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**Dynamics of a Start-up Ecosystem in Africa:
A case study of Yabacon in Nigeria**

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List of Acronyms

CC-HUB	Co-creation Hub
CEO	Chief Executive Officer
EE	Entrepreneurial Ecosystem
FAO	Food and Agriculture Organization
FIN-TECH	Financial Technology
ISS	Institute of Social Studies
NITDA	National Information Technology Development Agency
NIEV.	Nigerian ICT Innovation Entrepreneurship Vision
NIS	National Innovation Systems
SDG	Sustainable Development Goals
SSA	Sub-Saharan Africa
UNDP.	United Nation's Development Programme
USD	Unites States Dollars
YABA-TECH	Yaba College of Technology

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Abstract

There is a significant gap in the conceptualization of entrepreneurial ecosystems in developing economies of Sub-Saharan Africa. Despite its prominence and recognition as a global phenomenon, prominent research on entrepreneurial ecosystems maintains a central gaze on advanced economies in the Global North, with Silicon Valley in California as the inspiration. Only in recent times have a few promising strands of literature emerged with a focus on strategies to build entrepreneurial ecosystems in Sub-Saharan Africa. These studies come without references to the unique dynamics of ecosystems in institutionally challenged economies of sub-Saharan Africa. In the present study, I adopt an exploratory analysis of the software ecosystem in Yaba, Lagos, as a case study to underline traditional and unique elements that provide support to start-ups within the ecosystem. These distinctive elements such as protection from police brutality, a positive reputation, private learning centres and informality, exist as meso-level support to complement the traditional elements of the entrepreneurial ecosystem. Drawing upon existing literature on the formal-informal dichotomy, I further present informality as a unique element from which formally registered start-ups derive sustainability strategies. I contend that informal practices are institutionally preconditioned choices, caused by the abdication of the government's responsibilities and exacerbated by counterproductive state interventions. I contribute a scaffold adapted from Mazzarolis (2014) ecosystem framework to depict the core and peripheral elements that provide support to start-ups within the ecosystem. From this, I deduce an elliptical illustration of formality and informality as intervening factors to the support received by start-ups within the ecosystem.

Relevance to Development Studies

This research adds to current academic debates on ecosystems regarding its contextualization in Sub-Saharan Africa, by highlighting the unique character of a software ecosystem in Nigeria. Exploring how start-ups proliferate and thrive within the Yaba ecosystem in Nigeria, this research contributes to discussions on the importance of context-based elements of entrepreneurial ecosystems. As a private sector-led phenomenon—with the need for government support—this study of the Yabacon will further highlight gaps for policy interventions in promoting new ventures. The latter flows from the consideration that developing a concise map of an entire ecosystem character "will help governments take the first steps without losing sight of what comes next" (Isenberg 2010: 1).

Keywords

Entrepreneurial ecosystems, software, start-up ecosystems, informality, Start-ups, entrepreneurship, Yabacon, Lagos

Chapter 1 Introduction

1.1 Background

In his opening remark to stakeholders on the way forward for the UN 2030 agenda, Abdoulaye Mar Dieye¹ noted that entrepreneurial ecosystems (ecosystems) are among other things, central to the realization of the United Nation's SDGs (UNDP, 2018). Dieye highlighted the critical role of ecosystems, in Nigeria, India, and China, as enabling environments for technology start-ups. These ecosystems refer "to a set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship within a particular territory" (Stam, 2015: 1765). Similarly, Subrahmanyam concludes that start-ups in technology veer towards success if immersed within an entrepreneurial ecosystem (2017:60). More so, ecosystems reflect the essential coordination for productive entrepreneurship around the world (Stam, 2015; Spigel 2017). To emphasize its prominence, scale and widespread adoption, Autio et al. described its emergence as a "global phenomenon" (92:2018).

Despite its recognition as a universal phenomenon, an examination of the extant literature on ecosystems indicates a concentration of studies in advanced economies. This is highlighted by critics, questioning the academic gaze on Silicon Valley in California and on conditions seldom present in developing countries (Cukier et al., 2016; Isenberg, 2011; Cao and Shi, 2020). Undoubtedly, this 'blind spot' in the literature suggests an incomplete theorization of the ecosystems' concept (Cao and Shi, 2020; Cukier et al., 2016). Consequently, a plethora of empirical studies highlighting the dynamics of entrepreneurial ecosystems in advanced economies is well documented—Silicon Valley (Saxien, 1994), Singapore (Wong et al., 2004), Victoria in Australia (Cohen, 2006), Waterloo in Canada (Spigel, 2017), Dutch (Stam, 2014) — and reflects the economic advantages to start-ups of the global North (Isenberg, 2010).

Accordingly, the empirical dearth of studies in developing economies has constricted research to 'how to build ecosystems' while in rare cases, making insignificant references to the dynamics of these ecosystems in institutionally challenged economies of sub-Saharan Africa. In 2016, Beugré highlighted the importance of entrepreneurial ecosystems to alleviating poverty in Africa by showing the "how" to build ecosystems and the expected roles of actors (2016). He explored the opportunities that could emanate from building ecosystems in Nigeria, South Africa, and Kenya as larger economies in sub-Saharan Africa. In the same vein, Sheriff and Muffato conducted a polygonal study of ecosystems in Ghana, Uganda, Egypt, and Botswana to understand the interactions between markets, human resources, policies, and technical support. Subsequently, Oluwatobi et al. undertook a review of universities in Nigeria as ecosystem backbones (2019). They emphasize the potential of universities as innovation centres in Nigeria. While these studies provide a background to studying and theorizing ecosystems in Sub-Saharan Africa, they do not examine the dynamic elements of these ecosystems within the developing or underdeveloped economic settings of these countries.

The recent mention of Lagos, Nigeria, by the global start-up ecosystem reports — as a technology incubator and home to springing start-up ecosystems (Genome, 2019) — presents a unique opportunity to research entrepreneurial ecosystems in Sub-Saharan Africa. Following this, the Nigerian Bank of Industry has ascribed successes of ICT in Nigeria — contributing 12.2% of the country's annual GDP — to the adoption of entrepreneurial ecosystems, referring to evidence from the 2 billion dollars entrepreneurial scene in the Yaba start-up ecosystem (BOI, 2018). The Yaba ecosystem famously referred to as Yabacon Valley

¹ Assistant Administrator and Director, Regional Bureau for Africa

(Jackson, 2017), located within Lagos State, is the largest start-up" ecosystem in Africa, with a local entrepreneurship scene worth an estimated USD\$2billion,"(BOI, 2018:1). Established at the turn of the 21st century, the development of Yabacon has drawn entrepreneurs like Mark Zuckerberg from around the world, investing over 24 million USD (Kazeem, 2016). Nonetheless, no systematic analysis of what makes Yabacon a software start-up ecosystem, its significant character, or its benefits to start-up entrepreneurs has been conducted.

The above provides the springboard for this research paper; as this study aims to highlight the dynamics of ecosystems in the context of Sub-Saharan Africa, by grounding its findings within Yabacon, a location identified by its innovativeness and success (BOI, 2018). This is because local context influences the dynamics of an ecosystem and so an understanding of unique ecosystems is relevant for its theorization in various settings (Cukier et al., 2018; Isenberg, 2010; Mazzarol, 2014). This study attempts to contribute to the ecosystem literature, by analyzing the operational dynamics of Yabacon, based on its socio-economic context in Sub-Saharan Africa.

The main research question I pose is: *In what ways does the Yabacon software ecosystem support start-ups in Nigeria?* To explore this question, I employ the use of the following sub-questions to highlight the factors of success in the case of Yabacon: *Who are the key actors/factors, and what are their roles in the development of software start-ups in Yabacon? ; In what ways does government policy affect the software start-ups in Yabacon?*

To answer the research question, I adopt an exploratory analysis of Yabacon as a case study to underscore the nature of traditional and unique elements, providing support to start-ups. These distinctive elements such as protection from police brutality, a positive reputation and private learning centres exist as meso-level support to complement the traditional elements of the entrepreneurial ecosystem. Drawing upon existing literature on the formal-informal dichotomy, I present informality as a unique element from which formally registered start-ups derive sustainability strategies. I contend that the institutionally preconditioned choice of informality is occasioned by the abdication of the government's infrastructural and entrepreneurial responsibilities, and exacerbated by its counterproductive interventions within the ecosystem.

This paper is organized into six chapters; Chapter 1 highlights the background, methodology, limitation, objective and the research questions. Chapter 2 conceptualizes the entrepreneurial ecosystem, entrepreneurial state and excerpts from informality. Chapter 3 presents the research findings by discussing the uniqueness of the Yabacon elements. Chapter 4 examines the counterproductive role and the absence of governments support. Chapter 5 explains the coping strategies of start-ups as forms of buffers to institutional challenges occasioned by governments position while highlighting the entrepreneurial motivation of start-ups. Chapter 6 discusses the conclusions drawn from the study.

1.2 Research methodology

Given the dearth of studies on start-up ecosystems in developing economies, the course of Yabacon in Nigeria offers a baseline context for understanding start-up ecosystems in Sub-Saharan Africa. The rationale behind this is to ultimately show in-depth dynamics of software ecosystems operating under similar socio-economic conditions for which the case study is a part. The government of Nigeria, (Like many other Sub-Saharan governments) between 2013 - 2018, offered support to start-ups within Yaba, some, by sponsoring visits to Silicon Valley, with the view to learning best practices . However, these support package is currently at variance with the needs of start-ups within the ecosystem's in Nigeria (NIIEV,2019:1). Without empirical data, however, the gaps that require filling remain speculative at best. This speculation explains (in part) the temptation by the government to adopt Silicon Valley as

the ecosystem Mecca (Isenberg, 2010). A Quartz report cited Omoigui² admonishing ecosystems in Africa and particularly Nigeria to resist this temptation by forsaking practices from Silicon Valley to concentrate on local socio-economic conditions. He based this, on the contextual differentials in local conditions involving; skills limitation, infrastructural constraints, educational inhibitions, and insufficient support from government institutions (Varathan, 2017).

Consequently, this research employs the case study method for its use in exploring the rich experiences of research subjects. A case study is “the study of elements of the social through comprehensive description and analysis of a single situation or case (O’leary, 2017:143) .Case studies are about depth, therefore, best suited for this study, as it enables me to answer my research questions by exploring detailed features of the Yabacon, bearing in mind the need to highlight the Sub Saharan contextualities. According to O’Leary, “exploratory case studies can often bring new understandings to the fore” as case studies “requires you to dig deep”(2017:216).

This research will undertake a methodical examination of the dynamics of Yabacon, employing a framework designed by Isenberg (2010) and adopted by Mazzarol (2014) to examine the factors and elements within Yabacon. The framework by Mazzarol is suitable for its avoidance of a deterministic approach to the ecosystem constitution across regions of the world. This study further employs an adaptation from the entrepreneurial state literature to complement the category of data collected. This combination of literature, lays the foundation for informality as a contextual factor the framing of Yabacon.

1.3 Data collection and Limitations

Data is sourced through survey questionnaires prepared and disseminated to start-ups via email. Some questions are designed to elicit definite yes/ no/ not sure, adapted Likert scales and others that to give room for more nuanced expressions. This is followed by the qualitative data methods, which are useful for understanding the dynamics of entrepreneurial ecosystems, aiding the build-up of underdeveloped areas, such as the entrepreneurial ecosystem concept (Steyaert and Katz,2004; Eriksson and Kovalainen, 2008). While the findings may not be considered general reflections due to the uniqueness of diverse ecosystems(External validity concerns), they are useful to highlight the distinctions between diverse regional ecosystems and the reproductions of ecosystems through contextually disperse interactions and attributes (Eriksson and Kovalainen, 2008).

Additionally, the questionnaire is designed to measure the variables in a closed-ended format. This format elicits information about the ecosystem population, the nature of the entrepreneurs' businesses, support received, and the relationships between actors in the ecosystem. The questionnaires were tested to avoid the use of "ambiguous language, double negatives, and double-barreled questions" (O'leary, 2017:33). Information obtained from respondents is used to build primary data and serve as a means of triangulating data for accuracy (O'leary, 2017:213).

I compliment the primary data with secondary data to minimize methodological bias and I engage in disciplined-based research materials (O'leary, 2017:99). I obtained data from Bank of Industry reports, the world Bank, start-up genome, reports from development

² Founder and Managing General partner of Echo VC partners; a technology venture capital firm that serves as Liaison between Silicon Valley and emerging markets in sub-Saharan Africa.

agencies, media reports, policy documents, UNDP reports, and other relevant reports as espoused in the succeeding chapters.

Primary data was collected between July 1st to September 2nd, 2020. The collection was done through technology-assisted (WhatsApp and google meets), semi-structured in-depth individual interviews and questionnaires. In line with Cheng (2018:194) on virtual research techniques, this provided options to respondents amid the COVID-19 pandemic measures. I interviewed start-up chief executive officers, policymakers, ecosystem leaders, investors, start-up employees, and non-tech- entrepreneurs within Yabacon. To identify my respondents, I employed a simple random sampling of Nigerian start-ups and managers on LinkedIn. I contacted and interviewed them and subsequently engaged the use of snowball sampling to get referrals from them. This helped identify other respondents (Valentine, 2005: 117). Not all firms operate on the same scale and within the same niche; therefore, to ensure diversity, I further employed link tracing (Heckathorn and Cameron, 2017: 102). To this end, I identified vital hubs and accelerators within the ecosystem, which referred me to a diverse range of start-ups based on specialization. Furthermore, not all start-ups are affiliated with hubs and accelerators; Through respondents-driven sampling³, I efficiently identified others (Geddes et al., 2018: 348).

For analyses of existing Nigerian policy documents, unique concepts and keywords- such as entrepreneurial ecosystem, entrepreneurship, and the context they appear -were noted in selecting themes. This process contextualized the operationalization of start-up ecosystems and entrepreneurship in policy and practice. Descriptive statistics through the use of SPSS software is employed to make simple statistical presentations and to summarize the variables. According to O'Leary, the use of frequency tables, present "quantitative data in a manageable and intelligible form" (2017: 313). For qualitative data analysis, I read transcripts several times and generated sub-themes to correspond with the research objective. This proof-reading was to gain a clear and concise representation of Yabacon.

A total of 26 respondents (9 out of 26 were start-up CEO's)participated in the qualitative interviews from within the ecosystem, while another 30 start-up CEOs filled the questionnaires. These start-ups spread across, Fintech, e-commerce, E-estates, artificial intelligence, energy, health, software development, software arts, software logistics, education, and the internet of things.

The limitations encountered in the process of this study are noteworthy. The first is the sample size of 30 start-up respondents, which might not be an all-inclusive representation of the Yabacon. The limitation of time prevented a more scientifically chosen sample size. The use of referrals through snowballing limited the diversity of ideas and opinions as like-minded thinkers referred me to persons within their close business circle. However, due care was taken through link tracing to ensure a diversified selection of participants' from significant parts of the ecosystem. While I sought a gender-diverse pool of respondents, this study accessed only one female start-up entrepreneur.

Secondly, the COVID-19 pandemic and containment measures prevented me from travelling to Nigeria to interview the respondents physically. This affected observation of body language during in-depth interviews conducted virtually. This limitation worsened with the fluctuating network connection from Nigeria. It prolonged some interviews, while others were much seamless. However, transcripts were shared with some respondents to reconfirm the accuracy of the information gathered.

³ “RDS is described as a form of network sampling integrating link-tracing with multiplicity sampling... because of its use of multiple network links to increase the efficiency with which rare populations may be estimated” (Geddes et al, 2018:348)

Lastly, for a single case study research, the findings might not provide a basis for generalization in Sub-Saharan Africa. Even more so, the time available for data collection is relatively short, which has implications for the comprehensiveness of primary data. However, rigour in data collection and triangulation with secondary data has ensured integrity of data. Furthermore, the findings from this research should be interpreted to reflect contextual peculiarities in Sub-Saharan Africa with similar climates as Yabacon.

1.4 Researcher's Positionality and Ethics

Positionality is described as the researcher's position in various power relations (Huijsman, 2010: 58). This position could be gender, age, race, personal experience, economic and social status, and how they influence data collection and knowledge (Beger, 2015: 220). Thus, my positionality shaped interactions with my research participants and was a significant consideration in interpreting my research findings. In my interactions with some start-ups, snow-balled through a government official, I observed the willingness to speak to me for the anticipation that I could help alleviate some of the pressure they face from government regulations through informed recommendations to the Federal government. I made clear my non-affiliation with the government and maintained research as the sole purpose for the study.

Secondly, another set of start-ups expressed that, my nationality as a Nigerian who has lived in Nigeria placed me in a sympathetic position to their plight, especially concerning regulatory obligations. As opined by Berger, shared backgrounds put the researcher in a vantage position leading to a willingness to share (2015:2). Respondents shared sensitive information with me, trusting that I keep them anonymous.

Finally, I have had professional and personal engagements with some of the actors within the ecosystem. This initially put me in a position to be viewed on the one hand as not too critical (perceived closeness leading to subjectivity), or, on the other hand, too strict (while trying to prove personal objectivity). However, the deployment of sampling filters, open-ended questions, and triangulation of information obtained from individuals and institutions mitigate any direction of potential bias.

In observing ethical considerations for this study, I informed and sought the prior consent of respondents before interviewing and recording sessions. I also allowed them the leverage to select what methods of virtual communication were best suited to their comfort. Overall for the respondents personal information, only highly relevant ones were sought to avoid a compromise of their anonymity. To this end, names and specific addresses will not be employed in my analysis. The study is guided by the do no harm requirements (O'leary, 2017).

Chapter 2 Literature Review: Entrepreneurial Ecosystems And Informality

2.1 Introduction

Chapter 2 considers the debates on ecosystem elements, the role of government from regulatory functions to entrepreneurial functions and introduces informality as an element to appreciate the ecosystem dynamics in Sub Saharan Africa. The goal is to discuss the theoretical framework on which the Yabacon is analyzed to form the foundation for subsequent discussions.

2.2 Entrepreneurial ecosystems

Inspired by the Silicon Valley in California (Spigel, 2017:52 citing Saxien 1994), the entrepreneurial ecosystem was coined after the biological components of natural ecosystems that interact at varying levels of engagements (Sheriff and Muffatto, 2015: 18 citing Voelker 2012). The ecosystem concept views its elements and factors as organisms that are adaptable to their immediate and external environments for entrepreneurial growth (Sheriff and Muffatto, 2015: 20). Entrepreneurial ecosystems have been defined as;

"A combination of social, political, economic, and cultural elements within a region that support the development and growth of innovative start-ups and encourage nascent entrepreneurs and other actors to take the risks of starting, funding, and otherwise assisting high-risk ventures" (Spigel 2017:50).

