

# **Tech ɔhemaas: the making of female technology entrepreneurs in Ghana<sup>1</sup>**

By

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A thesis submitted to the University of Birmingham for the degree of  
DOCTOR OF PHILOSOPHY

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College of Arts and Law  
University of Birmingham  
December 2021

*Word Count: 79,970*

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<sup>1</sup> This is an application of English grammar rules to Twi and is an expression of my creative license

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## Abstract

This thesis is about the making of female technology entrepreneurs in Ghana. Ghana is a fascinating case study that reveals a paradox: the digital economy and digital entrepreneurship hold great potential for women, yet in unlocking this potential, they face severe inequalities. The acceleration of digital entrepreneurship in Ghana is driven by a convergence of factors including, inter alia, the government of Ghana's push to promote and expand Ghana's digital economy, increased focus on and funding of local start-ups by global Venture Capital (VC) firms, and entrepreneurs responding accordingly. This thesis explores the nature and characteristics of Ghana's exponentially shifting but little-understood digital landscape in Ghana, with a special focus on the experiences and personal narratives of a cohort of successful women entrepreneurs. This thesis reveals how class and gender inequality intersect in Ghana, and how the impacts of government policies are socially embedded. The experiences of Ghanaian women tech entrepreneurs challenge and help us rethink dominant frameworks for understanding gender, finance, entrepreneurship, and technology.

This thesis focuses on the trajectories of 21 female digital entrepreneurs as they navigate challenges to achieve success. This opens three key themes for investigation. The first theme is the notion of success as a social fact.<sup>2</sup> The second theme is inevitably the space of digital entrepreneurship. But what kind of space is it? And how is it situated within the wider field of entrepreneurship and business in Ghana? As compared to North America, Europe, and Asia, relatively little has been written about the digital economy across Africa, and in Ghana in particular, and so my research fills this empirical gap. In addition, I demonstrate, through my research, how the digital economy while often understood as a virtual space, is embedded in social relations, and how these social relations are in some ways distinctively Ghanaian but are also part of and are affected by global flows. The third theme is about women's experiences and the importance of also situating and contextualising the lives and narratives of the women who are presented in this study. I look at how women tech entrepreneurs operate along the intersections of gender, class, race, and nationality in a digital economy which is simultaneously local and global. To analyse these themes, I draw on ethnographic fieldwork conducted over a four-and-a-half-year period between July 2016 and December 2020, examining female entrepreneurial experiences in Accra. My research situates these 21 entrepreneurs in the context of the economic, political, social, institutional, familial, and cultural factors that enable and sometimes hinder digital entrepreneurship. It also identifies the unique gendered challenges faced by these women.

Taken together, this thesis provides a grounded account, drawn from my ethnographic work, of the defining elements of digital entrepreneurship in Ghana and its intersection with gender. Each chapter challenges and nuanced themes in the public discourse on the digital economy. This thesis also contributes to the ethnography of women entrepreneurs in Ghana. This thesis also makes more general contributions to the debate on the digital economy in Africa. My examination of the digital imaginary and the state not only draws on the broader debate on digital discourses but is also an attempt to understand the wider social, economic, and political processes involved in the transformation of the digital economy in Ghana. The reconfiguration of the digital

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<sup>2</sup> See Durkheim (1982)

economy in Ghana has revealed that global financial flows are a fundamental aspect of the way the current development of the country is reconfiguring forms of social differentiation, the relations between the state and its citizens, and the way entrepreneurs are positioning themselves locally and globally. In this regard, my study of the digital economy and female technology entrepreneurs in Ghana can provide a point of comparison for future investigations of those other social and economic terrains that are contributing to the re-organisation of the economy of Ghana.

## Dedication

*I dedicate this to my mentor of blessed memory, Dr. Sulley Gariba, who sent me this message in 2005 when I was a junior in high school asking questions about higher education:*

Dear Sangu: What you are or want to be is not connected to what you study! First make a decision what you see yourself doing, with passion and a commitment that is so deep inside you that nothing else can move your passion away from it...whether you earn money or not, you remain focused on that one thing! Then, when you have found that "thing", simply study any degree, to the highest level (PhD), and make the degree serve your passion and "gift" of talent, not the reverse.

