abundance of a resource which either caused environmental problems or was considered waste. For the founder of Zaacool, the abundance of coconut sellers on the Oxford Street of Accra and its concurrent waste on the beaches and street motivated him to find a solution to them. He explained:

*"One thing that unconsciously caught my attention was the fact that on every junction, someone sold coconut. So, I thought to myself what they did with the coconut husk (waste) [...] I found a seller using the coconut husk in her fire so, we thought if she was using it as her source of energy then it is also possible to make something from the waste [...] we decided to take a trip to the north to see the charcoal making process, understand the art, theory or science behind the production process".* Even though the abundance of a resource (resource push) aided his entrepreneurial idea, he was also motivated to solve an environmental problem which was littering on the beaches of Accra.

For others just as theorised by Vogel, the desire to start a business in the quest to solve an underlying social and economic problem of unemployment was their motivation. The Ghana Bamboo bikes initiative explained:

*"Many idle hands were running around with no forth coming jobs. So, we were faced with the challenge of what we could do to help. And the solution we were looking at was one that had a local context. So, we looked around to see which resource was underutilize and bamboo was what we found. It was abundant but under-utilized. We experimented products that could be made from*



bamboo and finally landed on the bamboo bike". From their narration, they were triggered and motivated by two of the triggers identified in the literature thus the desire to start with a resource that was local, abundant and accessible (resource push).

## **4.2 The process of Venture Opportunity development: NGO as a market accessing tool and idea nursery.**

As discussed in the theory-building chapter, entrepreneurs go through a series of activities and processes in building and developing their ideas into fully blown businesses. According to the findings from the interviews, operating an NGO or an affiliation to one was an important process the entrepreneurs used to develop their ideas.

During the study, it became evident that half of the sampled entrepreneurs had NGOs or were affiliated to one. NGOs are noted to be more socially conscious and seek to address issues overlooked by governments and also noted from literature to be located in less developed areas or countries.

Most of the businesses currently run by these entrepreneurs were projects started under NGOs and then later registered as a business on its own when they succeeded and needed support/investment for expansion or growth. NGOs in Ghana are mostly financed by donor institutions, are non-taxable among others. Projects which seek to provide youths and communities with employment, solve environmental problems or bridge infrastructural barriers were run under these status. From a business perspective, the action of registering an NGO as a limited liability when its project succeeded can be viewed as a market testing or accessing strategy. Thus these 'projects' were either financed by a third party, family and friends and if they did not succeed, there was nothing to lose. This situation was experienced by most entrepreneurs among which included the respondent of the Ghana Bamboo bike initiative who said:

*"it started as a spin off from a mother institution called bright generation community foundation, an NGO and had the bamboo bike as one of its projects. Later as the bamboo bike got life of its own it was registered as an independent organization. The NGO had lots of project running but the most successful was the Bamboo Bike Initiative."*

Re-echoing this assertion again is the CEO of Boomers International who explained that

*"The bicycle was run as one of the projects under our NGO for 8 years. A guy from California reinvented the idea, we had discussions and agreed to come into partnership. The partnership was with the NGO called Yonso [...] in 2013 there was the need to scale up because of the large demand for the bike but did not have enough capital and it was difficult to get people to invest in an NGO. So, we thought why*

*not commercialize the operations so that we attract investors and at the same time grow more and be able to impact more rural communities. "*

For another institution like Trashy bags, all their projects are still run under the NGO with support from the trade embassy, French embassy, British high commission and Australian high commission. All their projects have been very successful and on-going in the last 3 years. It is difficult to say if it is only a matter of time for them to commercialise the activities of the NGO.

These examples fits the evaluation phase of the idea development process where entrepreneurs have to test the feasibility and desirability of their ideas or product before they moved into full exploitation.

*Table 2. Entrepreneurs and their relation to NGOs*

<b>Entrepreneur</b>	<b>Former NGO</b>	<b>Affiliated to an NGO</b>
<b>Bamboo Bikes</b>	X	
<b>Boomers</b>	X	
<b>Akwaaba</b>		X
<b>ABAN</b>	X	
<b>Trashy bags</b>	X (still an NGO)	
<b>Yabbs creation</b>		X

### 4.3 Enablers

The enablers discussed previously were prevalent among the entrepreneurs. These enablers as well as financing and their impact on the entrepreneurial journey and development are presented below.

#### 4.3.1 Connection or contact with mentors and Support program

Having contact with mentors, support programs, hub or aid organizations to a large extent determined success rates of entrepreneurial firms.

Entrepreneurial mentoring is widely regarded as an effective way to train novice entrepreneurs all over the world. From the research conducted it was realised that most entrepreneurs either have mentors or have had mentors guide them at a point in time. In Ghana, these mentoring comes in the form of programmes run and managed by donor institutions such as US-AID, UNDP, World Bank, UK-AID, Tony Elumelu Centre of entrepreneurship, Seed Initiative among others. These support schemes were equally beneficial for NGOs in the sense that, the individuals who led these organizations joined such programmes to develop their ideas and to seek support for a ‘charitable’ course.

During these programmes, entrepreneurs are put in groups and led by experts in the respective fields to share information, experiences, advice and support. These programmes roll out as a series of activities usually in the span of months where entrepreneurs are made to share their business ideas, have their peers assess them and jointly develop solutions for the gaps or loopholes.