While this definition provides the academic confines within which this research paper is situated, other Saxien inspired reports have emerged from his study of culture, institutions, and network frameworks of the technological agglomeration in Silicon Valley. Though these definitions address varying angles of the ecosystem literature, they point to regional development as the end goal of similar elemental interactions. (Stam, 2015: 1765).

As seen with the definition, ecosystem elements have also been diversely mapped. Notwithstanding the wide range of essential options, scholars have principally charted similar structures in the OECD and Isenberg inspired framework by Mazzarol (2014) - illustrated below in Fig. 1- which serves as a starting guide to analyzing the traditional composition of ecosystems. At the base of this circular framework (figure 1) is government policy. The government here refers to the policies that affect small and micro-levels of the economy. It also constitutes all governing structures operating alongside infrastructural provisions (Cohen, 2006; Isenberg, 2010; Malecki, 2011; Szerb et al., 2013; Feld, 2012; Spigel, 2017). Government policy, by design, address all constituents of the ecosystem for proper and effective functioning. Constituting the top-down and bottom-up approach. These policies address different sets of issues necessary for ecosystem development and provide a guarantee for high-risk enterprises (Spigel, 2017; Mazzarol 2014).

Figure 2.1
Entrepreneurial Ecosystem Framework



Source: Mazzarol 2014

With the government at the base of the framework, heterodox inspired entrepreneurial ecosystem theory underscores governmental efforts to foster ecosystems for the start-ups advantage. Inspired by Silicon Valley and other thriving ecosystems of the global North, the entrepreneurial ecosystem literature underlines the government's role in essential regulatory functions. However, in expanding the role of government, Mazzucato argues that Silicon Valley would not have been born without the state's entrepreneurial efforts (2011: 135). She argues that the ecosystem was built upon "decades of state-led vision about the power of the internet, decades of investment in the riskiest research, and decades of nurturing regional innovation systems and start-ups" (2011: 136). The Entrepreneurial State of California, in her view, ensured that private sector clusters within Silicon Valley thrived on the government's investments in risky research undertakings, which led to what she termed the "me too" product service market (2011: 132). By this, private sector leveraged on spin-offs- occasioned by high-risk investments in research -as a springboard, hence the birth of Silicon Valley.

Accordingly, the government's role transcends the minimalist view of government to a more pro-active role for developing economies to guarantee economic growth. If growth in the economy is to be led by innovation, the case is made that the government's position must exceed infrastructure and setting rules (Mazzucato, 2011). As history has shown, governments have "been a leading agent in achieving the type of innovative breakthroughs that allow companies to grow – not just by creating the 'conditions' that enable innovation but by proactively creating a strategy around new high-growth areas before the business community even understands the potential" (Mazzucato, 2011: 132). Mazzucato thus emphasized the government-driven shift from the internet "to nanotechnology; funding the most uncertain phase of the research that the private sector is too risk-averse to engage with; seeking and commissioning further developments through research, and often even overseeing the commercialization of 'general-purpose technologies' " (2011:132). This role speaks to innovation in highly uncertain and uncharted territories. It therefore, requires the establishment of organizations saddled with funding research, start-up support and building public-private

bridges. (Ibid). Mazzucato citing Acemoglu (2002) concludes that ecosystems are more likely to succeed when the state goes above its primary responsibilities by deepening entrepreneurial vision through research aimed at high-growth technology (2011b). In this regard, the ecosystem and entrepreneurial state literature converge on the Schumpeterian view on high-risk research-based entrepreneurship as drivers of growth (2013: 71).

While the ecosystem literature discusses the government's regulatory and taxation functions in detail, the literature on the entrepreneurial state has extended the conversation by postulating the government's entrepreneurial vision through massive investment in research. Owing to the responsibilities drawn from the ecosystem theory and the state's role in the entrepreneurial state concept, this paper highlights two aspects of state intervention; the Nigerian government's primary responsibilities of taxation and other regulations (infrastructure building). The second is where the entrepreneurial state theory expands the ecosystem theory, with regards to state responsibilities in envisioning new technological prospects through research investment. For this research, the role of government will be discussed within the confines of these roles.

The government's role in entrepreneurial undertakings has been further underlined by other theoretical allies of the entrepreneurial ecosystem concept. Another such ally is the National innovation system (NIS) , which draws on the government's role as the centre of entrepreneurship. However, while both NIS and ecosystem literature share a common focus on increasing firms' competitiveness, the latter is influenced by the belief that successful entrepreneurship is built upon private-sector leadership strengthened by social networks between firms and supported by the government. In this regard, the state is recognized as an essential support system functioning through policies, research investments, and universities (Spigel, 2017: 51). This does not underestimate the underlying research importance of the NIS; however, for this paper, findings should be interpreted employing the agent-centered-Meso approach at the heart of the entrepreneurial ecosystem theory.

Classical studies on ecosystems present other elements like Culture to shape the acceptable practices and customs towards risk-taking and entrepreneurship. The cultural attitudes and history of entrepreneurship shared within the region form the basis for the existing entrepreneurial productivity (Feld, 2012; Spigel, 2015; Mazzarol, 2014). Cultures that normalize entrepreneurship as a part of life, are more likely to promote entrepreneurship against a culture that presents entrepreneurship as a last resort when other options fail (Kibler, Kautonen, & Fink, 2014; Spigel, 2015). In Nigeria, the culture of entrepreneurship and risk-taking is essential to understand how entrepreneurs proliferate within institutionally ailing societies of Sub-Saharan Africa. More so, informality is tolerated and accepted as an entrepreneurial culture in developing economies, as it remains an institutionally preconditioned choice (Gomez and Fransen, 2020: 195). The impact of entrepreneurial risk-taking culture and informality present relevant entry points for understanding support to start-ups in Yabacon.

Ecosystems must also maintain availability and accessibility to local and global markets. Access must be stimulated by actors within the ecosystem to ensure free ingress into the market (Cukier et al., 2018). However, this is dependent on the viability and usability (fit for purpose and local conditions) of products. Demand is also driven by need, and as such local conditions and quality of products are an essential determinant of the market (Mazzarol, 2014; Feld, 2012; Spigel, 2015).

Funding and Financing is an equally important factor that guarantees the presence of investment opportunity, and access thereof form a vital element for ecosystems (Feld,2012; Spigel, 2015; Mazzarol, 2014:9). This is also true of Mentors and Support systems important for advisory reasons (Feld, 2012; Spigel, 2015; Mazzarol, 2014:9). For information and assistance in entrepreneurship, extant literature has stressed the role of Hubs and accelerators as a support system to start-ups at their different growth stages (Spigel, 2017:54). Universities

as catalysts serve as banks for training, educating, and reproducing entrepreneurs and skilled employees (Mazzarol, 2014:9; Feld,2012; Spigel, 2015; Cukier et al., 2018). Education and training institutions are essential elements as they guarantee human capital and workforce. The presence of educated talents and training opportunities for skills development and acquisition is very important. This, therefore, determines access to social capital and a healthy workforce strength (Mazzarol, 2014; Feld, 2012; Spigel, 2015; Cukier et al., 2018).

Entrepreneurial ecosystem literature has also faced some academic criticisms. Motoyama and Watkins (2014) criticized the theory for ignoring the interdependency between elements through which the ecosystem is reproduced. Spigel (2017), in response, introduced the relational model of interdependencies between the cultural, social, and material aspects of ecosystems, contributing to entrepreneurial growth. This model was employed in explaining the growth rates of ecosystems in Waterloo, Calgary, and Canada; he, therefore, concludes that material factors like universities, knowledge, and government-funding for start-ups are likely to fail without the other cultural and social elements (2017: 67).

Secondly, the ecosystem theory has been criticized for its failure in addressing "what is the cause and what is the effect" (Stam, 2015:1764). The import of this criticism presupposes a dark path to what factors of the ecosystem cause specific changes, and those that constitute its effect. To this end, Audretsch and Belitski (2017) traced the cause and effect to the efficiency in entrepreneurship, while Spigel, in response to these criticisms, developed a model that explains successful outcomes in ecosystems. He insists that that isolating one significant aspect of the ecosystem, such as university knowledge transfer, for instance, would not be causal enough to warrant a change in such a complex framework (2020: 9).

Lastly, on criticisms, ecosystem theory has been critiqued for its concentration on advanced economies with Silicon Valley as the holy grail (Cukier et al., 2016). This study builds upon efforts made by Cukier et al.(2016); Isenberg (2010); Spigel (2017) in addressing the criticism by giving attention to the dynamics of the Yabacon. Findings in this paper, therefore speak to the body of literature critiquing the over-concentration of studies in advanced economies. I argue for the uniqueness of the Sub-Saharan ecosystem in the manner of support they provide to start-ups. I explore the dynamics of the Yabacon as a case study of Sub Saharan ecosystems entrenched in ailing infrastructural challenges.

Zooming into sparse literature on ecosystems in developing economies; Since the turn of the 20th century, start-up ecosystems have emerged in diverse locations of the world (Cukier et al., 2016). Start-ups in their operations usually specialize and exhibit different features and dynamics. In India, technology start-up ecosystems indicate elements that constitute the triple helix model (Subrahmanya, 2017:59). This model highlights the primary and secondary factors that provide indispensable and supplementary factors in an ecosystem, respectively. Consequently, tech-start-ups tend to thrive better when immersed in an entrepreneurial ecosystem with the commonly identified empirical factors ranging from finance, talent, mentors, and support structure as indispensable. At the same time, culture, media, and weather serve as additional factors (2017:59).

The elements prescribed by Isenberg (2010), namely - policies, finance, technical support, human resources, and markets, are passively present in the start-up ecosystems in Ghana, Uganda, Egypt, and Botswana (Sheriff and Muffatto, 2015: 43). A polygonal study of start-up ecosystems in these countries reveals a delink between these six elements and recommends that these interactions be made active and strengthened by identifying weak links. Sheriff and Muffatto suggest forming a nation-wide entrepreneurship mission to enhance the sustainability of ecosystems (2015:47).

Universities have been handpicked and their roles designated in the ecosystem literature. Oluwatobi et al. undertook a framework of entrepreneurial ecosystems to direct the evolution of Nigerian Universities in becoming the backbone of start-up companies (2019: 3).

Therefore, the writers developed a matrix to reveal the potential interactions that could occur between universities and ecosystems in Nigeria. The matrix explains the preconditions and extent to which the talents are incentivized for resourceful enterprising (2019: 2).

In more specific terms, the Bank of Industry of Nigeria has stressed the importance of the Yaba start-up software technology cluster - as the largest start-up ecosystem in Nigeria. This enthronement comes with a "local entrepreneurship scene worth an estimated US\$2billion" (BOI, 2018).

The basic structure of tech start-up ecosystems indicates institutions, agencies, actors, and factors that function in formal economic settings. The importance of the informal sector is less emphasized, although it forms a significant part of the fabric of the economy of most developing economies. This, therefore, sets an unspoken formula of what is to be expected of technology ecosystems around the world. Yet, emerging worldwide are ecosystems like Yabacon, springing up in economic settings where informality permeates. This happens even while retaining the essential ecosystem elements, as highlighted by Mazzarol (2014). According to Lawal et al., informality in developing economies determines, to no small extent- the productivity of start-ups (2018). Therefore, with the conclusion in literature that no two ecosystems are entirely similar, the importance of informality as a local condition within developing contexts is critical to this study.

2.3 Informality as a local element

A vital specificity of many developing countries is the informal sector's ubiquity and its demonstrated contribution to economic output and employment (Kraemer, 2016:1). The World Bank defines informality as a "term used to describe the collection of firms, workers, and activities that operate outside the legal and regulatory systems" (World bank policy research paper, 2016). The informal sector contributes over 35% of GDP in developing countries and accounts for over 70% of the workforce in these developing economies (ibid). The high capital, information asymmetry, ailing infrastructures, skills and labour requirements needed to start formal business and entrepreneurship make informality in developing countries an attractive alternative.

The multidimensional nature of informality possesses enormous challenges in defining its scope and nature. However, Medvedev and Oviedo focus on the productivity view of informality, which highlights the enterprise's legal status. For them, this "includes small-scale production units with no legal separation from their owners. Such are family-based businesses in which one or more family members participate" (Medvedev and Oviedo, 2015: 416). The second view entails the social protection approach which focuses on "employment, recognizing that formally registered firms may establish informal working contracts with employees, thus avoiding social security, severance, and other mandatory payments" (Ibid). This explains how and why both formal and informal entrepreneurs engage in everyday practices (Ibid).

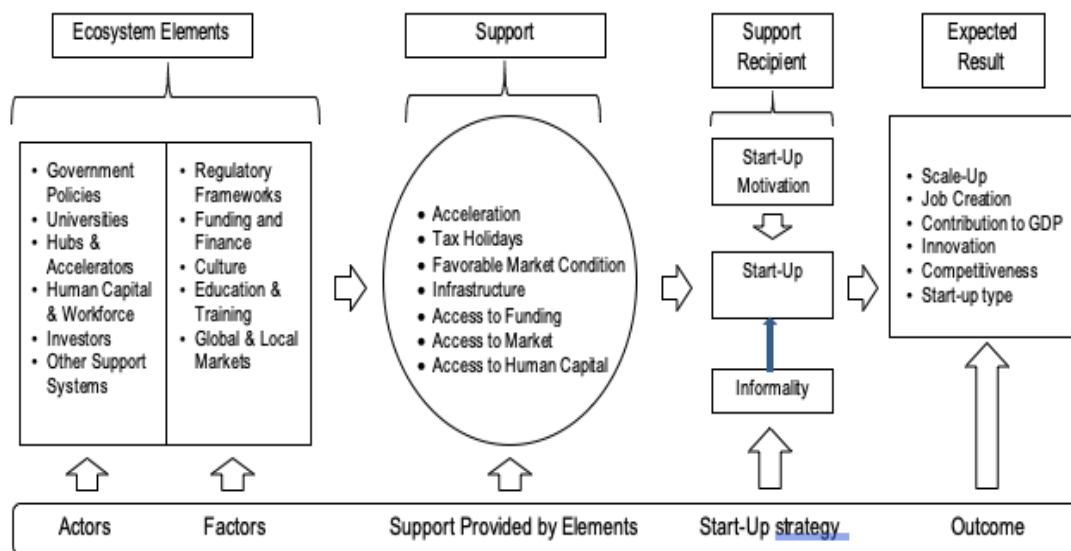
Sub-Saharan economies are mostly informal, "where many firms operate without compliance with labour market rules, tax regulations, and other formal requirements that govern the operation of businesses. Yet, it is often seen as leading to more effectiveness, cost reduction, and flexibility that encourage development" (Meghir et al., 2015). Nevertheless, identified downsides, which range from tax evasion to lessened social security for the workforce, have been highlighted. However, (Meghir et al., 2015) have emphasized its importance to developing economies that experience poor education, infrastructural deficiencies, inadequate government support, and poor market conditions.

One of the critical purposes of entrepreneurship in developing economies is to maximize production factors to amplify productivity in poor market conditions (Acs and Virgill, 2010: 489, citing Leff, 1979). Therefore, entrepreneurs react to these imperfections by developing strategies in "gap-filling and second-best solutions" (2010: 489). With the rising rate of unemployment in most developing economies of the world, "it is generally argued that unemployment and informality are the two faces of the same coin and that policymakers cannot contend with the latter without harming the former." This reaction is because a reduction in informality leads to an increment in unemployment (Charlot, Malherbet, and Terra, 2015: 2; Elgin and Erturk, 2019: 227). The strict adherence to the enforcement of Labor market policies is also a strong determinant of informality in developing economies (Elgin and Erturk, 2019: 230). Hinging on the fact that "the formal-informal continuum pervades supportive entrepreneurial ecosystems. (Gomez and Franssen, 2020: 194), I explore Yabacon by first building upon the elements by Mazzarol (2014) and with the aid of informality and other efforts by private sector actors - occasioned by weak institutions- I expand upon the uniqueness of Yabacon as an ecosystem in Sub-Saharan Africa (SSA).

2.4 Analytical Framework

To build an analytical framework suitable to study entrepreneurial ecosystems in the context of SSA, I modify Mazzarol's framework of 2014 in Figure 1 and add on informality as a unique element, introduced in the theoretical framework.

Figure 2.2
Analytical Framework



Source: Fieldwork 2020.

Chapter 3 Support to software start-ups in Yabacon

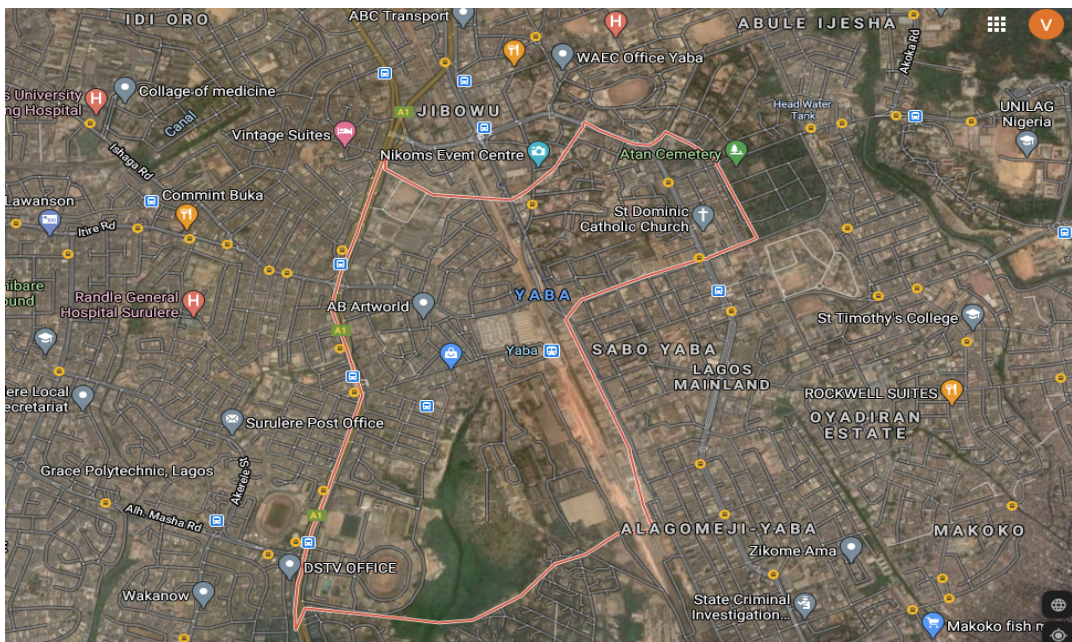
3.1 Introduction

This chapter underscores the evolution, current dynamics of Yabacon, and its support for start-ups. It features the elements that have climaxed into an ecosystem, providing sustenance to software start-ups. The chapter presents the ecosystem elements in the line introduced by existing literature and goes on to engage features unique to Yabacon

3.2 Yaba: Evolution of a software start-up ecosystem

According to Isenberg, ecosystems' evolutionary pace is not cast in stone; with no apparent one size fits all formula, ecosystems emerge through practical imperfect road maps (2010: 1). This has been right of the Yabacon, a suburban area in the mainland of Lagos. This software dominated ecosystem evolved from a start-up incubation partnership between Cc-Hub⁴ and the African Leadership Forum in 2011, following the state-supported installation of a fibre-optic-powered superhighway in 2013 (Adetunji et al., .2018; Tech-Cabal, 2015).