I knew from the very start that I had a gift for "advising people". My great grandfather was a sooth-sayer; which means, in modern-day speak, that he was a "consultant". So, how do you study to be a professional "advisor"? What course makes you into a consultant? Nothing really. But knowing that I am potentially, even genetically gifted to be a professional advisor, a modern-day "sooth-sayer" was enough to launch me into any study program. It happens that I did Political Science; but it would not have mattered really, if I did Music, Zoology or Archaeology, I knew deep inside me that I want and MUST be a "sooth-sayer". So, here I am, soothsaying for you.

Follow your passion, son; and do so with conviction...any degree you do, make sure you excel in it, go to the highest level....and tomorrow, no one will ask: what course did he do? They'll simply say: Boy, he is good at whatever he does...which no one would have done before anyway, so no one will know what to call it.

Sulley

## Acknowledgements

This PhD journey has been one of the most challenging yet rewarding experiences of my life. I thank you, Lord Jesus, for giving me the strength to persevere. I am indebted to so many people who helped me get here. I am grateful to my friend Jonathan Gramling who first steered me towards seriously considering a PhD in Adams House in 2013. I am forever grateful to Emmanuel Akyeampong and Evelyn Higginbotham at Harvard University who wrote my recommendation letters for the programme.

I am eternally grateful to my supervisors: Maxim Bolt, Marco Di Nunzio and Kate Skinner. I learned so much from them and they have become dear friends. I am also grateful to Katrien Pype who served as a co-supervisor for a couple of years. I thank the BHAM Department of African Studies and Anthropology for providing a supportive environment to pursue my doctoral studies. I am also indebted to the College of Arts and Law for the financial support towards my studies.

I am thankful for my research assistants who helped me with this project including Zelia Haruna, Hawa Abdul Rahman and Amanda Debuo Der.

I have relied on my family for love and support throughout this process and would like to thank my parents Naa Prof Edmund Nminyem Delle and Amira Delle as well as my siblings Eguu, Banguu, Prof and Mim.

I received so much wonderful advice and guidance from many professors globally and wish to thank Oludamini Ogunnaike, Naseemah Ogunnaike, Ayodeji Ogunnaike, John Comaroff, Seyram Avle, Laurien Bowles and Rachel Spronk. I am grateful to the Africa Research Forum and Tessa Pijnaker for organising helpful

feedback sessions.

During this journey, I struggled with depression and anxiety, and I am grateful to my care team: Dr. E, Stacey, Andrew, Lynn, and Dr. Muo. To my Executive Assistant Jen Rodgers and my Chief of Staff, Adom Arthur, thank you so much for everything. To my driver Sylvester Agbagba, you're amazing and I am so thankful. To Bright Gbeku, who helped me with government relations, thank you so much.

Finally, I could not have completed my PhD journey without my partner, Afra. Afra, your love, support and presence in my life gave me the fuel to finish this journey. I am forever indebted to you.

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## List of abbreviations

AGBF	Africa Global Business Forum
AI	Artificial Intelligence
AVCA	African Private Equity and Venture Capital Association
AWS	Amazon Web Services
B2B	Business to Business
B2C	Business to Consumer
BAT	British American Tobacco
BBC	British Broadcasting Corporation
BoP	Bottom of the Pyramid
BPO	Business Process Outsourcing
CDC	Commonwealth Development Corporation
CDF	Comprehensive Development Frameworks
CDs	Compact Discs
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CICs	e-Community Information Centres
CNBC	Consumer News and Business Channel
CNBC	Consumer News and Business Channel
COVID-19	Coronavirus Disease of 19
D4I	Digital for Inclusion
DANIDA	Danish International Development Agency
DFC	Development Finance Corporation
DFI	Development Finance Institutions
DFS	Digital Financial Services
DIV	Developers in Vogue
DSS	Decision Support System
EBITDA	earnings before interest, taxes, depreciation, and amortisation
ECOWAS	Economic Community of West African States
ECP	Eligible Contract Participant