During these programmes, entrepreneurs were made to present their business models and market strategies. In this way, they were obliged to think beyond the social goals, motives and motivations of their ideas. To these entrepreneurs, the most interesting part of these programmes is that they are made to distinguish the social and business part of their ideas. As rightly coined in the words one entrepreneur

*"The idea was somehow imposed on us by the fact that we were members of the climate initiative centre. During the programme we came to realise it was not enough to pay attention to the social aspect alone, we needed to be business minded and the only way to survive independent of external support was to generate our own funds. We had the potential to generate our own funds but we just had not paid attention to it yet [...], We were caught up in the public bars and enjoying the acceptance and excitement of the idea of the bamboo bike while only looking at the social aspect. And we paid little attention to the business development aspect of the initiative. We were made to think critically about developing a Business Model which gave shape to our plan".*

The narrative is quite the opposite for some entrepreneurs who have not had any form of mentorship, guidance or involvement in such programmes. The co-founder of ABAN recounts:

*"Through our involvement with an NGO for a school project we conceived an opportunity which exploded quite fast. We did not have the time to think or plan for the long term, we enjoyed the success as it came. We were receiving over 100 orders in a day. There was no Business model, plan or structure. We used to have an annual turnover of about \$50,000 [...], we do not have donors or demand as much as we had [...] we are currently concentrating of developing a new structure, a business model and the strategy to use"*

Also, entrepreneurs associated with incubators or hubs, receive support in the form of mentoring to develop business idea or financial assistance. The hubs in Ghana are mainly, technology hubs who develop software's among others. DAS also recounted the support he received

*"I was part of an incubation hub and through a proposal I wrote with their help, I was given a seed fund to test the market"*

The entrepreneurs with such exposure tend to be more successful<sup>5</sup> as compared to those who have not had such experiences. Through their involvement with these programmes and organizations, entrepreneurs broadened their network with fellow entrepreneurs or other institutions. An example of such networking was when Ghana Bamboo bikes ...*"was linked to the Ghana climate initiative by the Dutch Embassy from which we obtained some funding from the World Bank (prove of concept grant to purchase equipment's and treatment grant to improve our productions process"*.

Also, most of the entrepreneurs interviewed for the research through referral (snow ball) knew each other from programmes organized by the aid institutions mentioned above for entrepreneurial development or competitions.

### **4.3.2 Financing**

Aside the support and guidance to develop business ideas, business models and strategies, most of these programmes awarded loans, grants or 'seed' money to entrepreneurs. The financial support received by entrepreneurs enabled them to realise their goals (products\business), which to a large extent accounts for the success rates of these entrepreneurs. As Bamboo bikes remarked

*"What distinguishes a start-up from a fully-fledged company is the funds available to you [...] once you have the means to produce and meet market demand, you are no longer considered a start-up [...] what makes them start-ups is the finance and funding available to them (once a start-up gets the required finance to operate, it is not a start-up anymore)"*

### **4.3.3 Internal financing**

Internal financing used in this context refers to funding opportunities that are run by government, organizations or individuals in Ghana. Two of such institutions identified by entrepreneurs were the National Entrepreneurship Initiative Programme (NEIP) and the Exim guarantee which are supposed to grant soft loans to entrepreneurs who cannot assess loans from the regular private institutions.

To access funding from the National entrepreneurship initiative programme (NEIP) for instance, one had to go through a process which has been designed like a training programme and includes the following stages which could last till up to a year.

The process started with the presentation of proposals opened to the public at a particular time of the year. The next stage was a selection process of the ideas the NEIP thinks are tangible and feasible for further development.

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<sup>5</sup> Successful in this case means still in full operation and making good annual turnover (same as previous years or better).

The selected candidates are then split up into groups depending on their location and idea category to attend 'hub' selections with selected leads who are supposed to guide them in developing their ideas. These sessions are either on weekly basis and sometimes what they called intensive sessions (every day for a couple of weeks). During these trainings, the participants will be assessed and those ideas or persons with the most feasible will be selected for support.

To most entrepreneurs, this process is long, time consuming and has no assurance of being supported financially. Some entrepreneurs (Yabbs Creation, Zaacoal and Amanzi shoes) who have already started operations on a small scale and needed the financial help to expand explained that: you chase after this process for a long time and are always asked to come back later. A co-owner of Amanzi shoes remarked:

*"My job still sits and waits for me. The shoes don't get done in my absence so I can't keep chasing these loans".*

Zaacoal also shared his frustration when he explained;

*"After going through the whole process and received a letter of proof of concept and grant for the loan, there was a change of government. The new government changed everyone at NEIP. Despite having an official letter from the old administration, my approval for loan was renounced and was asked to start the process again under the new government".*

Bamboo bikes initiative also buttressed this when they asserted:

*"There are funding opportunities internally (Ghana) which are not easy to access because everything in Ghana is politically tinted. You need to have political muscles to charm your way through to access these grants. These notwithstanding it is possible if you have a strong business case, example we have won some funds from CODVET for skills development fund that has helped in our quality control standardization."*

Exim guarantee works like a financial institution but was set up to finance entrepreneurs. To most entrepreneurs, its dealings were more or less like that of the private institutions because they demanded huge collaterals from young entrepreneurs who need funds to start their business.

The CEO of Frimpong Manso furniture remarked *"if I had the kind of collateral they are asking for, why will I even go for a loan in the first place"*.

<i>Company</i>	<b>BM\Mentorship\Hub</b>	<b>NO</b>	<b>Financial</b>	<b>No Financial</b>
		<b>BM\Mentorship\Hub</b>	<b>Support</b>	<b>support</b>
<b>Zaacoal</b>				
<b>Bamboo Bikes</b>	X		X	
<b>Boomers</b>	X		X	
<b>Akwaaba</b>	X		X	
<b>Amanzi shoes</b>		X		X
<b>ABAN</b>		X	X	
<b>Zoomlion</b>	X			X
<b>E-juice</b>	X		X	
<b>DAS</b>	X		X	
<b>Frimpong Manso</b>		X		X
<b>Trashy bags</b>	X		X	
<b>Yabbs creation</b>	X		X	

Table 3. overview of support and financial assistance received by entrepreneurs. The row for Zaacoal is empty because as of the interview he had received a letter of financial support but had not yet received the fiscal cash.