Map 3.1
Map of Lagos showing Yaba



Source: Google satellite map of Yaba, Lagos 2020

Built upon the subsequent interactions between young software entrepreneurs and other actors, the organically developed cluster has spurred the birth of Yabacon in Nigeria (Adetunji et al., 2018; Jackson, 2017).

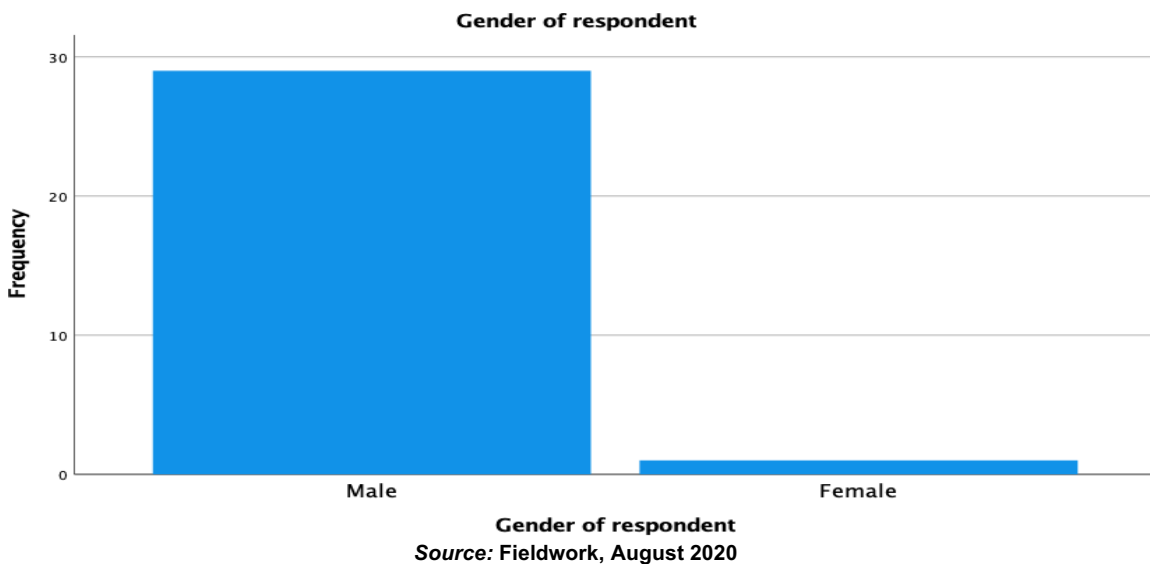
⁴ Co-creation Hub is an innovation hub and start-up accelerator in Yabacon

3.3 Background characteristics of start-up respondents

To determine the sample size, information was obtained first about the current 'population' of start-ups in the locality. Initial searches from the internet yielded 61 start-ups, which were later modified to 60 with information received from the National Information Technology Development Agency (NITDA). The NITDA and Co-creation Hub (one of the ecosystems leaders) were contacted among other sources that identified some start-up owners, 30 of whom responded positively to the questionnaires. Their background characteristics are presented below in Figure 3.1 and Table 1.1.

Field data in figure 3,1 indicates that software start-up ownership is a predominantly male field (96.7%). This serves as further evidence about the near-absence or low-level representation of females in professions taken as technical, which in itself is an outcome of fewer females undertaking STEM subjects in Nigerian schools. In Nigeria, women make only 22% of the total number of Engineering and Technology graduates yearly (W.TEC, 2020).

Figure 3.1
Gender distribution of start-ups in Yabacon



Irrespective of gender, the average age of start-up owners is 30.2 years, and the minimum level of education held by start-up owners is tertiary (polytechnic, university) levels. One-third of the respondents are with postgraduate education. According to the Start-up genome, Lagos comes 3rd highest globally, with 93% of its start-up as tech-based graduates (2018:133). On average, owners were able to establish start-ups is 3.6 years after acquiring tertiary education, and they have averagely been in operation continuously for more than three years.

Table 3.1
Characteristics of start-up CEO's

Background	Mean	Minimum	Maximum
Age	30.2 (years)	21.0	38.0
Years after graduation start-up established	3.6 (years)	1.0	8.0
Office hours per day (owner)	7.7 (hours)	4.0	10.0
Office hours per day (intern)	7.2 (hours)		
Length of time start-up has been operating	3.2 (years)	0.8	10.0
Funding/investment deals per year	1.8	0.0	10.0

Source: Fieldwork August, 2020.

This study draws from Mazzarol's framework (2014) by posing a research questionnaire consisting of a structured 3 points Likert scale. In table 2.1, 30 surveyed start-ups voted on the extent to which they receive support from the elements listed below.

Table 2.2
Measurements of supporting elements within Yabacon

Agencies, institutions, structures	Number	Proportion
Tertiary institutions	8	26.7
Government agencies and policies	6	20.0
Incubators	19	63.3
Human capital & workforce	28	93.3
Access to training	26	86.7
Access to local and global markets	24	80.0
Venture Capital	10	33.3
Angel investors	18	60.0
Mentors	22	73.3
Culture	26	86.7
Total	30	

. Source: Fieldwork, August 2020

3.4 Analyzing classical ecosystem elements in Yabacon

This section underlines private sector hubs, culture, mentors, access to funding and market as traditional elements that reflect in similar outcomes in Yabacon. These elements refer to how the synergies of an ecosystem boost competitiveness and entrepreneurship as contained in the extant literature and summarized by Mazzarol (2014). Furthermore, unique and pragmatic elements are described as part of Yabacon's support to start-ups, justifying Isenberg's conclusion that, there are only practical maps to creating entrepreneurial ecosystems (Isenberg, 2010: 1).

Ecosystems provide access to hubs and accelerators, which help foster start-ups by imparting technical, product, and market-based knowledge to aid business structure and strategies (Mason and Brown, 2014: 13). Start-ups within Yabacon access material benefits like training platforms to learn the rudiments of engaging software entrepreneurship and pitching for funding at hackathons. They learn to measure the viability of products and how best to push a product to Market. One of the respondents indicated :

"We learned a lot from incubating in the Hub. A whole lot about how to run our business, and they helped us shape our ideas to fit the Market needs too. They tell you a lot that you need to know about what sells and what does not. I owe the success of my business to CC-Hub. They taught us that you could run a start-up and be successful if you follow some structures." (29 year old software start-up)

Consequently, Thornton, Ribeiro-Soriano, and Urbano have stated that, though entrepreneurs may have the skill and talent, necessary to establish a business idea, they require other forms of external resources to grow (2011:108). In Yabacon, a 36-year old software developer described the challenges in entry and bringing ideas to fruition. Consequently, private sector hubs in Yabacon assist start-ups with resources like pre-incubation training to build and launch prototypes for validation, with an initial cash investment of between \$5,000 - \$25,000 and a follow-up funding of USD 250,000 for scale-up (Co-creation Hub, 2020).

Hubs also provide co-working spaces for start-ups to operate (Spigel, 2017:54). This co-working spaces aid start-ups to co-create among themselves (Obeysekare, 2017: 3) Start-ups in Yabacon leverage on similar opportunities of proximity to co-create, innovate and support each other to be more competitive. Additionally, these hubs provide start-ups with the necessary enabling physical environment by providing affordable workspace accommodation:

"The co-working space is a win-win for us start-ups. We pay as little as nothing to gain access to the 6th floor on Herbert Macauley way in Yaba. Once you are in, office space is sorted and many more advantages like the internet, meeting rooms, etc. come with it. You can imagine the burden it takes away from us". (A 31-year-old software entrepreneur).

As a result, hubs engineer co-founding within Yabacon, with respondents narrating how they met within co-working spaces and decided to co-found businesses. This has encouraging effects on entrepreneurship, as start-ups are exposed to complementary skills for developing software products and maximizing cost. Events as Hackathons' are organized to provide avenues for collaboration and investments opportunities (The Africa Report, 2020). At these events, complementary products are sometimes paired, and start-ups become co-founders. They pool funds, share cost of inputs and maximize benefits. A 28-year-old software engineer indicated:

"In 2012, I co-founded a start-up that was founded in the prestigious CC hub at Yaba. At the Hub, I met a couple of other entrepreneurs and techies; I collaborated with a lot of them by making up for skills that each partner lacked. This has been cost-effective and efficient for most of us. Having a hub in Yaba like the CC-hub has been instrumental."

Typically, hubs provide access to investment opportunities for start-ups to enhance productivity (Spigel, 2017:54). Therefore, described as meeting points for global giants, hubs in Yabacon have been instrumental to start-ups by providing access to investment opportunities and start-up capital while eliminating information asymmetry. As explained by one respondent;

"Anybody coming into Nigeria, e.g., Facebook, they all go through the hub, from the hub we saw some of these guys and we were able to interact with some of them, and from there, deals are struck" (A 35-year-old software entrepreneur).

Nevertheless, while networks within ecosystems promote access to funding for new firms, this benefit is based on pre-existing relationships and trust as prerequisites (Spigel, 2017: 53). Hubs and accelerators in Yabacon provide investment and funding references to trusted start-ups with whom they share prior work relationships. The ecosystem exposes start-ups to other successful entrepreneurs, angel investors, and indirectly to venture capitalists who provide access to funds. This exposure is explained thus:

"We also have angel investors in Yaba who are investing in businesses. So, we have the Lagos Angel Network; we have TL com investors. They are in Yaba. The former minister for communication has an investment firm, so we have a robust investing apparatus, investing companies in Yaba. And these are all key because for a start-up you need support, financially." (A 31-year-old software entrepreneur).

Understandably, investors within ecosystems also work to protect their investments by providing "hands-on" support to start-ups (Malecki,2018:7; Spigel,2017:54). Through this study, start-ups in Yabacon highlight the importance of angel investors like the Chan Zuckerberg Foundation and their involvement in building start-ups' capacity and introducing them to possible market opportunities to increase the productivity of investments. Hubs with investment arms also serve as essential investment sources to start-up entrepreneurs they trust.

Akin to trust is the exclusivity model of engagement by hubs in Yabacon. This is due to the belief that hubs within the ecosystem, only provide mentorship to start-ups incubated by them. There is therefore, a disconnect between start-ups that found their way to the ecosystem independent of hubs and the hubs themselves. Some start-ups are thus, mentored by persons unconnected to the ecosystem. This explains why, of the 30 start-ups, only 63% indicated hubs as core to their success.

"I feel the communities exist in two silos. Hubs protect and mentor their own, you know. The rest of us look outside. This is not to say I do not get inspired by some of their success stories because that is why I moved my office to Yaba. I am just saying that they have their interest even though the rest of us not affiliated with hubs enjoy a lot of benefits by mere operating from Yaba" (A 36-year-old software entrepreneur).

Nonetheless, role models and mentors remain a vital aspect of the ecosystem for the provision of entrepreneurial guidance to start-ups. The ecosystem framework considers entrepreneurship a lonely road made worse without mentors' (Lingelbach, De La Vina, and Asel, 2011). Mentors thus provide advice that improves start-ups' performance and sustainability within the ecosystem (Spigel,2017:53; (Malecki, 2018:7).). In Yabacon, this is mostly the case as mentors who have been successful start-ups are now providing mentorship support to start-ups. This study found the invaluable importance of mentors to start-ups in unique ways:

"I kept losing deals within our first few months of business, and I did not know why. I lost them at mostly the same time into negotiations. It was my mentor that counselled me on upgrading to a limited liability company from a business name because, from his experience, he discovered that I lost these clients at the due diligence stage when they found out I was a business name and their policies do not permit dealings with business names. This is because it is slightly more informal, even though it is registered with CAC. I would have been stuck at doing small jobs if my mentor did not advise me" (A 36-year-old art software entrepreneur).

Correspondingly, the importance of success stories to start-ups has been emphasized by the World Economic Forum (2013: 7). Gomez-Araujo and Bayon citing Wood and Bandura, suggest that entrepreneurial role models build young individuals skills (2017:203). As a result of success stories from previous employers within Yabacon, start-up entrepreneurs are inspired to establish their own businesses. This consequently, guarantees the proliferation of companies' inspired by the success stories and skills acquisition in Yabacon.

Furthermore, the proliferation of successful start-ups through the legitimizing of entrepreneurship is largely a consequence of stories of role models. This nurture entrepreneurial aspirations within ecosystems (Brown and Mason,2014:15). Extant ecosystem literature argues for the awareness and motivational effect by role models in starting a business (Gómez-Araujo and Bayon, 2017: 203). Wyrwich, Stuetzer, and Sternberg argue that "contacts with

young entrepreneurs will reduce start-up costs because they make it easier to get answers to lots of 'how-to' type questions related to a start-up"(2016:468). Within Yabacon, role models⁵ inspire start-up entrepreneurs at two levels; start-ups that serve as role models by providing motivational effects on initial plans to start software businesses within the ecosystem and motivation supplied by older entrepreneurs. The hubs offer the platform for such experience-sharing and start-ups indicated that role models within the ecosystem stoked their entrepreneurial aspirations.

To fulfil these aspirations, self-sustaining entrepreneurs require access to markets afforded by ecosystems (Isenberg, 2011:6), and complementary to this is that Start-ups in ecosystems benefit from the diffusion of information, gossip, and news just by "being there" (Mason and Brown, 2014: 14, citing Gertler, 2003). According to the United Nations, "Lagos is projected to become the third-largest consumer market globally with a population of 35.8 million by 2020" (British council ,2020). Owing to its widespread reputation as the software depot in Lagos, Yabacon is the first point of call for both the random and usual customer base of this projected 35.8 million. Developing information based solutions, the start-ups serve this large population in Lagos and extends to other regions. Start-ups gain access to information and knowledge on markets that would otherwise not be available (Spigel,2017:53). ultimately, the networks within Yabacon, through knowledge transfer provide start-ups with information (through research and surveys) on current market demand while guaranteeing constant access to these markets;

"We get first-hand information and referrals, and this is good because we get this before most of our competition outside the ecosystem" (A 28-year-old e-estate start-up entrepreneur).

An e-commerce software start-up further explained:

"When we started, we started on the Island, Obalende Onikan area. So there were a lot of activities going on in Yaba. We were like outsiders. We were in the tech space, but we felt like we were outside the tech space. So been in Yaba, we are here for the action. Mark Zuckerberg came to Lagos he came to Yaba, head of Twitter came to Lagos, he came to Yaba. So, you better be where the action is. For us, it was an easy decision to make. Being in the ecosystem that supports and compliments your offers by exposing you to big markets was the strongest reason why we had to locate ourselves in Yaba"

Entrepreneurial Culture normalizes entrepreneurship as a career path, creating the necessary environment for the proliferation of Firms (Spigel,2017: 52). Lagos's city has been described as the fastest-growing city in the African continent, with entrepreneurship as a people's culture. Expressed as "the feverish entrepreneurial energy of Lagos" (start-up genome, 2018: 133), Lagos possesses an inherent entrepreneurial spirit (Venture Capital for Africa, 2018). The culture extends to Yabacon, with entrepreneurship recognized as a career within the technology community. This further increases the threshold for risk-taking and a positive attitude towards failure within the ecosystem.

"What we have the most is the spirit of doing business. You know that Naija hustling spirit of entrepreneurship. It is something you feel, smell and see around" (A 36-year-old software entrepreneur).

Notably, a 2015 GEM report , reveals that Nigeria leads the world in enthusiasm for the business. The report provides that Nigeria had a percentage fear of failure rate of 20.69 and 16.33 in 2012 and 2013, respectively, which is among the lowest globally (Zouria and Udanoh, 2017:365). In Yabacon, the combination of the entrepreneurial and risk culture enables start-ups to start over with support from ecosystem networks. However, the benefit of risk culture is not absolute, as it

⁵ Role models are individuals who set examples to be emulated by others and may stimulate career decisions (Gomez-Arujo and Bayon, 2017: 203 citing Bosma et al 2012)

is indicative of a precondition that the entrepreneur has exhibited qualities of trustworthiness. A 31-year-old software entrepreneur indicated:

"After my first business failed, someone I have worked with for a long time trusted me enough that he was able to make that commitment to investing in my business. One of the factors is that I have been around them for some time, and they see how I work, and they have seen maybe to them they probably think this guy is bankable or something like that, and I think I have been a good person too. They knew how the previous business failed because our office was within their co-working space. They saw me often and monitored my attitude towards the business, I guess. So that's the reason why I think they invested in me or helped".

Although many start-ups that fail take a short break to catch their breath, they often get back in the game quickly due to the attitude to failure, which sees the ecosystem absorb entrepreneurs into other companies after failed attempts (Mason and Bown, 2014: 11). In Yabacon, some start-ups who fail are afforded employment opportunities by hubs and other social enterprises to give them time to restructure and come back stronger

"They knew I had to feed, I had bills to pay and had lost everything. You know this country is hard, so they offered me employment as a CTO and helped me build back my current business".

It follows that, the absence of the fear of failure provides a safe landing for start-ups within the ecosystem to take risks in establishing and pursuing future entrepreneurial goals. Spigel explained this as a lesson and nudge for future entrepreneurial journeys (2017:65). Consequently, start-up entrepreneurs in Yabacon perceive hubs and other social enterprises' attitudes as safety nets occasioned by tolerance for failure that is not induced by negligence. Gomez- Araujo, and Bayon citing Landier, 2004, indicated that "in cultures where there are greater tolerance and acceptance of business failure, people tend to be more entrepreneurial (2017: 204). Employment opportunities are a reoccurring safety net, as mentioned by many of the start-ups in Yabacon. They view this as a sign of tolerance for failure and an immense encouragement for entrepreneurship

In Yabacon, findings further reveal traditional elements that operate within exceptional circumstances. This underscores local funders, venture capitalist, and patent lawyers /accountants. Local funders are relevant as they help catalyze start-ups' growth (Spigel, 2017: 53). Yabacon provides access to local funding, with some respondents attesting to the productive engagement with a handful of start-ups. However, the relationship with the existing few local investors revealed a divide in start-ups' responses. This is due to two significant reasons: the local investors did not make their monies from technology in Nigeria, and so the "lengthy turn overtime constitutes a turn off for investment. Consequently, of the \$28.35m in Q2 of 2020 raised by Nigerian start-ups, only about 4.5% came from local investors (Tech-point, 2020). An e-commerce software start-up noted:

"they don't understand tech even though they try to invest in tech because they have seen the power of tech. But because of the way they made their money, through loans to government contractors and from oil especially, they always expect the turn over to be very easy and lump sum. Someone will give you money and start expecting returns in less than six months because he is always giving money to huge government contractors, and they pay them a lot of money in short months, but tech is not like that".

Secondly, start-ups nurse a lack of trust for local investors. The fear of takeover raises imminent suspicion

"where people try to invest in your business because they are thinking of taking over your business. With such a reputation, start-ups are afraid to take up investment from some local

investors. They are like sharks and only understand the language of money" (A 36-year-old software entrepreneur).

Funding by venture capitalist is important, however in developing economies, venture capital funds work with only small numbers of companies, limiting their development impact" (Lingelbach, De La Vina, and Asel, 2011). The venture capitalist's role in fostering the start-ups' entrepreneurial growth is limited and indirect within Yabacon. While the start-ups report an insignificant engagement with venture groups, a few hubs explained the interest of venture capitalists in larger enterprises. It is therefore not surprising that only 33.3% of start-ups in the survey recognized their investment support.

Spigel explains the need for other support like Patent lawyers and accountants (2015:54). In Yabacon, the use of these support services depends mostly on affordability which is determined by the attachment of start-ups to hubs and accelerators. More so, the start-ups within Yabacon do not consider patent as a necessity to their current business models.

3.6 Unique ecosystem elements

In the design of this study, I did not expect to find that crime and reputation would affect the ecosystem; however, the protection against police brutality and providing a reputation opposed to existing cybercrime stereotypes emerged as part of the support to start-ups. This section concludes with informal entrepreneurs and the support they provide to start-ups

While risk tolerance indicates economic security for entrepreneurs, there is a significant need for complete security (Colin, 2016). Over the years, tech-entrepreneurs in Nigeria have been stereotyped as criminals for the mere fact that they are found with laptops (Forbes, 2019). It has been common practice for a particular department of the Nigerian police force known as the state anti-robbery squad (SARS) to stop and arrest young men with Mac books and iPhones. In most cases, the stereotype degenerated into harassment, kidnap, and robbery, which sees the police-state anti-robbery squad met out unwarranted and inhumane treatment to tech entrepreneurs in Lagos (Omotayo et al., 2020: 91). Noting this as a challenge to tech start-up entrepreneurs, the leadership of Yabacon began a dialogue with the National Information Technology Development Agency (NITDA)⁶ and other government agencies to facilitate protection for start-ups;

"The police in Lagos have been trying to curtail cybercrime, it became a bit overzealous, and they have been harassing a lot of the start-ups and their employees, so when they see a young person with a laptop, you become a victim or subject for harassment. So NITDA contacted the minister for communication, who then wrote to the IG of police requiring that the police desist from harassing people within that cluster. Especially those responsible for the security and the normal operation of the police within that cluster" (An official of the NITDA).

Subsequently, the ecosystem leaders decided to move a notch higher than dialogue with the authorities to begin a campaign called #StopRobbingUs (Tech Crunch, 2019). This aims at putting a stop to the harassment of tech entrepreneurs as depicted in the figure below. One of the start-ups explained;

"I wanted to say that for the yahoo thing, a lot of tech guys in the ecosystem were affected in the past. Because police were arresting a lot of tech people, and they were a lot of cries on Twitter, which made some tech leaders stand up. We had a dialogue with the police, and we tried as much as possible to make sure that it is stopped, especially for tech guys. We have started a campaign called #StopRobbingUs, and we might even institute a class act too. Not

⁶ NITDA is a public service institution established in 2007 by an act of the National assembly as an ICT policy implementing arm of the Ministry of communication in Nigeria.

everybody with a laptop and an iPhone, a criminal. Now, this has drawn attention to the issue and start-ups are assured of support from the ecosystem leaders" (A 35-year-old software entrepreneur explained).

Figure 4.2
Campaign Flier for #stoprobbingus



Source: EnoughisEnough Nigeria, December 2019

This campaign has, to a large extent, protected tech start-ups in Yabacon. The campaign raised the sum of 30,000 dollars within 24 hours of its launch to support victims and protect the young in technology (BBC, September 2019) just as a respondent reported;

"I feel safer here in Yaba than in other places. Provided you are legit; the leadership is ready to fight for your safety. Unlike some areas in other parts of town. Since the leadership of the Yaba ecosystem started speaking out, the harassment has reduced. If you are harassed outside Yaba and you call the leaders of the ecosystem, they will come to your aid" (An e-commerce start-up entrepreneur)

Respondents reveal that the protection is not limited to those attached to hubs alone because the ecosystem leaders have taken up the fight against police brutality in favour of tech entrepreneurs. Their advocacy has extended protection to all start-ups within the ecosystem.

In Nigeria, cybercrime and investment fraud, popularly known as 419 or yahoo⁷ has posed a large huddle to the country's reputation and its start-up's quest for foreign investments (Ibrahim 2020:10). The Yahoo-scheme tainted start-ups' path and biased investors

⁷ "yahoo" refers to the activities which entail the use of computers, phones and the Internet to defraud unsuspecting victims, especially those outside the country" (Adejoh et al 2019:2)

and prospective markets' minds. However, while so many tech-based start-ups grapple with securing local and foreign investment opportunities, the Yabacon has been valued at 2 billion dollars by the Bank of industry and the start-up genome. This is because the establishment of the "Yabacon valley" at the turn of the 20th century - and at a time when the reputation of the "Nigerian prince on Facebook" presented a looming dark cloud to foreign investors - served as a counter to the negative attention drawn to start-ups (Dada, 2018). Positive reputation breeds efficiency in resource use and competency and makes a region "a desired partner for economic transactions" (Aula and Harmaakorpi, 2008: 524). Consequently, the deliberately built reputation of Yabacon eases business trajectories for start-ups. This reduces the number of huddles start-ups have to overcome while affording them a positive branding platform to leverage upon. A 35-year-old software entrepreneur explained:

"So, I think especially for tech people in Nigeria the global obstacles with all this yahoo thing has affected a lot of tech people that had hopes of getting jobs abroad, investments, and even customers. But we started to create a positive image of Nigeria, especially the tech people in Yaba. We are still working with global companies, and we hope that this positive works will continue to override the negative ones and affiliation with hubs in the Yaba ecosystem is helping"

Similarly, this positive branding provides a safe place for investors in Yabacon. As a result, with regards to safety of their funds, investors' fears, caused by the reputation challenge is put to rest. This is done through, the delivery of quality and affordable services, and the conduct of due diligence on start-ups affiliated to hubs and accelerators. One of the investors interviewed explained:

"hubs and others around, they provided a safe space for us to deal with start-ups, that's why you see that most of our deals go to start-ups in Yaba, it is safer, and the ecosystem has a good reputation, the scammers did not get this one I may say."

Informal entrepreneurs are also actors within Yabacon, providing support to start-ups. Extant literature on ecosystems underestimate informal sector entrepreneurs. However, the following linkages explain an indirect link between the support for human resource welfare, provided by informal entrepreneurs, described by Berner et al. as "informal proletariat" and growth-oriented informal entrepreneurs (2012: 382).

It is "largely recognized that street foods play an important socio-economic role in serving affordable food to the lower and middle-income groups" (Muzaffar et al., 2009:81). Furthermore, these "Street food enterprises are generally small in size; require relatively simple skills, basic facilities, and small amounts of capital" (Njaya, 2014: 20). This is true of street vendors in the Yabacon. The National Bureau of Statistics estimates that there are approximately 2.38 million men and 3.2million women living off the informal sector in Lagos. This represents 65% of the working population and accounts for about 42 % of economic activities" in Lagos (Bugdit, 2016: 4). This extends to the economic activities in Yabacon.

Consequently, Street food patronage sees about 2.5 billion persons patronize vendors daily in developing economies (Njaya, 2014: 20, citing the food and Agricultural Organization). In Yabacon, by their consumption of street food, lower-income workers hired by technology start-up entrepreneurs on an informal basis create a linkage between the informal and formal sectors. This is because, to no small extent — for their daily welfare involving lunch at work—these "working poor look to the most visible occupational groups of informal street vendors. For this reason and more, street food vending has subsisted for those with; little time to prepare home-cooked food before leaving for work and long hours spent away from home. According to Mensah et al., the expansion of street food trade in developing economies is also "due to the substantial demand for food services not met by the formal sector restaurants; canteens and other eating places" (2016: 952). In Yabacon, selling goods

like Gala, eggroll, soft drinks, Roadside Noddle's, rice, these entrepreneurs provide daily support to start-up employees unable to afford formal restaurants. A 25-year-old employee of a start-up explained upon been asked the importance of these entrepreneurs:

"How much is my salary? I am barely able to transport, and these people afford us junior staff options for lunch. You know we resume early and close late, so it is nice and convenient to have something to eat. From my N18000 {USD50} and extra N2000 {\$5.6} for (internet) data every month, I transport, then I pay for lunch. With 200 Naira (0.56 cents \$), I can eat gala and a bottle of minerals (soft drink). I also buy three serving spoons of (cooked) rice with meat or without meat on good days. These guys are important because fancy restaurants have fixed prices, so we cannot afford to go there to eat. This is where we can afford".

Additionally, to reduce service input costs and increase competitiveness, formal economic entrepreneurs employ informal strategies (Chen, 2016: 156). In Yabacon, this study bares the use of informal agents by Fintech start-ups to access the unbanked and large portions of their Market. While these platforms enable banks to extend formal credit and drive financial inclusion to the under-banked and unbanked in Nigeria (The World Bank Economic Review | Oxford Academic, 2020), the use of local guides⁸ as agents in Fintech serve as the "major way Fintech is spreading" (A Fintech start-up entrepreneur in Yabacon).

3.7 Conclusion: Mapping Yabacon

This chapter provides an analysis of the support to start-ups within Yabacon. Synergies work as seen in any other ecosystem in the world; elements like finance, markets, hubs, entrepreneurial culture to risk-taking and role models are idiosyncratic, while protection from prejudice associated with criminality, and informality appear as unique elements that could be important in ecosystems in sub-Saharan Africa.

⁸ Local guides are explained by the same respondents to mean people that speak the language of the community, dwell amongst the locals and are influential within the community.

Chapter 4 Actions and Inactions of Government

4.1 Introduction

Government support is the bedrock of ecosystems globally; however, this chapter analyzes the seeming presence but apparent absence of government within Yabacon. It is observed that government policies on taxation (amid infrastructural deficiencies) and its direct intervention by setting up hubs to groom start-ups of its play against the existing start-ups and the ecosystem at large. The archaic engineering curriculum, coupled with its refusal to invest in high-risk research constitutes another layer of the huddle to be overcome by start-ups. A trilogy of the not so good, the bad, and the ugly highlights circumstances under which the government's impact (and absence thereof) is felt.

4.2 The not so good: Universities as catalyst?

Public universities are crucial to ecosystems and play a vital role in innovation and talent development. They create a bank of human and idea based resources for entrepreneurs to benefit from (Spigel, 2017: 54). At face value, Yabacon is "home to the prestigious University of Lagos and Yaba College of Technology" (British council, 2020) and other technology colleges. Yabacon appears to be an abode to vibrant young technology graduates.

"schools in Yaba have produced talents in different ways. You see, students in those universities become top software engineers across the country. You see graphic designers and other creative talents from Yabatech. For example, they have gone ahead to become amazing software designers across the country and some work for us too. So, I think talent is one of the benefits that we have seen even though you still have to acquire re-training for technology-based graduates after graduation" (A 28-year-old e-estate start-up entrepreneur).

Conversely, these technology graduates cannot work for start-ups without further training. Universities are therefore, reported as passive actors within the ecosystem as they fail to engage with current technology research and hardly providing ready to hire talents in tandem with the current innovative trends:

"With their current curriculum, they [tertiary institutions] are not relevant to the ecosystem. If they were, we would not have had to undergo re-training or re-train with so much money. What we learned is outdated, and nobody is using them in today's tech-world; our universities need to upgrade really. If they were important to my business in terms of tech talents, I would not be looking to these private guys for talent or innovative ideas and research" (A 36-year-old art software entrepreneur).

Extant literature emphasizes the need for government to provide trained talents through universities and government-owned institutions with requisite technology skills for the start-ups to hire (Spigel 2015:51 or 54). In Nigeria, "it has been observed that the educational curriculum in technology focuses more on the theoretical without a corresponding practical approach. Most employers re-train their employees due to lack of knowledge of basic work ideas or familiarity with the area of study of the employee" (Omotayo et al. ,2020:91). Therefore, only universities that serve as innovation "nodes" are termed "most useful" in the ecosystem literature (Malecki, 2018: 9). This implies that only universities that produce ready to employ talents —while serving as research centres for developing new technologies —are important to ecosystems. Based on the need for re-training university graduates and the absence of an innovative research link between tertiary institutions located in Yabacon, most

respondents described the universities as least important to technology-based innovations and ready to employ talent.

Pitan et al. in their study explained that in Nigeria, "University graduates were not adequately prepared for work regarding skills demand of the labour market, especially with technical skills" (2012: 90). At best, tertiary institutions produce literate individuals with the skeletal knowledge to be built upon by private training centres through re-training. This need for further training is why universities are a missing piece within the tech ecosystem (Naira metrics, 2018). The passive importance of universities to Yabacon reflects in the quality of graduates produced. Malecki stressed that graduates' quality determines an ecosystem's entrepreneurial trajectory and not the mere presence of university faculties (2018: 9).

Consequently, private sector actors have devised a means of re-training university graduates to provide talents with the required skills for start-ups to hire. This training is provided for university graduates as curriculums are developed to suit current trends in technology; Python classes, Web Foundation (Basic HTML / CSS /JavaScript), Web Design, IT Systems and Basic DevOps Engineering Classes, Graphics Design and Advanced Frontend Development. An interesting angle to this training is that start-up entrepreneurs have emerged as talents from within Yabacon's training centres.

"Bincom is a hub for developers; they recruit, headhunt developers, and have a co-work space for developers and all. So, for us, it's easy to always rely on Bincom to source our developers. So, when we want to recruit, we just call on them, and they give us that service. It's just down the road." (A Fintech based start-up entrepreneur).

To support the talents, these centres provide discounted fees and loan programs, where the prospective talent receives credit until they find employment. These are not available options within universities and government institutions. Furthermore, while extant literature indicates partnerships between universities and private firms, this study revealed the inhibition posed by bureaucratic requirements within universities, to attempts directed at partnership with private firms in Yabacon. A start-up explained that they had been told upon several attempts that an adjustment to the curriculum is at the prerogative of the government and not at the university level. This study could, however, not reach a university spokesperson as efforts proved abortive.

Finally, universities also stimulate entrepreneurial mind-sets in students (Spigel, 2017: 54). In Yabacon, this is limited to majors within the business and marketing based faculties and not extended to technology. Therefore, in responding to questions posed by this research, some entrepreneurs in Yabacon expanded the talent scope according to their firm's diverse entrepreneurial needs. Start-ups requiring more non-tech skills like marketers view universities as a source for talents in marketing.

4.3 The bad: Government as a start-up

Mazzarol (2014) presented an entrepreneurial ecosystem framework under which 'Government' is at the base. This framework sets the government at heart and, at the same time, the background of ecosystem formation. Indeed, ecosystems are structurally government-supported, and entrepreneurs led. Still, the lack of engagement with the ecosystem's core needs leads to the imminent failure for government policies attempted at ecosystems support (Feld, 2012: 25). While the Lagos State government in 2013 granted Main One Cable (a telecommunication company) the right to lay fibre optic for internet connectivity in Yaba (in exchange for a subsidized cost of securing building rights license), its support is limited to date. An official of the federal government involved with implementing the NIIEVE (2019) explained:

"Honestly, apart from the fibre optics, all we have done for this Yaba guys is to compete with them. This has not been intentional, I must add, but it is the reality. The private sector came up with hubs; we set up hubs, they started to incubate Start-ups, we started 24 hours start-up incubation, where we presented monetary prices after a few minutes pitch. This is not how things are done. Whatever the hub did, we matched with a government-funded project rather than support them."

Consequently, while the ecosystem literature stipulates governments role to fund private sector incubation and support programs (Spigel, 2015:51), the government in Nigeria decided to set up its incubator, its start-up scene and as described by one of the respondents:

"The government became a competition rather than a form of support, and some of us begin to wonder about our fate when our government decided to become a start-up itself."

The sentiment was the same throughout the respondents, with 80% describing the government as a least supportive element. Ecosystem mainstream literature expounds the government's support for organically built ecosystems (Stam and Spigel 2016:6). However, the government of Nigeria decided to directly intervene and take over control of an organically nurtured ecosystem by establishing hubs and accelerators of its own:

"So, all government had was money; they didn't have the know-how to run a hub. It could get the funding; it could do the grounds but could not manage a hub, so it failed. It was such a bad idea for the government to try to do; it was the government trying to do what they know little about. This was its attempt at directly intervening in the cluster instead of supporting the hubs and accelerators. Still, we failed because we did what was not needed to be done" (An official of the Federal Government involved with ecosystem building in the technology sector).

Funding ecosystems and entrepreneurs' activities while creating a conducive financial environment should be one of the government's responsibilities (Spigel, 2015: 51). The government marked some funding towards technology-based start-ups during the Covid-19 pandemic as an emergency relief fund through Nigeria's Central bank. However, as it would appear, the implementation may not be one of the governments' strong bones. Start-ups in Yabacon applied for this funding to scale up their businesses amid the crisis, through innovations targeted at cushioning the pandemic's impact on the populace. One such was to launch an application that collects data on clusters of symptomatic cases for onward transmission to the disease control department. Upon his application, for N10 million (€22000), the start-up was informed over the phone by a government agency that he could only access N1.5M (€2400); and eventually was not given.