#### 4.4 Perceived Opportunities to transition to the circular economy

To be able to perceive an opportunity or a hindering factor in an idea, comprehending the fundamental principles or ideology behind it is very salient. An understanding of what the circular economy is was present among entrepreneurs but not its details like its guiding principles, main posits among others. During the interview session, interviewees were briefly taken through the basic concepts and principles of the circular economy. Entrepreneurs who have had some contact with institutions like the Dutch Embassy, Climate change initiative and the UK-AID had a fair idea of the concept. Circular economy was explained to entrepreneurs and with the discussion of their firm, the researcher brain stormed with them on how they could incorporate circular economy into their production processes. Through this session, entrepreneurs expressed their perceived opportunities and forecasted challenges that will either promote or hinder their transition to the circular economy.

According to circular economy discourse Product Design, Business Models, Reverse Networks and Enabling Conditions are necessary for a transition into a circular economy. Aside from developing strong business cases and models with the help of mentors, aid programmes and hubs, what entrepreneurs in Ghana perceived as opportunities or inhibiting factors to their adaption of the circular economy model or principles are summarized below:

#### 4.4.1 Investment in research and Money

Product design takes time (many trials in developing prototypes) and resources (materials and money) and to the entrepreneurs in Ghana, these do not come to them easily. A major concern was the resource they have to put into designing a 'circular product'. A few entrepreneurs expressed their perceived opportunity and limitation when they made the following assertions:

*"Adopting the circular economy concept definitely will be accepted by entrepreneurs and would be helpful once we have the available funding or resource to experiment to see how it would turn out. It would equally be brilliant for us, start-ups to be given such opportunities to experiment" I am a fervent believer of the circular economy concept. It is excellent but unfortunately in our economy, now everybody is chasing after money. And there are not much enabling factors. Lack of investors because when an investor gives you money, they do not give it to you to experiment but to do actual business so they get their returns".*

The idea of the circular economy *"sounds perfect and good. Everyone might want to try this but would not have the financial muscles to be able to handle some of these ideas. These ideas come with cost and in order to execute or experiment you need that financial backing to enable you to spend which would give room for experimentation and several failures."*

*"Small scale businesses would not find this model attractive because of the perceived extra spending or cost it would impose on their current spending budget. When the economy gets rough everybody becomes financially sensitive. The first metric in these cases is cost"*

Confirming this perceived limitation of these entrepreneurs is the case of Zoom lion (one of the interviewed companies).

Zoom lion is a company, which is into waste management with a very good financial cushion (biggest private waste management company in Ghana). Their entrepreneurial department indicated their innovative project is not limited by finance because the company has made available its research centre for them to experiment with the product as well as money until they have achieved a desired product quality. The unlimited innovative process they undergo is well captured in the words of Bamboo Bike initiative who explained:

*"When you are a business empire, money does not become a limiting factor to your progress. How innovative you can be to some extent depends on how much funds are available to you. When money becomes a limiting factor, your progress becomes stunted. No matter what you do you still need available nexus to push your idea through."*

#### **4.4.2 Circular label and perceived interference with product design quality**

Even though almost all of the entrepreneurs make their product (or part of it) from waste, some with reserve logistics in place, only one 'branded' himself (Akwaaba & Co.) as a circular entrepreneur. In general, circular economy to these entrepreneurs meant using someone else's waste as your resource, using environmentally friendly raw materials or producing a product that has less negative environmental impact. As one explained:

*"When I think about circular economy what comes to mind is turning waste into food. I also believe using someone else waste helps complete the loop. It gives the idea of a systemic approach"*

Beyond understanding and branding oneself as circular, circular economy encourages designing products in a way that allows it to be easily refurbished, user friendly, easy to take apart and re-used. To some entrepreneurs, (Yabbs, Amanzi and Frimpong Manso), designing a product to be easily taken apart or refurbished by a user may affect the quality and durability of the design. Or the reuse of the old product to make new ones will reduce the quality of the 'new' product.

Amanzi shoes said "making slippers from returned old shoes could compromise the quality of the new product. Or making a shoe which sole or heel could be easily replaced by the consumer can equally affect the shoe's quality". Therefore, designing a product with the circular economy principles may not always assure quality of the product more especially in an economy where investors do not invest in research and development.

#### **4.4.3 Other Hindering factors**

##### **Enabling conditions and Education**

A few entrepreneurs are of the view that, for circular economy to thrive there should be strong leadership, which sets conducive and enabling conditions for their innovations to thrive. Conditions such as high taxes on their material imported, long registration process for interested investors, which usually serves as a deterrent and corruption has to be addressed.

Again, re-orienting the educational system to understand the importance of innovation, skills development and entrepreneurship rather than the current system of quick money and white-collar jobs will help to better and understand appreciate local skills, innovation and products. For instance, Yabbs creation recounts that she had to change the original name of her company (a local name) because people did not accept the product and assumed it was inferior because it was made in Ghana but upon re-branding her product got a different kind of attention.

#### **Summary**



Through the interview sessions and interaction with entrepreneurs, the main findings were that: entrepreneurs goals, triggers and motivations are not 'black and white'. Aside the ones identified in the literature, social and environmental situations or circumstances also triggered entrepreneurial ideas. And sometimes, more than one factor triggered an idea

Also, in the process of developing a venture idea, some sampled entrepreneurs used NGOs which they owned or were affiliated to as a medium to nurse their ideas or to test the market for their products. Again it became evident that, the successful entrepreneurs have had some association with mentors, hubs or aid programmes which propelled their ideas through helping them make right choices, developing business models and most importantly with financial assistance.

Last but not least, even though the sampled entrepreneurs did not label themselves as circular, some actions and activities of theirs were guided by circular principles in as much as they perceived opportunities and challenges to adopting the circular economy thinking. Some of the perceived challenges include, lack of investment in research, education, enabling conditions and circular thinking versus product design quality.