Ecosystems consist of various elements that require government support across the board. These include but are not limited to market support and supporting a culture that inspires a progressive customer base. Therefore, bolstering some elements without the other is where "governments go wrong" (Isenberg, 2010:3). In Yabacon, the government has supported the internet connection project without much support to the market or extending the "buy made in Nigeria mantra" to the ecosystem. This study found corrupt practices as the reason behind the averse stands by public agents to patronize made in Nigeria technology from the start-ups in Yabacon.

4.4 The ugly: policies as inhibitions

A recent study by Okoye and Igbinovia explains that taxation in Nigeria is a burden to start-ups due to the poor infrastructure that militate against the efficient flow of business. The problem of electricity and bad roads among others are said to consume a large part of start-ups profit—in a bid to provide these amenities for themselves—while the rest is taxed by the government (2017). These infrastructural challenges occasioned by governments inaction

presents tax as a burden to start-ups. It is within the confines of these infrastructural challenges that arguments on tax as a burden in this chapter is based.

In Nigeria, entrepreneurs are in constant distress with policies and institutions which pose legal, economic, and socio-cultural challenges (Eniola,2020: 19). Stam and Spigel describe the government's role as a feeder that creates a conducive environment for entrepreneurs to thrive (2016:5). Narasaiah explained that "it is the prime responsibility of governments to create a policy framework that enables businesses to apply technology for competitive advantage and the well-being of the public" (1999: 356). In Nigeria, the government, through the NITDA, established the Nigeria ICT Innovation and Entrepreneurship Vision (NIEV, 2019) targeted at supporting the ecosystem(NIEV, 2019: 2). However, this has not profited much due to policy inhibitions and infrastructural limitations. Therefore, Extending the challenges to business occasioned by the government's inaction is the uncertainties that trail investments. This study revealed a heap of government omission in the ecosystem, starting with investment issues. The policy frameworks reveal a disconnect between the intent of NIEV and currency volatility to which start-ups are exposed. Little wonder the NIEV records a mismatch between government intervention and ecosystem needs (NIEV, 2019: 1). In this study, an official of the NITDA narrated the negative consequences (to start-ups and investors) of currency volatility and fluctuations caused by capital controls in Nigeria, which makes it difficult for investors to repatriate capital.

One primary expectation of the government is to eliminate institutional barriers and create "tax benefits," as indicated by Spigel (2015: 51). In Nigeria, a few government Policies target tax holidays to boost technology start-ups' performance within the country. In June 2018, Nigeria's Vice President at a launch of a hub in Lagos, Nigeria, lauded the efforts of the tech-based start-ups in solving some challenges within the country and, drawing from this, declared that tech start-ups like other small businesses within the country would begin to enjoy tax holidays (Fund et al., 2018). While start-ups in Nigeria are generally unaware of these tax holidays, those within Yabacon have the advantage of knowing these provisions even though access has proven herculean. Therefore, the overall challenge to these policies are implementation and incoherence (Omotayo et al., 2020:91)

The presence of different competing government agendas could create entrepreneurial frictions with regards to policy frameworks targeted at regulatory dispensations (Spigel, 2016: 148). The contentions place start-ups at the receiving end of the apparent diversity of tax regimes. Though Start-ups in Yabacon recognize that taxes are statutory they, however, expressed disappointment at the number of taxes that they are required to pay. With the local governments, the state and federal government taxes, they face huge burdens. Though the Federal Government has earmarked tax exemptions from withholding tax, the local and state taxes serve a counterproductive role, as the multiple streams of taxes defeat the federal tax holidays' aim. Therefore, multiple taxation and incoherence stand as colossal challenges to start-ups in Yabacon. An official of the federal government involved with ecosystem building in the technology sector indicated:

"The real problem is policy incoherence, so at one level, the Federal Government is having one policy fully implemented, and the state government is running something that is at variance with the Federal Government. The constitution is pretty clear on what we call the exclusive list, an exclusive list of items like value-added tax, companies' registration that is exclusively for the Federal Government. So, what happens is that sometimes the state couch different names to capture some of the Federal Government taxes. They give it all kinds of names; you know, like Lagos once had the sales tax, which is essentially VAT. Even though the Federal Government says start-up should not pay VAT depending on their turnover, the State Government still collects VAT under another guise. Those are the practical areas where you identify inconsistency and multiplicity, and sadly the start-ups suffer".

Although tax paying and remittance are civic obligations of entrepreneurs in a country, duplication and increment are factors that impact the cost of input for businesses In sub-Saharan African countries(Omotayo et al., 2020:91). In table 3 below, of the 30 start-ups surveyed, over 80 % of them identified taxation as a burden to their business, and the need to employ coping strategies.

Table 3.1
Table showing tax as a burden to start-ups in Yabacon

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	80.0	80.0	80.0
	No	4	13.3	13.3	93.3
	Not sure	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

Source: Fieldwork 2020

Most tax regimes appear unclear to start-ups; this goes for the tax holidays and their length of application (Ekwealor, 2017). In Yabacon, it would appear that some start-ups do not pay taxes because while been aware of the tax holidays, they are not aware of the valid duration of these holidays; the unfamiliarity is due to the passive tax system operated within the country (Omotayo et al., 2020:90).

4.5 Insignificant investment in research

The state's entrepreneurial role draws from Mazzucatos' understanding that ,*"The only way to make growth 'fairer' is for policymakers to have a broader understanding of the role played by the state in the fundamental risk-taking needed for innovation"* (2011:1). With the multiple and high taxation rates reported by Yabacon start-ups, this study underscores the state's position in research, through high-risk investments. The entrepreneurial state literature indicates that Higher taxes are meant to be a reward to the government from growth occasioned by its risky investment in research (Mazzucato, 2011:138). However, state agents' revealed that Yabacon start-ups could not compare the government's investment to the hefty/multiple taxations. This unjustified reward system does not mean a total lack of effort, as in some instances with prize money. However, with regards to Mazzucato's depth, the Nigerian state has not led innovative breakthroughs to contribute to the growth of the economy. Mazzucato concludes that there are certain investments impossible to accomplish without the state's investments. Until a state is ready to make these risky long term financial commitments, it cannot be entrepreneurial. A look at the quick fix-short term model of the Nigerian government was highlighted by a government official when asked about investments :

"We haven't spent so much, the government has funded start-up competitions, and prizes, but frankly nothing major and sustainable in research."

The state plays an essential entrepreneurial role when it seeks and commissions further developments by overseeing innovations' commercialization. (Mazzucato, 2011: 5). In highlighting the state as a start-up in 4.3, its efforts induced unhealthy competition for private-sector start-ups rather than superintending commercialization of new ideas. Noting the need for entrepreneurial state effort in funding start-ups, Mazzucato cites the US states'

investment in the algorithm that led to Google's success. Conversely, in Yabacon, the respondents highlight the lack of state commitment in funding grounded and sustainable technology research.

Recognizing the role of private-sector start-ups in driving innovative dynamism, Mazzucato stressed that an entrepreneurial state must do more than addressing market failures but create new markets for private sector actors. This action implies the need for state agencies' diplomatic efforts to identify markets, support new paths, and adjust rules to promote them. However, the absence of an innovation bill to underline market-driven efforts by the state leaves the Nigerian government in limbo.

A much worse finding is the absence of state universities in leading knowledge spread in Yabacon. The entrepreneurial state literature and ecosystem theory indicate the state networks that cause knowledge to spread—being entrepreneurial means creating a knowledge economy (Mazzucato, 2013). The absence of policies to promote technology-based research and murky linkages of government research institutes with Yabacon is problematized in this study.

4.6 conclusion

For support to start-ups, the Nigerian government is generally passive, inactive in developing trend fit curriculums and is found competing with the start-ups and hubs. These are compounded by the various hurdles associated with its tax regimes, the lack of basic infrastructure and the government's failure to undertake high-risk investment in research. In Yabacon, private training centres intervene to provide talents with current technology-based skills thereby replacing universities within the ecosystem.

Chapter 5 Self-help: Heaven helps those who help themselves?

5.1 Introduction

This chapter considers further unanticipated elements that exist in Yabacon. Policy incoherence and multiplicity of tax compels a measure of confusion on start-up entrepreneurs in developing economies (Mevedev and Oviedo, 2015: 416). This is due to the infrastructural challenges occasioned by governments inaction which cost start-ups to spend more in inputs for basic amenities and infrastructure that the government fail to provide. With this, the tax becomes a burden to start-ups. In Yabacon, to diffuse the confusion, start-ups find themselves picking and choosing what taxes to pay; they undertake informal contracts with employees, they proliferate new firms, and they do not remit the number of social insurance expected by government regulations. According to Gomez and Franssen, "The argument is not that firms can freely choose their levels of formality. To the contrary: their choice is conditioned by the institutional system within which they operate" (2020: 192). It is within these confines that tax and other regulatory taxes are treated as burdens to start-ups.

5.2 Informal practices as a coping strategy

Start-ups in Yabacon express a lack of trust in the government's handling of tax remittances and the infrastructural challenges within the country. This discourages them from contributing to tax and especially the long list of taxes. Start-ups explained that the government devices various means to tax them without fulfilling its corresponding infrastructural responsibilities. That they provide these infrastructures for themselves, serves as justification for non-payment of tax.

"The taxes are not too expensive as individual taxes truthfully speaking, the only thing is that when you put all of them together, it is a lot, and it is also difficult to understand why I am paying so much to the government even though I cannot see what they use my money for"

In the table below, 100% of the 30 Start-ups show compliance with regulations to register with Nigeria's Corporate Affairs Commission⁹. Nearly three-quarters of all owners have their outfits registered with the Federal Inland Revenue Service (FIRS)¹⁰. However, many start-ups fall spectacularly short of social insurance; not up to one-quarter of all start-up interviewed pay required attention to pension administration, health insurance, and housing of its staff. In this study, 80% of start-ups considered taxation a burden to their business in Nigeria.

The ecosystem literature underscores the interconnectedness of elements within the ecosystem to foster a joint entrepreneurial mission (Spigel,2016:148). Consequently, while Yabacon supports start-ups to aid their growth, start-ups employ survival and sustainability strategies. This is exacerbated within informal economic settings that experience poor education, infrastructural deficiencies, inadequate government support, and poor market conditions. Tax regulations "and enforcement stands out as the most frequently studied determinants of informal economic activity" (Elgin and Erturk, 2019: 228), with social security for a workforce highlighted by Meghir et al. (2015). All things being equal, an increment in tax

⁹ The governments agency saddled with formal business registrations.

¹⁰ The governments agency saddled with taxation

burdens serves as an incentive for informality (Ogbuabgor and Malaolu,2013: 90). Accordingly, in Yabacon, the shortage of compliance is not limited to taxation but extends to labour regulations as well.

Table 4.1
Start-ups according to registration and social protection

Background	Number	Proportion (%)
Gender		
Male	29	96.7
Female	1	3.3
Education		
Polytechnic / University	20	66.7
Postgraduate	10	33.3
Entrepreneurship in University Curricular	13	43.3
Business registration		
Corporate Affairs Commission	30	100.0
Federal Inland Revenue Service	21	70.0
Pension Administration	7	23.3
Health insurance agency	7	23.3
Social protection payments/contributions		
Pension	7	23.3
Health insurance	6	20.0
Housing scheme	2	6.7
Other	5	16.7

Source: Fieldwork, August 2020.

The Nigerian labour law is comprehensive and emerges from a composition of received English law, case law, the Nigerian labour legislation and international laws (Nwokpoku et al., 2018: 49). While these exist to ensure workers welfare, it translates to a burden for entrepreneurs in developing economies because they have to provide amenities that governments fail to afford them; the use of generators, the cost of transportation on bad roads, the lack of security and unstable market conditions among others.

To escape the impact of regulatory obligations surrounding employment, formal entrepreneurs employ informal labour contracts with employees to avoid obligatory disbursements such as social security and other payments (Mevedev and Oviedo, 2015: 416). Consequently, In Yabacon start-ups explained their current inability to contribute to employees' social insurance benefits as expected by the Nigerian labour law 2004. Though ,the Pension Reform Act of 2004 stipulates that the social security contribution will be two-sided; 8 % employee contribution and 12 % from the employers (Section 5), some start-ups deduct and remit the workers' contributions to the government but cannot meet their contributory obligation as employers. A 28-year-old e-estate start-up entrepreneur explained :

"do you want my business to go down? You know how Naija is. Moreover, the taxes are too much. We pay local government tax, state tax, federal government tax, etc. and staff prefers and understand that we have to survive as it is from this business that we all feed. So, we pay the ones that are necessary and realistic".

Studies of developing countries have shown that " payroll taxes and social security contributions are avoided by mutual consent of the employer and employee". Chen explains that employees prefer to receive more generous take-home pay instead of employer contributions to social security (Chen, 2016:157). In Yabacon, employees and start-up entrepreneurs often agree to reduce social security obligations, especially health benefits insurance (humorously indicating that they are covered by the blood of Jesus), in exchange for an increased take-home pay. While these might be indicative of power imbalance between both parties,

employees did not express dissatisfaction during the interviews. A 35-year-old software entrepreneur noted:

"So, we pay the money to staff because they prefer it. Most of them say they hardly fall sick, and every year we have to make this contribution, which does not benefit them. It was meaningless, so the staff insisted that we pay them the funds rather than pay it as social insurance. With that, they take more money home."

Accordingly, existing literature on developing countries extends the informality scope to include "informal workers of the formal sector" (Kraemer et al. ,31:2016). They reveal that "employers often choose to retain a small, core, regular workforce and hire other workers on an informal basis to avoid payroll taxes and employer's contributions to social security or pensions" (Chen, 2016:157). In Yabacon, social security is limited to skilled staff, while junior cadre staff (administrative, logistics and customer care) engage in an informal contract arrangement without social insurance. They do not expect any form of benefit as they barely receive the minimum wage of N18,000 per month (50 USD). In developing countries, Chen explains that this choice is "the case when social security systems are managed poorly—or their terms and conditions are not transparent or well understood (2016:157). Noncompliance in Yabacon with obligations such as housing contribution is also due to the lack of trust in administering the funds by the government and vast experience of inaccessibility by start-up employees.

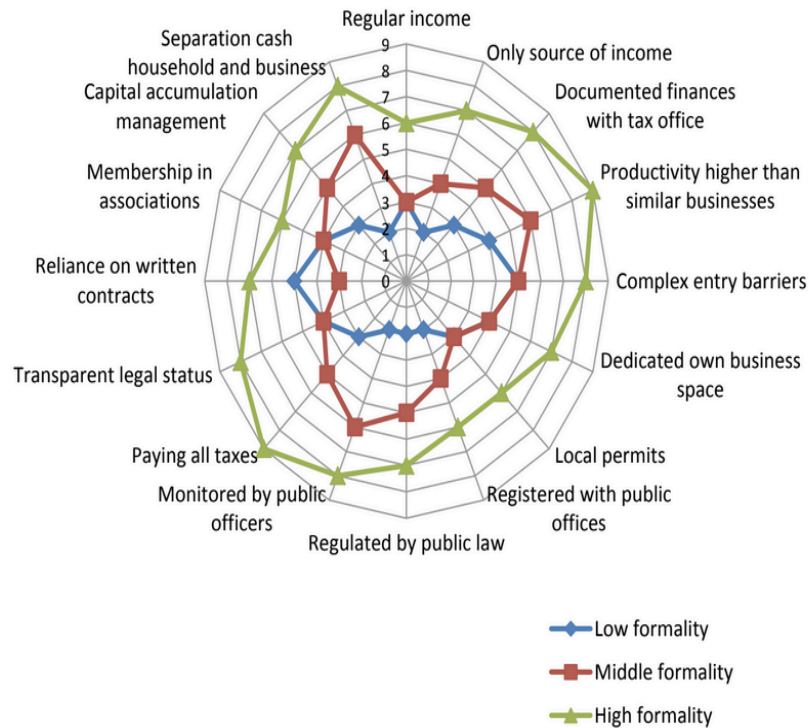
Moreover, formally registered firms operate somewhere on the 'informality continuum between complying with some rules but not with others (Medvedev and Oviedo, 2016: 417). In the figure 5.1 , Gomez and Fransen develop a multilevel framework that employs a scorecard of between 0-10 in which 10 signifies the highest level of compliance with formality. It provides for a middle group which represents a hybrid situation between formality and informality. This spread of hybridity illustrates the coping strategy for start-ups in Yabacon. The ICT sector remains formal in Nigeria; however, there is a mixture of compliance between formal and informal sector practices by the software start-ups to indicate a hybrid situation as depicted in Gomez and Fransen's multilevel framework. This is reflected in employment types, tax evasion, forms of business registration and adherence to social security for employees as indicated in figure 5.1.

In Yabacon, a large portion of surveyed firms obeys some rules and not others. However, relatively high compliance with the remittance of personal income tax- which is run on a PAYE¹¹ model of remittance- was across the board because it is tax deducted from formal employees' salaries and remitted by the start-ups to the government.

In developing economies, "economic actors tend to have a multi-faceted relationship with the state rather than operating in a dichotomous world of zero or full compliance" (Medvedev and Oviedo, 2015: 417). Among start-ups in Yabacon, those affiliated with hubs and those with foreign investment interest record relatively higher compliance. This is because affiliation with investors and hubs drives higher compliance.

¹¹ The Payee is the abbreviation for pay as you earn

Figure 5.1
Multilevel framework of formality



Source: Gomez and Fransen 2020.

It follows that, entrepreneurs tend to comply with tax regulations for guaranteed access to traditional financing (Medvedev and Oviedo, 2015: 422). In Yabacon, many independent start-ups firms comply with personal income tax alone while ignoring others. In contrast, those start-ups affiliated with hubs, accelerators, and formal institutions comply with more regulatory obligations for investment reasons.

"Honestly, not all of us are the same. You also know that banks will not deal with you if your documents are not complete, and hubs will not refer you without their due diligence. See, following the rule is the rule. But it is not all that they ask for; they ask for the main ones. They know that it is not all we can afford now" (A Fintech start-up entrepreneur)

This study revealed that while some firms connected to international investors and donors expressed compliance as a requirement for dealing with foreign actors within the ecosystem to access more funding, others that declared foreign investors irrelevant for their current business trajectory reported less compliance. One of the firm owners who had been doing business in Yabacon for five years noted:

"I do not need foreign investors; for now, you know they ask for too many paperwork. My local market is currently sufficient because I am solving everyday problems. So, I do not have to worry about all these compliance issues."

Added to hybridity is the filing of annual returns at the corporate affairs commission. Compliance is recorded only when it becomes an absolute precondition to accessing funding or business deals. Otherwise, start-ups go years without filing annual returns. Another reason that may see start-ups break the informality chain is adding a co-founder to the company documents or adjusting company information if they are bidding for investments. This is

because, at the point of making adjustments to any registration document, proof of annual returns is required.

Equally, the proliferation of businesses serves as a coping mechanism for start-ups in Yabacon. The economic climes in developing countries pose a regulatory risk to entrepreneurs, and they, therefore, engage in counter-intuitive means to stay afloat. In this instance, entrepreneurs indulge in the proliferation of other businesses to mitigate the risk. (Lingelbach, De La Vina, and Asel, 2011:3; Igwe et al. 2018:187). Most notably, rather than reinvesting the majority of the profit made into the same business, new companies are funded (Lingelbach, De La Vina, and Asel, 2011:6). This study found that some entrepreneurs in Yabacon proliferate diverse outside the cluster to mitigate the risk posed by the tax regulatory frameworks in Nigeria. For instance, with the view to remaining undetected and to keep enjoying tax holidays meant for start-ups with a set annual turnover limit, a 36-year-old software developer with multiple streams start-ups explained:

"Provided I do not exceed a certain amount at least for VAT, my business enjoys more certainty in the area of tax and reduces the number of taxes I have to pay. So, I have established a few other non-ICT businesses that I make efficient with knowledge of technology. The laws surrounding ICT are so unstable, and more so is the tax law. Look, it is safer to run multiple start-ups than concentrate on one alone in this country"

Some start-ups in Yabacon register as business names; this ensures that they are exempted from the long list of taxes stated above. However, to access larger clients and foreign investors, start-ups explained that they had to upgrade their registrations to limited liability companies; at this point, the informality chain is temporarily broken.

5.3 Nature of software Start-ups Motivation

Preceding coping mechanisms, the question of start-up motivation amid the challenges to entry within Nigeria's entrepreneurial scene becomes an important question to answer. Notwithstanding the challenges to entry, start-ups still venture into an activity entrenched in murky waters. This is due to the need to solve problems, the craving for wealth and economic independence that serve as push factors to start-ups in Yabacon.

Problem-solving by turning challenges to opportunities is a motivation for start-ups in Yabacon. Individual motivation is foundational to entrepreneurship studies in that it explains (at least in part) how entrepreneurs persist in creating and pursuing opportunities (Shepherd 2019:15). The start-ups employ their problem-solving abilities by innovating solutions under the platform of new ventures. This process is termed Entrepreneurial Self-efficacy by Eniola (2020:20). Reoccurring for start-ups in Yabacon, is simply the desire to solve social problems. The GEM national expert survey report indices indicate that over 15% of Nigeria's entrepreneurial activities are based on innovation, targeted to solve problems (Zouria and Udanoh, 2017:376). For instance, in Yabacon, unemployment challenges led a 31-year-old start-up entrepreneur to create a software application that finds and matches employers and employees. Another start-up developed a software for blood bank synthesis to reduce the rate at which deaths occur due to the delays in blood delivery occasioned by traffic in Lagos (Co-Creation Hub, 2020). The challenges in Nigeria allow for the rapid commercialization of innovation and increase investors' attractiveness (Deloitte, 2018: 24). A striking feature of start-ups in Yabacon is that design is often focused on problem-solving, creating local market opportunities, low-cost alternatives and extending to a few foreign markets. This type of resource-constrained led designs and products are primarily termed frugal innovation for targeting customers in resource-constrained contexts (Winterhalter et al., 2017: 2 citing Zeschky et al. 2014).

Yabacon start-ups indicated developing unique dispositions to problem-solving amid competing ideas as a strategy for competition. Added to this are the first-mover advantage and relative originality of products. The GEM national expert survey report provided that the Nigerian economy had 19.86% of people in total early-stage entrepreneurial activity. This number indicates that their products were new (they had not been offered elsewhere). There were few or no other businesses with similar products (Zouria and Udanoh, 2017:376 citing GEM, 2016). In Yabacon, the availability of diverse opportunities afforded through challenges in Nigeria is in line with the pervasiveness of options due to failures in developing economies' socio-political landscape — as argued by Lingelbach et al. in developing countries (2005: 3). It is a common belief within the ecosystem that originality over copying will allow entrepreneurs to carve successful niches for themselves.

"Fintech is almost the most saturated tech-based business in Nigeria, and within the ecosystem, we are many of us. However, I decided to be original, where I find other Fintech asking for collateral, I employ what we call social reputation score. In this, we rely on social pressure to ensure payment is remitted back to the banks that use our technology. It has been very effective, you know, we use social pressure rather than collateral due to the challenges faced by banks" (A Fintech start-up entrepreneur).

This uniqueness, suggests, the desire to make wealth as a motivation for growth-minded entrepreneurs (Hessels et al., 2008: 230 citing the 2006 GEM adult). Yabacon start-ups indicated the need to move above "not starving" to creating wealth for themselves. One of the software entrepreneurs explained.

"It is not about feeding myself or avoiding starvation; if that were the case, I would have remained in my previous employment. Honestly, it is about making so much wealth that my generations to come will only work because they do not want to sit at home."

Given the above, growth-oriented "entrepreneurs are self-employed by choice, to exploit some perceived opportunity" (Wim Naude, 2008: 3). This reflects the desire for independent and create jobs. Most of the respondents have had jobs before setting up their start-ups but becoming entrepreneurs was by an active choice made by these start-ups to exploit opportunities. The above elements indicate a dynamic growth mindedness of the start-up entrepreneurs in line with the indicators of the GEM survey as employed by Naude; however, the level of informality within the ecosystem is indicative of evasive entrepreneurship, which is in line with Naude's definition (ibid) as; those that employ strategies to overcome the burdens of tax regulations.

5.4 Conclusion

This chapter explores informality as a critical element for start-ups within the ecosystem while highlighting the motivation of start-ups. It takes an exploratory analysis of the use of tax and social security evasion, which are preconditioned choices, owing to the weak institutions and infrastructures in Nigeria. Notable is that start-ups are also spurred to entrepreneurship by wealth creation, the need for economic independence, expressed through frugal innovation.

Chapter 6 Conclusion

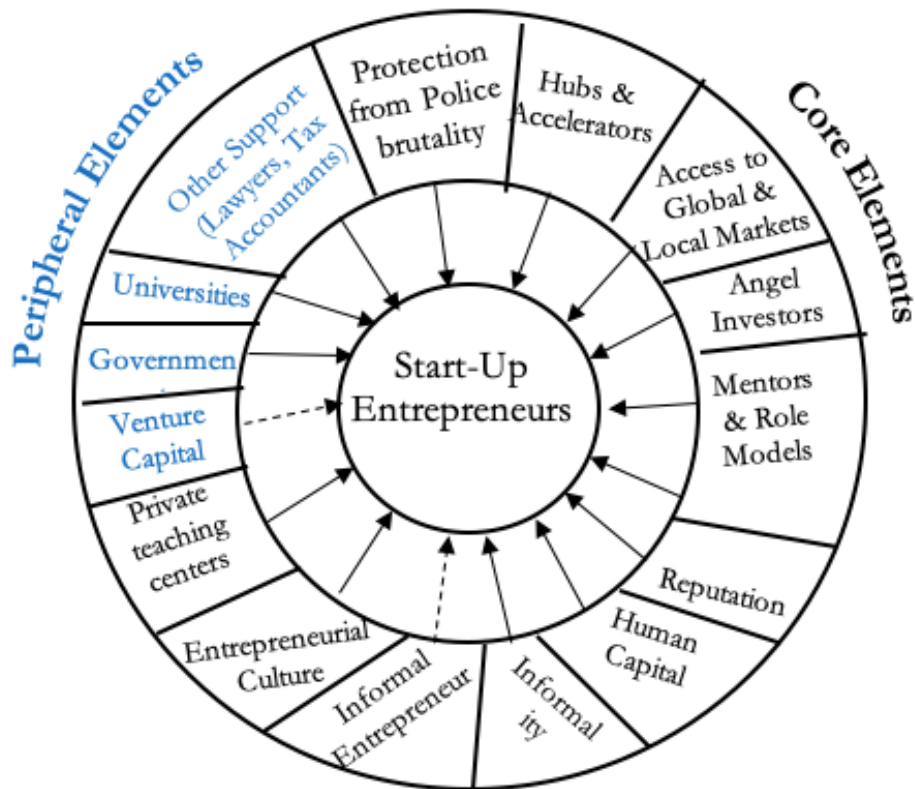
To answer the research question on the ways in which *the Yabacon software ecosystem support start-ups in Nigeria*, this paper draws on a centre point between the neoclassical and heterodox thinking that the private sector and government are epicentres for entrepreneurial endeavours, respectively. It expands the discussion on state responsibilities by including research roles of entrepreneurial states. Therefore, the study finds that, while the onetime investment -into fibre optic cable network to provide speedy internet services to the start-ups in Yabacon might be indicative of state support, the testimony of what has followed suggests otherwise. The tax incoherence and multiplicity; unclear tax regimes and the absence of universities as research and talent banks creates an avenue for private sector elements to deepen the ecosystem theory on support to start-ups in Nigeria. This is done by expanding the scope of the meso level “self-help”; hubs and private sector provide training and access to infrastructure, protection from police brutality and building the technology crime free reputation as opposed to cybercrime antecedents in Nigeria. This self-help also includes informal practices as a support mechanism to withstand the counter-productive nature of government support (or lack thereof) to start-ups. Private-sector support extends the classical elements from the extant literature.

Consequently, this study finds that government investment is paper-based and reactive at best -for a "Silicon Valley wannabe"-with regards to tangible support for Yabacon. This does not deny the contributions of policy to digitization ,upon the implementation of which, led to the introduction of telecommunication and hardware assembling businesses in Nigeria. However, for software start-ups, evidence (both primary and secondary) reveal a poor state of government support.

In summarizing the support provided by Yabacon to start-ups, as explained in this paper, an adaptation of Mazzarol’s framework of the entrepreneurial ecosystem is employed. In this adaptation, Elements are defined as core (most supportive) and Peripheral (least supportive) based on the level of support revealed by start-ups through the distributed questionnaires and in-depth interviews. The support is either direct or indirect, represented by straight and dotted arrows respectively as contained in figure 6 below.

In Yabacon, the gaps created by the formal university institutions and the government, in general, gives room for informal private sector-led interventions. This indicates that as formal institutions of government neglect their responsibilities, they create a void that continually expands the level of informality within the ecosystem. The tension between formality and informality is central to determining the type of support start-ups receive and how often they employ self-help mechanisms. This leads to the production of evasive and non-evasive entrepreneurship at different points in time of the start-up's lifespan. It is therefore notable that none of the start-ups are completely evasive or non-evasive. The measure of informality within this ecosystem is based on the continued absence of the government in providing the needed infrastructure. This, therefore, calls for a rethink in the assumption that government as an ecosystem element is a given, this is because, in Sub-Saharan Africa, the infrastructural deficiencies and governments inactions are one of the significant reasons for categorizing this region as “developing”. Due consideration must therefore be given to these special conditions when ecosystems are engaged in developing economies of sub-Saharan Africa.

Figure 6.1
Ecosystem Framework for Yabacon



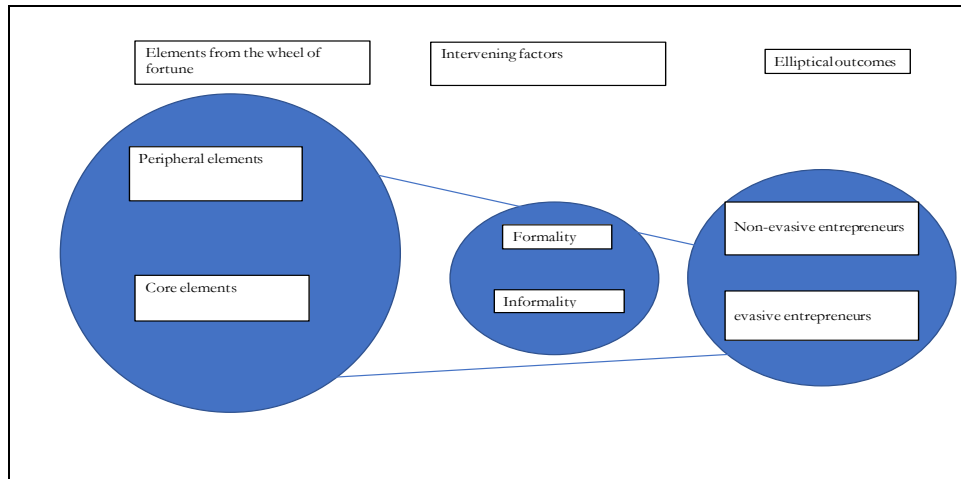
Source: Fieldwork, 2020.- Adapted from Mazzarol 2014

7.1 below, presents an Elliptical framework to give a pictorial illustration of the shadow cast by the intervening factors (formality and informality) as start-ups try to maximize factors that enable them to function within the ecosystem. At some point, some even exit the ecosystem altogether into other socio-economic ventures by proliferating start-ups, fluctuating between obedience to policies depending on affiliation and target market, and government shifting between its function as policy regulator to start-up and hub owners. The wheel in figure 4 operates through these two intervening factors of formality and informality, which result in the evasive and non-evasive entrepreneurship. This, therefore, reflects that support within the ecosystem is continually moving between formality to informality.

As can be seen, the anti-support and counterproductivity of the government's interventions through its regulations, taxation, universities and other misguided policies culminate into a burden on start-ups within the ecosystem. These, creates opportunities for private sector-led support to start-ups, through retraining by private software centres, private sector-led security campaigns and the adoption of informal practices by start-ups. While informality

indicates a beneficial pattern for start-ups, it might also be indicative of power relations between the start-ups and employees with regards to the non-remittance of social security benefits.

Figure 7.2
Elliptical illustration of informal-formal interactions in the Yabacon



Source: Fieldwork, 2020.

The multilevel framework of Gomez and Fransen speaks directly to Chen (2012)’s critique of ‘simple’ formalisation policies that do not provide informal actors with the benefits of the formal economy (2020:193). In this study, however, the referral to the multilevel framework highlights the simplistic formalisation approaches that deny formal actors the benefits of informal sector practices in institutionally deficient economic climates of Sub-Saharan Africa. In the Yabacon, informality is a socially acceptable strategy for start-ups to spring up and survive at least for a while. The leeway afforded by informality to formally registered start-ups in Yabacon sees the proliferation of other start-ups to avoid the government's tax radii.

This study recommends the establishment of a National innovation bill to lead the entrepreneurial research endeavours of the Nigerian state and other Sub-Saharan African economies. More specific to the software ecosystems in Nigeria, is the need for infrastructural upgrades and policies that prevent market and currency volatilities. The Nigerian state should foster public private partnerships with training centers, enterprises and universities to bolster concrete value creation and skills acquisition.

Finally, it is my hope that this study spurs further work in this area. Consequently, a study can be undertaken into migration trends and the rate of start-up entry and exits from ecosystems in SSA. In addition, the maturity level of ecosystems in Sub-Saharan Africa could also be empirically investigated to measure the influence of informality on ecosystem development and decline. Lastly, a study could be launched into the sustainability impact of global north investments into frugal innovation in SSA ecosystems.

Appendices

Appendix 1.1
Table of Respondents

S/N	Respondent category	Location	How?	Data collection type	Period
1.	Software start-up	Hubert Macaulay way	Google meets and WhatsApp	Semi- structured interviews	July 29 th
2.	30-Tech start ups	Hubert Macaulay way, Anthony way, Sabo Yaba, Montgomery road and Alagomeji Yaba	Email	Questionnaire	August 2020-September 2020
3.	Local Food vendor	Montgomery road	WhatsApp	Semi- structured interview	August 23 rd
4.	Gala, egg-rolls and soft drinks vendor	Sabo Yaba	WhatsApp	Semi- structured interview	August 2 rd
5.	Rice and Amala vendor	Montgomery road	WhatsApp	Semi- structured interview	August 20 th
6.	Customer service	Hubert Macaulay way	WhatsApp	Semi- structured interview	August 11 th
7.	Administration assistant	Anthony way	WhatsApp	Semi- structured interview	August 12 th
8.	Logistics assistant	Sabo Yaba	WhatsApp	Semi- structured interview	September 2 nd
9.	Marketing assistant	Montgomery road	WhatsApp	Semi- structured interview	August 13 th
10.	Tax consultant	Lagos, Nigeria	WhatsApp	Semi- structured interview	August 20 th
11.	NITDA	Abuja, Nigeria	Google meets	Semi- structured interview	August 26 th
12.	NITDA	Abuja Nigeria	Google meets and WhatsApp	Semi- structured interview	July 1 st July 13 th August 20 th
13.	Programmes Associate, Acceleration	CcHUB	Google meets	Semi- structured interview	3 rd August
14.	Accelerator, Program Manager	CcHUB	Google meets	Semi- structured interview	3 rd August
15.	Head of Research and Policy	Fate Foundation	Google meets and WhatsApp	Semi- structured interview	31 st July
16.	Project Manager, Digital Security	CcHUB	Google meets	Semi- structured interview	July 15 th
17.	Founder	Future Africa Fund	Google meets and WhatsApp	Semi- structured interview	July 28 th July 23 rd
18.	Co-founder	Budgit	WhatsApp Google meets	Semi- structured interview	August 10 th August 14 th
19.	Founder	Network of Incubators &	WhatsApp	Semi- structured interview	August 10 th

		Innovators in Nigeria			
20.	Software start-up CEO	Hubert Macaulay way	WhatsApp	Semi- structured interview	31 st July
21.	Software start-up CEO	Anthony	WhatsApp	Semi- structured interview	August 14 th
22.	Software start-up CEO	Sabo Yaba	WhatsApp	Semi- structured interview	August 4 th
23.	Software start-up CEO	Sabo Yaba	Google meets	Semi- structured interview	July 18 th
24.	Software start-up CEO	Montgomery road	Google meets	Semi- structured interview	August 6 th
25.	Software start-up CEO	Montgomery road	WhatsApp	Semi- structured interview	August 5 th
26.	Software start-up CEO	Alagomeji Yaba	WhatsApp	Semi- structured interview	August 4 th
27.	Software start-up CEO	Hubert Macaulay way	WhatsApp	Semi- structured interview	August 1 st

Appendix 2. 2
Table of Taxes

S/N	Federal Tax	State Tax	Local government Tax
	Value added tax (5% imposed on each goods and products)	Personal Income tax (Between 7% to 24% of income)	Public convenience, sewage and refuse disposal fees.
	Withholding tax	Business premises Tax	Signboard and Advertisement permit fees.
	Company income tax (30% of taxable income)	Development Levy	Vehicle radio license
	Education Tax (2% of start-ups assessable income)	Withholding tax (5%-10%)	Radio and television license fees (other than radio and television transmitter)
	Information technology tax (1% of annual profit) ¹²		Markets taxes and levies excluding any market where State finance is involved
	Pension contribution		Shops and Kiosks rates
	Annual Returns (Corporate Affairs commission)		

Source: Adapted from the Lagos Internal Revenue Service

¹² <http://starklegalng.com/index.php/2019/10/19/a-business-owners-legal-guide-to-tech-startups-in-nigeria/>

Appendix 3. 3
Questionnaire for start-ups in Yabacon

This questionnaire seeks data on the entrepreneurial ecosystem in Yaba, Lagos Nigeria. This data is for use in undertaking a research as final fulfilment of a Masters of Arts in Development. None of the information received will be used for purposes other than as is stated.