## 5.0 Discussion

This chapter seeks to answer the research questions posed in chapter 1 in light of the findings, literature and theoretical framework presented in the previous sections. It discusses the overall findings and compares the outcome to the literature and adapted theory. The question for which we sought answers were:

***What are the characteristics and distinguishing features of entrepreneurs in Ghana and to what extent do they perceive opportunities towards transitioning to a circular economy.*** To cover all aspects of this question, two sub-research questions were formulated which are:

**1. What is the profile of the current entrepreneurs in Ghana?.**

**2a. What are their perceived opportunities and or hindering factors to transitioning to the circular economy.**

**b. What are the (future) strategies or paths to incorporate circular economy thinking among Ghanaian entrepreneurs?**

The profile and distinguishing features of entrepreneurs embodies the discussion of the goals and motivations in the findings compared to that in the literature and is weighed against the enablers. The perceived opportunities and the future strategy to incorporate circularity will also be the discussion of the processes and paths to idea exploitation. Section 5.1 and 5.2 answers research question 1 and section 5.3 and 5.4 for research question 2.

## 5.1 Profile of entrepreneurs

Based on the goals, motivations, products and processes of the entrepreneurs, it is evident that above the characteristics and different kinds of entrepreneurs presented in the literature and theory sections, entrepreneurs exhibited other characteristics and or a combination of more than one kind of entrepreneur. Therefore these entrepreneurs cannot be fitted into boxes because they display interrelated or connected features. The 'types' and their characteristics identified through the interview sessions are compared with those of the literature. The aim is to identify emerging trends, differences and changes if there are any or if the sampled entrepreneurs match the literature.

**Sustainable entrepreneurial** actions from the literature is a way to preserve ecosystems, counteract climate change, reduce environmental degradation, improve agricultural practices, and maintain biodiversity. This conforms to the goals and actions of most entrepreneurs who through their everyday work sort to address such problems like reducing environmental degradation, improving agricultural practices by preventing post-harvest losses through food processing among others. Sustainability to them also meant using the least available resources to their best in the benefit of the customer or community. Their characteristics conforms more to Blok et al., (2016) assertions of what characterises sustainable entrepreneurs. Thus, taking the responsibility to equally distribute well-being and risk between the rich and poor, human and non-human, the present and future generations as a strong motivation compared to other definitions which asserts or characterises it to be more of an add-on or a business model added to an existing business to shift its motives from mere profit making to product, environment and customer consciousness (Schaltegger and Wagner, 2011).

The goals and characteristics of entrepreneurs in Ghana very much conformed to **social entrepreneurs** as reviewed by Zahra et al., (2009) and Mair & Noboa, (2003). Thus, they were more philanthropic, social-purpose driven business ventures, one that makes diverse contributions to communities and societies, by adopting business models to offer creative solutions to complex and persistent social problems where they are ready to bring change in the smallest way possible.

The works of social entrepreneurship pioneers (Hayak, Kirzner and schumpeter, Zahra and his colleagues) also identified three types of social entrepreneurs: the Social Bricoleur, Social Constructionist, and Social Engineer (Ardichvili, A., Cardozo, R., & Ray, S. (2003) The characteristics of social bricoleur and constructionist were the most familiar amongst entrepreneurs in Ghana in that they either sort to solve local problems on a small scale (bricoleur) or saw opportunities in the market to fill to be able to introduce reforms and innovations to the broader social system (constructionist). Also, whereas the literature identified them as 'types' of social entrepreneurs, in Ghana, it was rather evident to be their overarching goal and motivation.

Again, the works of Prahalad, (2005); Zahra, Rawhouser, Bhawe, Neubaum, & Hayton, (2008) pointed out the role of social entrepreneurs when governments and NGOs overlooked social problems because of corruption and resource scarcity. This assertion is contrary to the findings from Ghana where the social entrepreneurs owned and started their business as NGOs. The entrepreneurs who showed more social entrepreneur characteristics were either NGOs or started as one. Therefore, in defining **social entrepreneurs** in the context of Ghana, the entrepreneur's contribution to social value must be highlighted, as their involvement in fulfilling basic long-standing needs seemed to prioritize over profit even though profit is what keeps them in business.

Contrary to the work of Santos, (2012) who posits that social entrepreneurs are characterised with providing the poor with cheaper options that allows them to substantially improve their living standards, it was found from the research that in Ghana the product in itself is not necessarily a cheaper alternative nor does it better the lives of people living in poor conditions but rather the process of making the product is what benefits these people. Thus, the sourcing of materials, labour needed to manufacture the product either provides employment or income which indirectly solves the social problem of unemployment, post-harvest losses among others. Simply put, the entrepreneurial process of making a product provides solutions to social problems and not the product itself.

While the characteristics of the sustainable entrepreneur might be regarded individualistic, none of the characteristics of the **institutional entrepreneur** were evident amongst the entrepreneurs' interviewed. Thus the entrepreneurs have goals and interests that were not geared towards changing or developing new institutions, at least in the conception and idea development phases of the business. However, this aspiration or goal to change or develop new institutions can develop over time when their entrepreneurial actions gather momentum and is strong or big enough to affect the economy and decisions.

For instance, the goals and motivations of entrepreneurs currently is to foster change in local communities but with time when a group of 'change making' entrepreneurs take a decision, it will have the force of affect more than just the community but a municipality or country.

With regards to **necessity entrepreneurs**, even though they have been identified in the literature to be dominant in developing economies, none of the sampled entrepreneurs was characterised by this. Despite the number of respondents for this research is small to use their results to generalise, none of them admitted to have been forced into entrepreneurship. As a matter of fact, half of them still have full time jobs aside their entrepreneurial firms or are students. The rest had some form of fixed paying jobs until they vied into full time entrepreneurship. Therefore, it can be said that based on the sampled

entrepreneurs, their goals and motivations, none of them ventured into entrepreneurship as their only viable option to survive.