* Required

1. Sex/gender of respondent *

- a. Female
- b. Male
- c. Prefer not to say
- d. Other:

2. Office Address *

Your answer

3. Age as at last birthday *

Your answer

4. Educational attainment *

- a. Up to Senior secondary
- b. College of education certification
- c. Polytechnic/University degree
- d. Postgraduate
- e. other (please specify)
- f. Other:

5. Was entrepreneurship a part of your school's curriculum *

- a. Yes, it was
- b. No, it was not
- c. Yes, it was optional
- d. Yes, it was compulsory
- e. Other:

6. Within how many years of graduation did you establish your start-up? *

Your answer

7. What is the specific focus of your start-up? *

Your answer

8. Is your business registered with corporate affairs commission? *
- Yes
 - No
 - Maybe
9. Is your business registered with any pension administrator? *
- Yes
 - No
 - Maybe
10. Is your business registered with any health insurance agency? *
- Yes
 - No
 - Maybe
11. Is your business registered with any Federal inland revenue service ? *
- Yes
 - No
 - Maybe
 - Other:
12. Do you pay any form of social protection for your staff in form of Pension? *
- Yes
 - No
 - Maybe
13. Do you pay any form of social protection for your staff in form of health insurance? *
- Yes
 - No
 - Maybe
14. Do you pay any form of social protection for your staff in form of housing insurance? *
- Yes
 - No
 - Maybe
15. Do you pay other forms of social protection for your staff ? *
- Yes
 - No
 - Maybe

16. How long have you been operating this business? *

Your answer

17. Is this business your sole source of income? *

- a. Yes, it is full time and sole source
- b. Yes, It is the main but not the only source
- c. It is the second main source of business
- d. It is not one of the two main sources of income I have

18. How often does your business publish and file its annual returns at the corporate affairs commission? *

- a. Annually
- b. Bi-annually
- c. When profits are made
- d. When the need arises
- e. This is not an obligation for my business
- f. I am not aware of this obligation

19. What kind of account [bookkeeping] do you record for your business? *

- a. I do not keep accounts
- b. I only record cash transactions
- c. A full financial account is kept including a profit and loss statement
- d. Other:

20. What is the estimate profit margin in the last one year? *

- a. Less than 10%
- b. 10% and more
- c. I am not sure
- d. Other:

21. What is the duration of office hours per day in your business? *

Your answer

22. Do you have interns and/or apprentices working for your business? *

- a. Yes
- b. No
- c. I am not sure

23. How long is the average work hour of interns per day? *

Your answer

24. Do you have employment contracts with all your staff? *

- a. Yes
- b. No
- c. I am not sure

25. How many staff are full time within your employment? *

- a. All staff
- b. A few staff
- c. No staff
- d. I am not sure

26. Please provide the reasons for your answer if Q23 is 'No' *

Your answer

27. What are your long-term expectations of the evolution of this start-up? *

- a. Growth to global market
- b. Acquisition by big companies
- c. Mergers with other companies
- d. Initial public offers
- e. Other:

28. Do you consider bureaucracy as a problem of doing business in Nigeria? *

- a. Yes, it is a problem
- b. No, it is not a problem
- c. It is neither problematic nor helpful
- d. Other:

29. Do you consider tax as a burden to your business? *

- a. Yes, it is a burden
- b. No, it is not a burden
- c. I am not sure
- d. Other:

30. Which of the following geographical spread best describes your market OR demands for services of your company? *

- a. Lagos markets
- b. Nigerian Market
- c. West African Market
- d. Global market
- e. Other:

31. Do you undergo trainings on developing products that aim to shorten development cycles and to rapidly discover if the proposed business models are viable? *

- a. Yes
- b. No

32. How many funding/investment deals do you receive/achieve per year? *

Your answer

33. To what extent do you receive support from universities for your current operation in Yaba ecosystem?

Least support 1 2 3 Most Support

34. To what extent do you receive support from venture capitalist for your current operation in Yaba ecosystem? *

Least support 1 2 3 Most Support

35. To what extent do you receive support from Angel Investors for your current operation in Yaba ecosystem? *

Least support 1 2 3 Most Support

36. To what extent do you receive support from Incubators /hubs for your current operation in Yaba ecosystem? *

Least support 1 2 3 Most Support

37. To what extent do you receive support from Government agencies/regulations for your current operation in Yaba ecosystem? *

Least support 1 2 3 Most Support

38. To what extent do you receive support from Mentors for your current operation in Yaba ecosystem? *

Least support 1 2 3 Most Support

39. Please Provide justification for 32 -37 above *

Your answer

40. To what extent do you receive support from entrepreneurial Culture for your current operation in Yaba ecosystem? *

Least support 1 2 3 Most Support

41. To what extent do you receive support in form of access to human capital and work-force for your current operation in Yaba ecosystem? *

Least support 1 2 3 Most Support

42. To what extent do you receive support in form of access to training for your current operation in Yaba ecosystem? *

Least support 1 2 3 Most Support

43. To what extent do you receive support in form of access to local and global markets in your current operation in Yaba ecosystem? *

Least support 1 2 3 Most Support

44. Please provide a justification for your answers in 39-42 above *

Your answer

45. Did you have a paid job before this business? *

- a) Yes
- b) No, it is my first job after graduation

References

- Acs, Z. J. *et al.* (2018) 'Entrepreneurship, institutional economics, and economic growth: an ecosystem perspective', *Small Business Economics*. *Small Business Economics*, 51(2), pp. 501–514. doi: 10.1007/s11187-018-0013-9.
- Academic.oup.com, 2020. *Volume 34 Issue Supplement_1 | The World Bank Economic Review | Oxford Academic*. [online] Available at: <https://academic.oup.com/wber/issue/34/Supplement_1> [Accessed 31 October 2020].
- Acs Z.J., Virgill N. (2010) Entrepreneurship in Developing Countries. In: Acs Z., Audretsch D. (eds) *Handbook of Entrepreneurship Research*. International Handbook Series on Entrepreneurship, vol 5. Springer, New York, NY. https://doi.org/10.1007/978-1-4419-1191-9_18
- Acs, Z.J., Stam, E., Audretsch, D.B. and O'Connor, A., 2017. The lineages of the entrepreneurial ecosystem approach. *Small Business Economics*, 49(1), pp.1-10.
- Adebayo, R., 2020. *Taxes You Should Be Aware Of Before Starting A Business In Nigeria*. [online] Nairametrics. Available at: <<https://nairametrics.com/2020/01/13/taxes-you-should-be-aware-of-before-starting-a-business-in-nigeria/>> [Accessed 31 October 2020].
- Adetunji, B. *et al.* (2017) 'Microeconomics of Competitiveness Final Paper Lagos ICT Services Cluster'. Available at: http://www.isc.hbs.edu/resources/courses/moc-course-at-harvard/Documents/pdf/student-projects/Lagos_ICT_2017.pdf.
- Agu And Onah, 2018 C.E., *Entrepreneurship and Sustainable Economic Development in Nigeria*.
- Akinyoade, A., Dietz, T. and Uche, C., 2017. *Entrepreneurship in Africa*. Brill.
- Alter Chen, M., 2005. *Rethinking the informal economy: Linkages with the formal economy and the formal regulatory environment* (No. 2005/10). Wider Research Paper.
- Alvedalen, J. and Boschma, R., 2017. A critical review of entrepreneurial ecosystems research: Towards a future research agenda. *European Planning Studies*, 25(6), pp.887-903.
- Alvedalen, J. and Boschma, R., 2017. A critical review of entrepreneurial ecosystems research: Towards a future research agenda. *European Planning Studies*, 25(6), pp.887-903.
- Anyanduba, J.O. (2014). *Tax burden and the Economy*. Unpublished lecture note, Department of Accounting, University of Benin, Benin City.
- Arruda, C., Nogueira, V.S. and Costa, V., 2013. The Brazilian entrepreneurial ecosystem of start-ups: An analysis of entrepreneurship determinants in Brazil as seen from the OECD pillars. *Journal of Entrepreneurship and Innovation Management*, 2(3), pp.17-57.
- Audretsch, D.B. and Belitski, M., 2017. Entrepreneurial ecosystems in cities: establishing the framework conditions. *The Journal of Technology Transfer*, 42(5), pp.1030-1051.
- Aula, P., & Harmaakorpi, V. (2008). An innovative milieu—A view on regional reputation building: Case study of the Lahti urban region. *Regional Studies*, 42, 523–538.
- Autio, E., Nambisan, S., Thomas, L.D. and Wright, M., 2018. Digital affordances, spatial affordances, and the genesis of entrepreneurial ecosystems. *Strategic Entrepreneurship Journal*, 12(1), pp.72-95.
- Babatunde, S.A. (2014). *Significance of Tax Incentives and Infrastructural Development on*
- BBC News Pidgin, 2019. Campaign To Sue Nigeria Police Don Raise pass N11million - BBC News pidgin. [online] Available at: <<https://www.bbc.com/pidgin/tori-49843025>> Accessed 10 Nov. 2020
- Berner, E., Gomez, G. and Knorrinda, P., 2012. 'Helping a large number of people become a little less poor': The logic of survival entrepreneurs. *The European Journal of Development Research*, 24(3), pp.382-396

- Beugré, C.D., 2016. *Building entrepreneurial ecosystems in sub-Saharan Africa: A quintuple helix model*. Springer.
- Boi.ng. 2020. [online] Available at: <https://www.boi.ng/wp-content/uploads/2019/09/BOI-Working-Paper-Series-No6_Building-Entrepreneurial-Ecosystems-in-the-Nigerian-Manufacturing-Sector.pdf> [Accessed 30 October 2020].
- Briarcliff Manor, NY 10510: Academy of Management. Lam, A., 2004. Organizational innovation.
- Britishcouncil.org.2020.[online]Availableat:<https://www.britishcouncil.org/sites/default/files/lasg_education_presentation_3.pdf> [Accessed 30 September2020].
- Brown, R. and Mason, C., 2017. Looking inside the spiky bits: a critical review and conceptualisation of entrepreneurial ecosystems. *Small Business Economics*, 49(1), pp.11-30.
- Businessamlive. 2020. *Technology Start-Ups, Businesses To Get Tax Holidays – Osinbajo* | [online] Businessamlive.com. Available at: <<https://www.businessamlive.com/technology-start-ups-businesses-to-get-tax-holidays-osinbajo/>> [Accessed 31 October 2020].
- Budget, I.T., 2016. Lagos’ Informal Sector: Taxation & Contribution to the Economy.
- Cantner, U. *et al.* (2020) ‘Entrepreneurial ecosystems: a dynamic lifecycle model’, *Small Business Economics*. Small Business Economics. doi: 10.1007/s11187-020-00316-0.
- Cao, Z., Shi, X. A systematic literature review of entrepreneurial ecosystems in advanced and emerging economies. *Small Bus Econ* (2020). <https://doi.org/10.1007/s11187-020-00326-y>
- Charlot, O., Malherbet, F. and Terra, C. (2015) ‘Informality in developing economies: Regulation and fiscal policies’, *Journal of Economic Dynamics and Control*, 51, pp. 1–27. doi: 10.1016/j.jedc.2014.09.031.
- Chen, M.A., 2003, November. Rethinking the informal economy. In *Seminar-New Delhi-* (Pp. 14-20). Malyika Singh.
- Chen, M.A., 2016. The informal economy: Recent trends, future directions. *New Solutions: A Journal of Environmental and Occupational Health Policy*, 26(2), pp.155-172
- Co-Creation Hub Nigeria (CCHUB). 2020. *Start-ups - Co-Creation Hub Nigeria (Cc-hub)*. [online] Available at: <<https://cchubnigeria.com/start-ups/>> [Accessed 30 September2020].
- Contributor, O., 2018. *Unilag As A Missing Piece In Nigeria’S Tech Ecosystem*. [online] Nairametrics. Available at: <<https://nairametrics.com/2018/05/15/unilag-as-a-missing-piece-in-nigerias-tech-ecosystem/>> [Accessed 31 October 2020].
- Colin. N.,Medium. 2020. *5 Steps To A Healthy Entrepreneurial Ecosystem*. [online] Available at: <<https://salon.thefamily.co/5-steps-to-a-healthy-entrepreneurial-ecosystem-32940c0716c6>> [Accessed 30 September2020].
- Cohen, B., 2006. Sustainable valley entrepreneurial ecosystems. *Business Strategy and the Environment*, 15(1), pp.1-14.
- Cukier, D., Kon, F. and Lyons, T.S., 2016, June. Software start-up ecosystems evolution: The New York City case study. In *2016 International Conference on Engineering, Technology and Innovation/IEEE International Technology Management Conference (ICE/ITMC)* (pp. 1-8). IEEE.
- Cukier, D., Kon, F., & Krueger, N. (2015). Towards a software start-up ecosystems maturity model. Technical report RT- MAC-2015-03. São Paulo: University of São Paulo, Department of Computer Science.
- Cukier, D., Kon, F., & Lyons, T.S. (2016). Software start-up ecosystems evolution: The New York City case study. 2nd International Workshop on Software Start-ups, IEEE International Technology Management Conference, Trondheim.
- Cukier, D. and Kon, F., 2018. A maturity model for software startup ecosystems. *Journal of Innovation and Entrepreneurship*, 7(1), p.14.
- Cybercrimejournal.com.2020.[online]Availableat:<<https://www.cybercrimejournal.com/Adejohetalvol13issue1IJCC2019.pdf>> [Accessed 30 October 2020].

- Deloitte 2020. [online] Available at: <https://www2.deloitte.com/content/dam/Deloitte/za/Documents/deloitteafrica/Invest%20in%20Nigeria_Country%20Report_July18.pdf> [Accessed 31 October 2020].
- Development, Informality in the Process of Development and Growth (no date) ‘Policy Research Working Paper 7858’ 16
- Edoho, F.M., Sheriff, M. and Muffatto, M., 2015. The present state of entrepreneurship ecosystems in selected countries in Africa. *African Journal of Economic and Management Studies*
- Ekwealor, V., 2020. *Tax Compliance: Why Smes And Start-ups In Nigeria Do Not Pay Taxes*. [online] Techpoint Africa. Available at: <<https://techpoint.africa/2017/03/16/tax-compliance-nigerian-start-ups/>> [Accessed 31 October 2020].
- Elgin, C. and Erturk, F. (2019) ‘Informal economies around the world: measures, determinants and consequences’, *Eurasian Economic Review*. Springer International Publishing, 9(2), pp. 221–237. doi: 10.1007/s40822-018-0105-5.
- Eniola, A.A., 2020. Institutional Environment, Entrepreneurial Self-efficacy and Orientation for SME in Nigeria. *International Journal of Engineering*, 4(2), pp.17-24.
- Eriksson, P. and Kovalainen, A., 2008. Research philosophy. *Qualitative Methods in Business Research*, pp.11-25.
- Eriksson, P. and Kovalainen, A., 2015. *Qualitative methods in business research: A practical guide to social research*. Sage.
- Ekwealor, V., 2020. *Tax Compliance: Why Smes And Startups In Nigeria Do Not Pay Taxes*. [online] Techpoint Africa. Available at: <<https://techpoint.africa/2017/03/16/tax-compliance-nigerian-startups/>> [Accessed 31 October 2020].
- Feld, B., 2012. *Start-up communities: Building an entrepreneurial ecosystem in your city*. John Wiley & Sons.
- Feldman, M.P. (2014). The character of innovative places: Entrepreneurial strategy, economic development, and prosperity. *Small Business Economics*, 43(1), 9–20.
- Forbes. 2020. *#Stopprobbingus Nigerian Tech Community Tells Its Police*. [online] Available at: <<https://www.forbes.com/sites/tobyshapshak/2019/10/03/stopprobbingus-nigerian-tech-community-tells-its-police/>> [Accessed 30 September 2020].
- Fund, C., Sterling Bank targets “Switch” at Diaspora Nigerians with free banking, f., Access Bank, F., N66.2bn, S., tones, A., pathway, S., years, F., pathway, S. and Oil worries increase as prices relapse, U., 2020. *Technology Start-Ups, Businesses To Get Tax Holidays – Osinbajo | Businessamlive*. [online] Businessamlive.com. Available at: <<https://www.businessamlive.com/technology-start-ups-businesses-to-get-tax-holidays-osinbajo/>> [Accessed 31 October 2020].
- Genome, S., 2020. *Start-up Genome*. [online] Start-up Genome. Available at: <<https://start-upgenome.com/reports/global-start-up-ecosystem-report-2017>> [Accessed 31 October 2020].
- Genome, S., 2018. *Start-up Genome*. [online] Startup Genome. Available at: <<https://startupgenome.com/reports/global-startup-ecosystem-report-2017>> [Accessed 31 September 2020].
- Geddes, A., Parker, C. and Scott, S., 2018. When the snowball fails to roll and the use of ‘horizontal’ networking in qualitative social research. *International Journal of Social Research Methodology*, 21(3), pp.347-358.
- Gómez-Araujo, E. and Bayon, M. C. (2017) ‘Fatores socioculturais e o empreendedorismo dos jovens nas regiões rurais’, *Revista Brasileira de Gestao de Negocios*, 19(64), pp. 200–218. doi: 10.7819/rbgn.v0i0.2695.
- Gómez, G.M., Chawla, S. and Fransen, J., 2020. Exploring the Entrepreneurial Ecosystem Within the Informal Economy with a Multifactor Framework. In *Urban Studies and Entrepreneurship* (pp. 181-202). Springer, Cham.
- Heilbron, M., Leliveld, A. and Knorrinda, P., 2017. Innovation as a key to success? Case studies of innovative start-ups in Kenya and Nigeria. In *Entrepreneurship in Africa* (pp. 95-122). Brill.