Profiling entrepreneurs in Ghana as **circular** is quite dicey because the literature characterises them as entrepreneurs who are doing business according to the circular principles. In as much as most entrepreneurs interviewed did not have a very good idea of what the circular economy was, they all to a large extent use waste in one way or another in their production process. Therefore this is regarded as a step in the right direction and they need to go one step further to not just use waste but design their product with a different mind-set of longevity, ability to refurbish, re-use and recycle among others. It could not be concluded if their use of waste as their resource (one of the principles of the circular economy) was enough to call or qualify them as circular entrepreneurs.

It is evident from the sampled entrepreneurs that, the characteristics and types of entrepreneurship they exhibited are less intentional in most cases. This is because, they do not start their business with the intention or departure from the premise that they are or want to be sustainable entrepreneurs for instance, but their goal, motivations, line of actions or production processes tends to exhibit the same characteristics as identified in the literature for sustainable entrepreneurs.

Putting all the above into perspective, the sampled entrepreneurs in Ghana are driven mostly by their surroundings, their social environment and circumstance. This is not to suggest that entrepreneurs are externally driven but external circumstances triggers their inner ingenuity to find solutions to problems. Therefore, cannot easily be classified as a particular ‘type’ of entrepreneur as their goals and motivation informs (in most cases) their entrepreneurial idea and business case. Thus, relating their motivations, goals and triggers to that in the literature, it can be said that social, personal or infrastructural challenges, motivates and triggers them whiles the resources available, market pull among others aids their motives to achieve the said goals. Based on these, they are characterised mostly as sustainable, social and to some extent circular entrepreneurs. In a nut shell, the goals, motivations and profile of sampled entrepreneurs in Ghana are *“largely influenced by [...] norms which equally drives them towards recognising opportunities for sustainable development”* as also recognised by Lans et al, (2014) from which they develop business ideas and opportunities which helps solve pressing social, economic or environmental problems.

Table 4. Entrepreneurs and the 'types' of entrepreneurship.

<b>Entrepreneurs</b>	<b>Sustainability</b>	<b>Social</b>	<b>Circular (by using waste as input for product manufacturing)</b>
<b>Zaacoal</b>	X		X

<b>Ghana Bamboo Bikes</b>	X	X	X
<b>Boomers</b>	X	X	X
<b>Akwaaba</b>	X	X	X
<b>Amanzi shoes</b>		X	
<b>ABAN</b>		X	X
<b>Zoomlion</b>	X		X
<b>E-juice</b>	X	X	
<b>DAS</b>	X	X	X
<b>Frimpong Manso</b>	X	X	
<b>Trashy bags</b>	X	X	X
<b>Yabbs creation</b>	X	X	

## 5.2 Distinguishing Features of entrepreneurs in Ghana

While most entrepreneurs have been noted to contribute to economic development by facilitating the reallocation of resources from less to more productive uses (Z. Acs & Storey, 2004), by performing ‘cost-discovery’, ‘gap-filling’, and ‘input-completing’ functions in the economy (Hausmann & Rodrik, 2003) and supporting structural change (Gries & Naudé, 2010), entrepreneurs in Ghana contribute in a rather different way.

In Ghana, as presented in the findings, they contribute to the economy by providing jobs to the unemployed, give vocational trainings, fostering social inclusivity and solve some infrastructural problems and agro sector challenges. Indeed, some of the entrepreneurs have facilitated the reallocation of resources such as fruits, water sachets, bamboo and scrap metals from less productive forms or use to more productive uses but their strength lies in the direct contribution to job provision, vocational education and social growth\ development.

Despite the impacts that these activities have on communities and families, I will agree with the scholars who shared the “Schumpeterian” view of entrepreneurship that entrepreneurship in its early stages of economic development does not have a very large impact on the broader economy like in its later stages when it is in competition with economic models and plays a significant role in economic growth. This is because in the early stages of economic development entrepreneurs are not recognised as a strong force to exact change mainly because their effect is little and usually concentrated at their unit of operation (providing employments for themselves and others etc). As an economy grows their novel ideas and innovation is better recognised and it affects not just their operational niche but

systems in some cases.

These notwithstanding, entrepreneurs have showed remarkable success in the past decades in countries where they achieved substantial poverty reduction, such as in China. According to the literature, it edged donors and international development agencies to improve the effectiveness and sustainability of their aid. This trend of an increasing number of donors and aids channelling their efforts and resources towards entrepreneurs is also evident in Ghana through the many mentoring programmes, entrepreneurship loans and grants continuously made available as shown in the findings. More successful entrepreneurs have benefitted from these new form of aid, therefore this research speculates that, if this trend continues with the right infrastructure developed, Ghana may likely see entrepreneurs take the role Chinese entrepreneurs took in substantially reducing poverty.

### **5.3 Positioning the Ghanaian entrepreneurs in the circular economy.**

This section answers the second sub-research question of perceived opportunities of entrepreneurs towards transitioning to the circular economy.

Through the interview sessions and data collection process, it was evident that, there is much potential for the circular economy in Ghana amongst the entrepreneurs because most of them are in the preliminary stages of their business growth which still gives room to improve upon their products, its design, channels and business mission among others. At these early stages of their development process, positioning their business as circular under the right conditions, guidance and circumstances will see them reaping immense benefits in the near future.

Again, resources needed to design a sustainable product are available and there are also 'idle' hands willing to contribute to society, their wellbeing and the economy by rendering services and getting trained.

A major concern of transitioning to the circular economy is that not all the principles or building blocks of the circular economy are feasible in a developing context like Ghana at the moment. For instance, creating a reverse network is a difficult one because the system is not developed, products are not necessarily bought from shops or registered vendors and address systems are not reliable, therefore it is even difficult for a vendor to track his product once it leaves his premise. Hence the principle to preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows might hinder the swift transitioning towards the circular economy.