- Hessels, J., Van Gelderen, M. and Thurik, R., 2008. Entrepreneurial aspirations, motivations, and their drivers. *Small business economics*, 31(3), pp.323-339.
- Igwe, P.A., Ogundana, A.N.A.O.M., Egere, O.M. and Anigbo, J.A., 2018. Factors affecting the investment climate, SMEs productivity and entrepreneurship in Nigeria. *European Journal of Sustainable Development*, 7(1), pp.182-182.
- Isenberg, D.J., 2010. How to start an entrepreneurial revolution. *Harvard business review*, 88(6), pp.40-50.
- Isenberg, D., 2014. What an entrepreneurship ecosystem actually is. *Harvard Business Review*, 5, pp.1-7.
- Isenberg, D., 2011. The entrepreneurship ecosystem strategy as a new paradigm for economy policy: principles for cultivating entrepreneurship. *Babson entrepreneurship ecosystem project, Babson college, Babson Park: MA*.
- Isenberg, D.J., 2010. How to start an entrepreneurial revolution. *Harvard business review*, 88(6), pp.40-50.
- Isenberg, D., 2011. How to foment an entrepreneurial revolution. *The Babson Entrepreneurship Ecosystem Project. Recuperado de: https://edisciplinas.usp.br/pluginfile.php/2326986/mod_resource/content/5/A9-How-to-foment-an-entrepreneurial-revolution-IEF-jan-12-2011.pdf*.
- Isenberg, D., 2013. Babson Entrepreneurship Ecosystem Project.
- Isenberg, D.J., 2016. Applying the ecosystem metaphor to entrepreneurship: uses and abuses. *The Antitrust Bulletin*, 61(4), pp.564-573.
- Iyortsuun, A.S., 2016. A conceptual overview of social entrepreneurship and its relevance to Nigeria's third sector. *International Journal of Social Entrepreneurship and Innovation*, 3(4), pp.242-256.
- Jackson, T., 2017. Lagos is Africa's most valuable start-up ecosystem [WWW Document]. Disrupt Africa. URL <http://disrupt-africa.com/2017/03/lagos-is-africas-most-valuable-start-up-ecosystem/> (accessed 4.12.17).
- Kautonen, T., Kibler, E., Wainwright, T., Fink, M. and Blackburn, R., 2014. Age and Subjective Age Identity as Moderators of the Entrepreneurial Intention-Action Relationship. In *Academy of Management Proceedings* (Vol. 2014, No. 1, p. 10149).
- Kazeem, Y., 2016. *Mark Zuckerberg Is On A Surprise Visit To Nigeria, Facebook'S Largest African Market*. [online] Quartz Africa. Available at: <<https://qz.com/africa/770002/mark-zuckerberg-is-in-nigeria-facebooks-largest-african-market/>> [Accessed 30 September 2020].
- Kibler, E., Kautonen, T. and Fink, M., 2014. Regional social legitimacy of entrepreneurship: Implications for entrepreneurial intention and start-up behaviour. *Regional Studies*, 48(6), pp.995-1015.
- Kon, F., Cukier, D., Melo, C., Hazzan, O. and Yuklea, H., 2014. A panorama of the israeli software start-up ecosystem. *Available at SSRN 2441157*.
- Lawal, F.A., Adegbuyi, O.A., Iyiola, O.O., Ayoade, E.O. and Taiwo, A.A., 2018. Nexus between Informal Networks and Risk-Taking: Implications for Improving the Performance of Small and Medium Enterprises (SMEs) in Nigeria. *Academy of Strategic Management Journal*, 17(2).
- Lepoutre, J. and Oguntoye, A., 2018. The (non-) emergence of mobile money systems in Sub-Saharan Africa: A comparative multilevel perspective of Kenya and Nigeria. *Technological Forecasting and Social Change*, 131, pp.262-275.
- Lingelbach, D. C., De La Vina, L. and Asel, P. (2011) 'What's Distinctive about Growth-Oriented Entrepreneurship in Developing Countries?', *SSRN Electronic Journal*, (Bhidé 2000), pp. 1–10. doi: 10.2139/ssrn.742605.

- Lingelbach, D.C., De La Vina, L. and Asel, P., 2005. What's distinctive about growth-oriented entrepreneurship in developing countries?. *UTSA College of Business Center for Global Entrepreneurship Working Paper*, (1).
- LIRS - Lagos Internal Revenue Service. 2020. *Lirs – Official Website Of Lagos State Internal Revenue*. [online] Available at: <<http://www.lirs.gov.ng/tax-information/tax-collection>> [Accessed 31 October 2020].
- Madichie, N.O., Mpofu, K. and Kolo, J., 2017. Entrepreneurship development in Africa: Insights from Nigeria's and Zimbabwe's telecoms. In *Entrepreneurship in Africa* (pp. 172-208). Brill. 17
- Malecki, E.J., 2018. Entrepreneurship and entrepreneurial ecosystems. *Geography Compass*, 12(3), p.e 12359.
- Mason, C. and Brown, R., 2014. Entrepreneurial ecosystems and growth oriented entrepreneurship. *Final report to OECD, Paris*, 30(1), pp.77-102.
- Mazzarol, T. (2014) Growing and sustaining entrepreneurial ecosystems: What they are and the role of government policy, White Paper WP01- 2014, Small Enterprise Association of Australia and New Zealand (SEAAANZ), www.seaanz.org
- Mazzarol, T. (2014), Entrepreneurial ecosystems and the role of government policy <https://theconversation.com/entrepreneurial-ecosystems-and-the-role-of-government-policy-35809>
- Mazzucato, M. (2012) *The entrepreneurial state, Soundings*. doi: 10.3898/136266211798411183.
- Mazzucato, M., 2011. The entrepreneurial state. *Soundings*, 49(49), pp.131-142.
- Mazzucato, M., 2013. The Entrepreneurial State: Debunking Public vs. *Private Sector Myths*, 1.
- McCormick, D. 1999. Value Chains, Production Networks and the Business System, Discussion Notes Prepared for the Value Chains Workshop, organized by the Rockefeller Conference Centre, Bellagio, Italy. September 25–October 1,1999.
- McKeown, T. and Phillip, K. (2014) 'Growing and sustaining entrepreneurial ecosystems : The role of regulation , infrastructure and financing', p. 17. Available at: <http://www.seaanz.org/>.
- Medium. 2020. *5 Steps To A Healthy Entrepreneurial Ecosystem*. [online] Available at: <<https://salon.thefamily.co/5-steps-to-a-healthy-entrepreneurial-ecosystem-32940c0716c6>> [Accessed 30 September2020].
- Medvedev, D. and Oviedo, A. M. (2016) 'Informality and Profitability: Evidence from a New Firm Survey in Ecuador', *Journal of Development Studies*, 52(3), pp. 412–427. doi: 10.1080/00220388.2015.1046442.
- Meghir, C., Narita, R., & Robin, J. (2015). Wages and Informality in Developing Countries. *The American Economic Review*, 105(4), 1509-1546. Retrieved June 18, 2020, from www.jstor.org/stable/43495426
- Muzaffar, A.T., Huq, I. and Mallik, B.A., 2009. Entrepreneurs of the streets: An analytical work on the street food vendors of Dhaka City. *International journal of Business and Management*, 4(2), pp.80-88.
- Narasaiah, M. (1999). Technological Entrepreneurship: The New Force for Economic Growth. *Indian Journal of Industrial Relations*, 34(3), 356-360. Retrieved May 21, 2020, from www.jstor.org/stable/27767603
- Naudé, W., 2008. *Entrepreneurship in economic development* (No. 2008/20). WIDER Research Paper.
- Ndiomewese, I., 2020. *Why The Silicon Valley Model Does Not Work For Nigerian Tech Start-ups*. [online] Techpoint Africa. Available at: <<https://techpoint.africa/2017/10/03/breaking-silicon-valley-mentality-africa/>> [Accessed 30 September2020].

- Nicotra, M., Romano, M., Del Giudice, M. and Schillaci, C.E., 2018. The causal relation between entrepreneurial ecosystem and productive entrepreneurship: A measurement framework. *The Journal of Technology Transfer*, 43(3), pp.640-673.
- Njaya, T., 2014. Operations of street food vendors and their impact on sustainable urban life in high density suburbs of Harare, in Zimbabwe.
- O'Leary, Z., 2017. *The essential guide to doing your research project*. Sage.
- Obeysekare, E., Mehta, K. and Maitland, C., 2017, October. Defining success in a developing country's innovation ecosystem: The case of Rwanda. In *2017 IEEE Global Humanitarian Technology Conference (GHTC)* (pp. 1-7). IEEE.
- Ogbuabor, J.E. and Malaolu, V., 2013. Size and causes of the informal sector of the Nigerian economy: Evidence from error correction mimic model.
- Ojo, O. and Nwaokike, U., 2018. Disruptive Technology and the Fintech Industry in Nigeria: Imperatives for Legal and Policy Responses. *Gravitas Review of Business and Property Law*, 9(3).
- Okoye, E.I. and Igbinovia, I., 2017, July. Tax Burden, Tax Incentives and Entrepreneurial Development: Evidence from Benin City, Nigeria. In *Chapter 33 of The Proceedings of the 2017 Faculty of Management Sciences International Conference on African Entrepreneurship and Innovation for Sustainable Development (AEISD)*.
- Oluwatobi, S., Oshokoya, D., Uwoghiren, E. And Oyebode, A., Entrepreneurial Ecosystem Matrix (Eem): A Proposed Framework for Nigerian Universities to Become Factories for Start-up Companies.
- Omotayo ---Journal Of Contemporary Issues In Educational Planning And Administration Volume 5, No.2, April, 2020 ISSN: 1119 3239
- Omotayo, O.T., 2020. Entrepreneurship As A Tool For Reducing Unemployment Among Nigerian Youth. *Journal Of Contemporary Issues In Educational Planning And Administration*, 5(2), P.85.
- Pitan, O.S. and Adedeji, S.O., 2012. Skills Mismatch among University Graduates in the Nigeria Labor Market. *Online Submission*.
- Regulation, C. B. *et al.* (2018) 'Doing Business in Nigeria 2018'.
- Saxenian, A., 1994. Regional networks: industrial adaptation in Silicon Valley and route 128.
- Saxenian, A., 1994. Lessons from silicon valley. *Technology Review*, 97(5), pp.42-42.
- Shane, S. and Venkataraman, S., 2000. The promise of entrepreneurship as a field of research. *Academy of management review*, 25(1), pp.217-226
- Shane, S.A., 2003. *A general theory of entrepreneurship: The individual-opportunity nexus*. Edward Elgar Publishing.
- Sheriff, M. and Muffatto, M. (2015) 'The present state of entrepreneurship ecosystems in selected countries in Africa', *African Journal of Economic and Management Studies*, 6(1), pp. 17–54. doi: 10.1108/AJEMS-10-2012-0064.
- Shepherd, D.A., Williams, T.A. and Zhao, E.Y., 2019. A framework for exploring the degree of hybridity in entrepreneurship. *Academy of Management Perspectives*, 33(4), pp.491-512.
- Spigel, B. (2017) 'The Relational Organization of Entrepreneurial Ecosystems', *Entrepreneurship: Theory and Practice*, 41(1), pp. 49–72. doi: 10.1111/etap.12167.
- Spigel, B. (2020) 'Global entrepreneurial ecosystems', *Entrepreneurial Ecosystems*, pp. 105–127. doi: 10.4337/9781788975933.00009.
- Spigel, B. (2020) 'Global entrepreneurial ecosystems', *Entrepreneurial Ecosystems*, pp. 105–127. doi: 10.4337/9781788975933.00009.
- Spigel, B., 2016. Developing and governing entrepreneurial ecosystems: the structure of entrepreneurial support programs in Edinburgh, Scotland. *International Journal of Innovation and Regional Development*, 7(2), pp.141-160.

- Stam, E., 2014. The Dutch entrepreneurial ecosystem. *Available at SSRN 2473475*.
- Stam, E., 2015. Entrepreneurial ecosystems and regional policy: a sympathetic critique. *European Planning Studies*, 23(9), pp.1759-1769.
- Stam, F.C. and Spigel, B., 2016. Entrepreneurial ecosystems. *USE Discussion paper series*, 16(13).
- Starklegalng 2020. *A Business Owner'S Legal Guide To Tech Start-ups In Nigeria – Stark Legal Solicitors*. [online] Available at: <<http://starklegalng.com/index.php/2019/10/19/a-business-owners-legal-guide-to-tech-start-ups-in-nigeria/>> [Accessed 31 October 2020].
- Steyaert, C. and Katz, J., 2004. Reclaiming the space of entrepreneurship in society: geographical, discursive and social dimensions. *Entrepreneurship & regional development*, 16(3), pp.179-196.
- Subrahmanya, M.B., 2017. Comparing the entrepreneurial ecosystems for technology start-ups in Bangalore and Hyderabad, India. *Technology innovation management review*, 7(7).
- Szerb, L.A., Acs, Z. and Autio, E., 2013. Entrepreneurship and policy: The national system of entrepreneurship in the European Union and in its member countries. *Entrepreneurship research journal*, 3(1), pp.9-34.
- Techcrunch.com. 2020. *Techcrunch Is Now A Part Of Verizon Media*. [online] Available at: <<https://techcrunch.com/2019/10/16/nigerias-stopprobbingus-campaign-could-spur-tech-advocacy-group-ceos-say/>> [Accessed 30 September2020].
- The Africa Report.com. 2020. *Tech Hubs Across Africa To Incubate The Next Generation*. [online] Available at: <<https://www.theafricareport.com/23434/tech-hubs-across-africa-to-incubate-the-next-generation/>> [Accessed 30 September2020].
- Techpoint.2020.[online]Availableat:<<https://intelligence.techpoint.africa/form.php?report=NSFR2020Q2>> [Accessed 31 October 2020].
- Tech point, 2020. [online] Available at: <https://techpoint.africa/2020/02/28/pitch-yourstartup/?fb_comment_id=2758207537604724_2768820976543380> [Accessed 31 September 2020].
- Thornton, P. H., Ribeiro-Soriano, D. and Urbano, D. (2011) 'Socio-cultural factors and entrepreneurial activity: An overview', *International Small Business Journal*, 29(2), pp. 105–118. doi: 10.1177/0266242610391930.
- UNDP. 2018. *Nurturing Entrepreneurial And Innovation Ecosystems For The Sdgs | UNDP*. [online] Available at: <<https://www.undp.org/content/undp/en/home/news-centre/speeches/2018/nurturing-entrepreneurial-and-innovation-ecosystems-for-the-sdgs.html>> [Accessed 30 September 2020].
- Unilag.2020. *As A Missing Piece In Nigeria's Tech Ecosystem*. [online] Naira metrics. Available at: <<https://nairametrics.com/2018/05/15/unilag-as-a-missing-piece-in-nigerias-tech-ecosystem/>> [Accessed 31 October 2020].
- van Haarlem, M.P., Wise, M.W., Gunst, A.W., Heald, G., McKean, J.P., Hessels, J.W., de Bruyn, A.G., Nijboer, R., Swinbank, J., Fallows, R. and Brentjens, M., 2013. LOFAR: The low-frequency array. *Astronomy & astrophysics*, 556, p.A2.
- VC4A. 2020. *VC4A Launching Nigeria Start-up Ecosystem Report: A Start-up Ecosystem ...* [online] Available at: <<https://vc4a.com/blog/2018/08/29/vc4a-launching-nigeria-start-up-ecosystem-report-a-start-up-ecosystem-on-the-move/>> [Accessed 31 October 2020]
- Varathan, P., 2020. *Africa's Tech Ecosystems Can't Work Like Silicon Valley, And They Shouldn't Try To*. [online] Quartz Africa. Available at: <<https://qz.com/africa/1081783/africas-tech-ecosystems-in-lagos-and-nairobi-cant-work-like-silicon-valley/>> [Accessed 30 September2020].
- Von der Heydte, L., 2020. *Challenges Resulting from Multiple Institutional Logics in Hybrid Organizations: The Case of Social Business Hybrids*. Springer Nature.

- Winterhalter, S., Zeschky, M.B., Neumann, L. and Gassmann, O., 2017. Business models for frugal innovation in emerging markets: The case of the medical device and laboratory equipment industry. *Technovation*, 66, pp.3-13.
- Women's Technology Empowerment Centre - W. TEC. 2020. THE GENDER GAP - Women's Technology Employment Centre - W. TEC. (online) Available at: <<https://wtec.org.ng/the-gender-gap/>> [accessed 10 November, 2020]^o
- Wong, P.K., Ho, Y.P. and Autio, E., 2005. Entrepreneurship, innovation and economic growth: Evidence from GEM data. *Small business economics*, 24(3), pp.335- 350.
- Wong, P.K., 2004. The re-making of Singapore's high tech enterprise ecosystem. accepted chapter In H. Rowen, W. Miller, M. Hancock (Eds.), *Asia's high tech regions*.
- World Bank. 2020. *Informality In The Process Of Development And Growth*. [online] Available at: <<https://www.worldbank.org/en/events/2016/10/12/informality-in-the-process-of-development-and-growth>> [Accessed 30 September2020].
- Www2.deloitte.com. 2020. [online] Available at: <https://www2.deloitte.com/content/dam/Deloitte/za/Documents/deloitteafrika/Invest%20in%20Nigeria_Country%20Report_July18.pdf> [Accessed 31 October 2020].
- Zeschky, M.B., Winterhalter, S. and Gassmann, O., 2014. From cost to frugal and reverse innovation: Mapping the field and implications for global competitiveness. *Research-Technology Management*, 57(4), pp.20-27.
- Zouria, A. and Udanoh, M. U. (2017) 'Cross-Country Entrepreneurial Culture Comparison: The Case of Morocco and Nigeria', *International Journal of Economics, Commerce and Management*, V(5), pp. 359–383.