These notwithstanding, they perceive the benefit of enjoying proximity to resources for those who continually import parts of their raw materials for production, economies of scale from shared and circulated resources, reusable and refurbished items. They also perceive the benefit and opportunity

of creating jobs, increased innovation and competitiveness and last but not least high profit margins in the long run when their activities and the circular economy gains bigger momentum.

Simply put, entrepreneurs in Ghana are at the right stage of their business development process to adapt circularity with ease in the right infrastructural setting. Also, they are currently receiving mentorship, training and monitoring from international aid programmes, which equally equips them with innovative skills to propel them into transitioning or implementing the circular economy principles. Even though some external conditions beyond their current sphere may seem to limit them, by developing their niche, these problems will not be a hindering factor in the near future.

## **5.4 The Roadmap**

Entrepreneurs in Ghana or developing countries for that matter do not have the luxury of the support and infrastructure their counterparts in the developed world have. This support includes trust in their product and process, governmental structures that protects them (and their knowledge), investment in research, room for experimentation, trial and failure and financial support.

Based on the findings from this research, the theory and most importantly the success stories of the entrepreneurs. The researcher proposes this roadmap to transition into a more circular economy.

A business idea is mostly brought about by a trigger be it social, environmental, personal or cultural. To aid transitioning into a circular economy, the ideas of entrepreneurs should be guided from its early stages through external support like mentoring, networking and involvement with Aid programmes to develop business models and strategies that have the circular principles embedded in them. The opportunity development phase of a business should be embedded with the external support to nurse the idea from the incubation phase (shaping and refining), evaluation and feasibility stages.

This phase is very critical in transitioning into a circular economy because it does not only support entrepreneurs to develop business models and strategies, it also teaches businesses how to generate their own funds, to look beyond financial aid and generate internal funds to be able to sustain itself and grow. If the principles of the circular economy are embedded, entrepreneurs will learn in their early stages the importance of product design, the importance of keeping materials in flow for a long time and developing their resources as well as customer channels of their business models.

Investment in research, availability of investors (for both product and research) should progress with the venture development phases. The conditions that will attract investors like low taxes, un-cumbersome procedures should be implemented to create a favourable atmosphere for internal and external investors.

Last but not least, enabling conditions should be made available in the country to help accelerate the transition into a circular economy. The enabling conditions include but are not limited to tax compensation or cuts on imported raw materials for entrepreneurs, reduction in high export fees, smart and swift processes such as registration of companies and investor agreements\consent processes. Infrastructural development such as good roads, good and well-regulated transport systems and marketing platforms should be developed and promoted as well. With all these in place, entrepreneurs in Ghana would find it lucrative, not only money wise but economic, social, environmental etc. to transition to the circular economy.

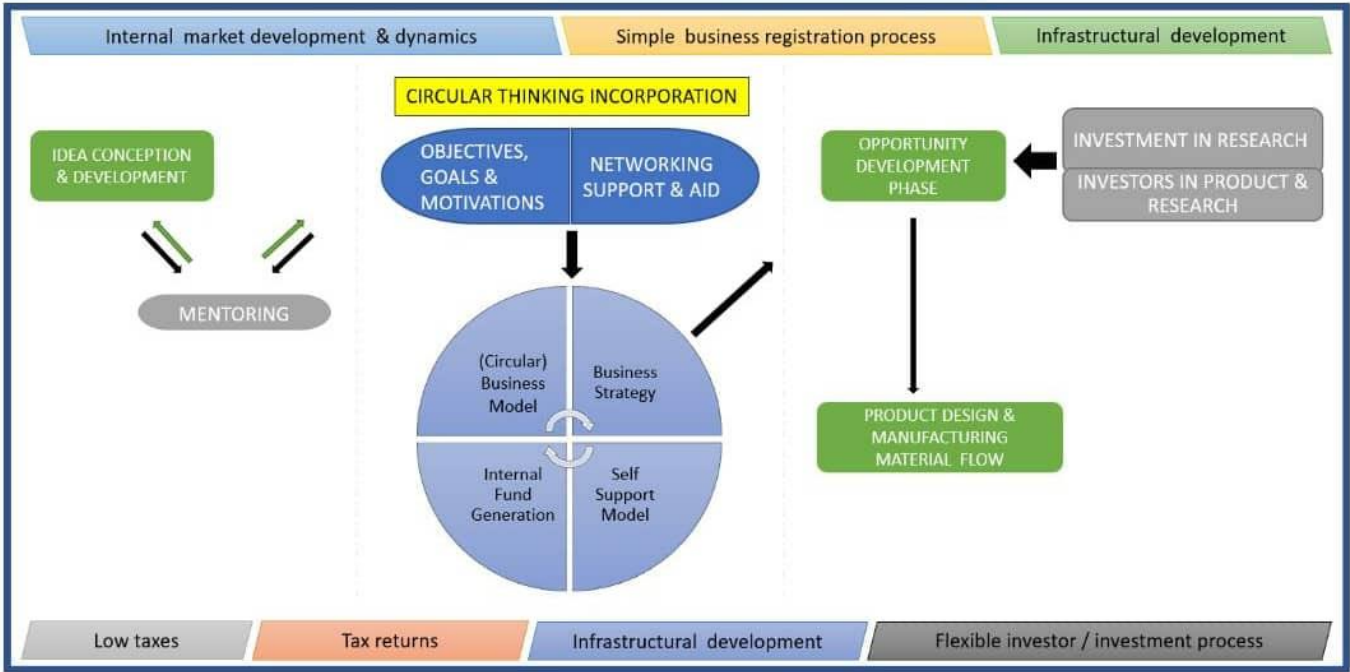


Figure 9 Proposed Roadmap to transition to the circular economy

The proposed roadmap above (figure 9) evolved from the combined framework of Vogel and Serveire (Figure 5, pg.25) and incorporates the enablers into the whole business development phase.

The idea conception and development is the first stage of the roadmap where mentoring is required. Between the idea development and opportunity development phases, it is suggested that the circular thinking should be incorporated in the objective, goal, motivation, network and support development processes. This is believed will translate into (circular) business models, strategies, internal fund generation and self- support systems with the guidance of mentors.

If this phase is developed and built properly, the opportunity development phase while translate into product design and manufacturing built with circularity in mind. Product and research investment at this stage will be optimal.

Around these processes are enabling conditions such as infrastructural development, low taxes,



flexible investor processes, internal market development platforms and opportunities etc. With these conditions in place while developing a business, entrepreneurs will find the circular economy more attractive to adopt or transition towards.

## **5.5 Relevance of the theoretical framework.**

The findings from the research (to a large extent) supports the theory more especially the venture creation decision for necessity entrepreneurs model by Servierer (2010) and the venture to idea conceptual framework by Vogel 2016. The findings from the research resonate with Vogel's model in that it confirms what triggered most entrepreneurs, how they came by their idea(s) and how they sought to develop it into an opportunity. Even though the model of Servierer was made around necessity entrepreneurs, it was useful in conceptualizing a holistic picture combined with Vogel's framework for entrepreneurs in Ghana despite no entrepreneur exhibited the characteristics of a necessity entrepreneur.

The enablers conceptualised was also useful as it helped to demonstrate a complete cycle of the benefits and usefulness of engaging in the phases of developing and evaluating ideas into opportunities. It to a large extent explained the success rates some entrepreneurs enjoyed and their perceived opportunities should they transition to a circular economy.

## **6.0 Conclusion and recommendations**

This chapter summarizes the outcome of the research, key learnings and contributions to academia, (international) aid organizations and most importantly to entrepreneurs and the government Ghana. It comprises section 6.1 a conclusion on the whole research (take home message), 6.2 contribution to entrepreneurs, the government and aid organizations, 6.3 contribution to academia and finally 6.4 the research limitations.

### **6.1 Research conclusion on findings and discussion**

The triggers discussed by Vogel and Servierer emerged to be broader than resource push, market pull, desire to start and altruism. In addition to these triggers, social circumstances and environmental conditions were identified as other underlying reasons or triggers among sampled Ghanaian entrepreneurs. Based on the broadness of the triggers and motives, the profile of entrepreneurs are not straight forward or come in isolation but rather show a mixture or overlap of characteristics .

Also it became evident from the research that entrepreneurs did not intentionally profile themselves as a type of entrepreneur but these profiles emerged from their goals, motivation and line of actions or production processes which tend to be in line with the characteristics identified in the literature.

Sampled entrepreneurs in Ghana showed most, an overlap between social and sustainable entrepreneurs and in some cases circular.

In this same vein, there are no 'labelled or profiled' institutional entrepreneurs as the economy in which they operate is in its developmental stages hence their effects/momentum are not high or strong enough to propel change at the micro or meso levels of the economy but in later stages of development when their innovation and impact gains momentum they will have the effect of changing existing institutions.

In the process of developing venture opportunities into fully functioning businesses, it was discovered that NGOs played a different role than they usually do. Some entrepreneurs started their business under the operations of an NGOs until it was successful enough to be exempted from the privileges of an NGO and ready to for expansion or to allow investors. Thus the NGOs were nurturing grounds and market testing platforms for businesses in their early stages of opportunity development.

Again even though the sampled entrepreneurs conceptualised Circularity from waste to added value point of view and most use waste as the production input, they do not label themselves as circular. This notwithstanding, they perceive opportunities to transition to the circular economy under the right circumstances/conditions. Hence some of the hindering factors they presume/forecast are the lack of investment in research, circular economy principles and its likely effect on product quality or durability, lack of enabling conditions and money as a hindering factor to innovation.

## **6.2 Research contribution to the government, aid organizations and entrepreneurs**

The research is aimed to help government, NGOs and international aid organizations understand the importance of support systems for entrepreneurs and how this support goes a long way to solve pressing social and environmental problems.

The government of Ghana, more precisely the ministry of youth and employment can benefit from this research as a source of information to understand the constituent of entrepreneurs in Ghana, activities or programmes aiding their progress so as to pay more attention to them, to also collectively help solve or address the perceived hindering factors and most importantly assess the contribution of entrepreneurs to the economy (through their number of employee, annual income among others).

It can also serve as a yardstick for which the many support organizations and international aid programmes can measure the effect, impact or contribution of their aid to development or change process of a country since we know it at least creates a job for the entrepreneurs and supports lots more, a community or family at a time.

To individuals who might venture into entrepreneurship, this research can serve as a guide on the process to follow in developing venture ideas and enablers to pay attention to, in order to aid their growth and most importantly the opportunities of embedding circular economy principles into the whole venture development process.

It also seeks to echo the finding that external aid, mentorship and financing is very important in the developmental phases of the entrepreneurial journey in Ghana as it determines their success factors and indirectly solves multiple social and environmental problems.

### **6.3 Research contribution to academia**

The entrepreneurship literature in Ghana is not abreast and is mostly geared towards women entrepreneurship and the history of entrepreneurship in Ghana. This research contributes to the entrepreneurship discourse in Ghana by updating the characteristics currently found amongst entrepreneurs as well as their motives. It asserts that entrepreneurs in developing economies are not always or mostly necessity driven.

The circular economy discourse is still in its developmental stages even in developed economies. This research contributes to laying the foundation for future circular economy works or research as well as investment prospects in developing economies like Ghana in this case.

Even though it is acknowledged that typology research like that of Zahra, Gedajlovic, Neubaum, & Shulman, (2009) seeks to create uniformity among the heterogonous and often ill-defined group referred to as entrepreneurs, their characteristics, goals and motivations for which they are classified are not always 'black and white' but are influenced by certain underlying features or extraneous variables. These underlying variables could also portray different characteristics of entrepreneurs if studied. Therefore, this research will contribute to the work of Laura Serviere (2010) and the likes who challenge other researchers to consider the different context and extraneous variables that might influence the choices or characteristics of entrepreneurs.

### **6.4 Study limitations**

#### **Experts interviews\ Know how**

Because Circular Economy is not a traditional concept in developing countries, the knowledge of it has not been well accumulated in academic research papers. Not only is the theoretical research on the concept immature but also empirical research that has been completed or is ongoing remains largely unknown. This research lacks expert opinion or knowledge on the issues or direction of circular economy in Ghana and Africa as a whole. Its possible effect on the study is the lack of an in depth

understanding of the possible circular economy rive in Ghana more especially since the researcher also had a limited time in the field to do an in-depth study.

### **Season and time**

Even though the fieldwork started on the first of December, most entrepreneurs who had even being contacted prior to the arrival of the researcher were not willing to grant interviews because it was 'almost' Christmas and the time of the year with a lot of orders for their products. Only three entrepreneurs granted interview before Christmas while the rest all rescheduled to after the Christmas holidays. Time was equally a limiting factor as the data was collected within 6 weeks of the study.

### **Sampling criteria**

Two sampled firms who did not meet the second criteria (firms in existence for 48 months or less) did not directly affect the data but brought some dynamics into the results. The waste management company who had a small division in the company to create 'circular' products was found out not to be limited in innovation by finance because they had the resources to invest. On the contrary, the family business even though had developed a business model recently found it difficult to secure any loans or funding and did not show interest in participating in idea development programmes because they did not have the luxury of time.

### **Validity and Reliability**

One major methodological criticism in research is validity and reliability of the data. Validity answers the question if the findings are genuine and true; as well as the research measuring what it is supposed to measure. To ascertain the validity of this research, two methods of data collection was used (secondary/desk research and interviews) to be able to triangulate sources. It is also assumed that respondents were truthful in answering research questions hence genuine information was obtained. With regards to the validity of the research measuring what it was supposed to measure, several literatures and similar researches were referred to in choosing an appropriate method and research design.

Reliability on the other hand means the findings of the research can be believed and trustworthy. In that, another researcher can replicate the study and have the same results. Given the same criteria and setting, the same results are expected when the research is replicated. Recorded interviews and transcripts also serve as another source to verify the reliability of the research.

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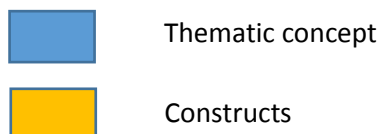


## Appendix

### Phase 2 of Second order coding

social inclusion					
vocational training					
ploughing back					
personel training					
skill development		success= external support\funding			
social engineering		No business orientation = high tendency to fail		Bottleneck	government funding
education	Ease of obtaining resources	failure= experience	innovation vrs Quality\ durability	tedious process & requirement	external funding
Empathy	under-rated or utilised resources	no room for experimentation	innovation vrs funds available	high colatorial	personal savings
employment	local context of products or business	no investors for research or experiments	technology and research	high interest rate	family and friends (cash&
social problems		availability of business model= likely success	resources available vrs Quality	political tints	crowd funding
<b>Goals Motivation and social Push</b>	<b>Resource Push</b>	<b>Extraneous variables</b>	<b>Necessities for a successful Circular economy</b>	<b>Constraining agencies for funds/resources</b>	<b>Funding sources</b>

				strong leadership & government	NGOs to Business	
process or product re-engineering	Branding	Benefits of waste	SDG	formalise informal sector	Partnerships	idea of systematic approach
outsourcing expertise	Niche marketing	value of waste	problems (climate change)	Enabling conditions	Franchise	factor to progress, growth& innovation
product design	Reverse logistics	collaborations to use raw materials				
<b>Design innovation</b>	<b>market positioning</b>	<b>Conceptualizing Circular economy</b>	<b>Greater objective/contribution</b>	<b>Role of government</b>	<b>Income and market development</b>	



## INTERVIEW GUIDE

**AIM:** to solicit information on the current operations of your entrepreneurial business or venture and to collectively brainstorm strategies which can be implemented to improve the perceived opportunities and prospects of the circular economy.

**Target Group:** Entrepreneurs in the Manufacturing Sector of Ghana and have been in operation less than 4 years.

I am an MSc student of the Urban Environmental Management Programme of Wageningen University, Netherlands. I am undertaking a research on ‘catching up, forging ahead or falling back: perceived opportunities and prospects of the Circular economy in Ghana’.

All information provided would be used for the sole purpose of this research and will be kept **private and confidential**. Given my efforts to protect your privacy, please provide honest and complete answers to the questions as much as you can. Thank you.

### Firm level characteristics.

- Name of firm
- What is your name and function in the firm
- Type of firm: sole proprietorship, limited liability, start-up or partnership
- Sector of production
- Type of product
- Period of firm existence
- Number of employees
- Annual turnover less than 1000 cedis  1000-5000  5001-10000   
10001- 15000  15001- 20000  20001-25000  Above 25001

### Entrepreneurs Characteristics

- What are your motives as an entrepreneur
- What motivates you in your journey as an entrepreneur
- How unique are you\what makes you stand out as an entrepreneur?
- How do you finance this business?
- what funding opportunities are available to you (which you know of)
- What institutions or frameworks are in place to support you as an entrepreneur (not only in finances but organizational etc)

### Resources, Models or strategies

- What resources, input\materials do you use

- How do you obtain these resources?
- What is the availability or ease of obtaining these materials?
- Do you have a business model or strategy?
- Describe your business model
- Describe the production process
- What happens to your products when they leave your sales department\point?
- In your opinion, do you think your business model is sustainable? Why?
- Which aspects of your model do you think can or should be improved
- What do you understand by Circular economy
- Based on the researchers explanation and your experience, what are your perceived opportunities or prospects to transition to the circular economy