EGDI	E-Government Index
EITs	Entrepreneurs in Training
ERP I	Economic Reform Programme I
ERP II	Economic Reform Programme II
ETF	exchange-traded funds
EU	European Union
FCG	Financial Compliance Group
FDA	Food and Drugs Authority
FDI	Foreign Direct Investment
FX	Foreign Exchange
GaWC	Globalisation and World Cities Research network
GAX	Ghana Alternative Market
GB	Gigabyte
GCEEI	Ghana Centre for Entrepreneurship, Employment, and Innovation
GCIC	Ghana Climate Innovation Centre
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
GEPP	Ghana E-Payment Portal
GES	Growth Enabling Systems
GH	Ghana
GIFEC	Ghana Investment Funds for Electronic Communications
GIL	Gender Innovation Lab
GIMPA	Ghana Institute of Management and Public Administration
GIPC	Ghana Investment Promotion Centre
GIS	Ghana International School
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GPI	Golden Palm Investments Corporation
GRA	Ghana Revenue Authority
GRTCC	Ghana Road Transport Coordinating Council
GSMA	Global System for Mobile Communications Association

GSS	Ghana Statistical Service
GVCF	Ghana Venture Capital Fund
GWIT	Ghana Women in Information Technology
GYEEDA	Ghana Youth Employment and Entrepreneurial Development Agency
HIPC	Heavily Indebted Poor Countries
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
HSM	Hardware Security Module
IBM	International Business Machines Corporation
IC	Investor Committee
ICT	Information, Communication and Technology
ICT4AD	ICT for Accelerated Development Policy
IDs	Identification (s)
IFC	International Finance Cooperation
ILO	International Labour Organisation
IMF	International Monetary Fund
IPO	Initial Public Offering
IQ	Intelligence Quotient
KIC	Kosmos Innovation Centre
KNUST	Kwame Nkrumah University of Science and Technology
MBA	Master of Business Administration
Mbps	Megabits per second
MCI	Management Centre Innsbruck
MEST	Meltwater Entrepreneurial School of Technology
MHz	Megahertz
MIT	Massachusetts Institute of Technology
MNCs	Multinational Corporations
MOC	Ministry of Communications
MoU	Memoranda of Understanding
MSc	Master of Science
MSCI	Morgan Stanley Capital International
NBIA	National Business Incubation Association

NBSSI	National Board for Small Scale Industries
NCA	National Communications Authority
NCSPS	National Cybersecurity Policy and Strategy
NDC	National Democratic Congress
NEIP	National Entrepreneurship and Innovation Plan
NGO	Non-Governmental Organisation
NHIS	National Health Insurance Scheme
NIIT	National Institute of Information Technology
NITA	National Information Technology Agency
NPP	New Patriotic Party
NYEP	National Youth Employment Programme
OECD	Organisation for Economic Co-operation and Development
PE	Private Equity
QSBS	Qualified Small Business Stock provision
RG	Registrar General
RGD	Registrar General's Department
SAP	Structural Adjustment Programme
SaaS	Software as a Service
SBIIncubator	Stanbic Bank Incubator
SCD	Systematic Country Diagnostic
SIM	Subscriber Identity Module
SMEs	Small and Medium Enterprises
SMS	Short Message Service
STEM	Science, Technology, Engineering and Mathematics
STS	Science and Technology Studies
TAM	Total Addressable Market
UCLA	University College of Los Angeles
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme



UNESCO	United Nations Educational Scientific and Cultural Organisation
UNICEF	United Nations International Children Emergency Fund
UPS	United Parcel Service
US	United States
USA	United States of America
USAID	United States Agency for International Development
USSD	Unstructured Supplementary Service Data
VC	Venture Capital
VCs	Venture Capitalist
VCTF	Venture Capital Trust Fund
VFMC	Venture Fund Management Company
WEF	World Economic Forum
We-Fi	Women Entrepreneurs Finance Initiative
WITA	Women in Tech Africa
WHO	World Health Organisation
WTO	World Trade Organisation
WWF	World Wide Foundation
YEA	Youth Employment Agency

# Chapter 1: Introduction

## 1.1 Tech chemaas

“Welcome, Sangu. I hope it wasn’t too difficult to find my place,” Betty smiled as she welcomed me into her gated residential community. She lives in a modern townhouse in Cantonments, one of the most exclusive neighbourhoods in Accra.<sup>3</sup> Betty is the founder and managing partner of Cobalt Partners, one of the leading technology consulting firms in Ghana with a client list of over 300 companies across the African continent. A World Economic Forum Young Global Leader, she serves on the boards of several organisations focused on women and technology, including Ghana Women in Information Technology (GWIT) - which she co-founded.<sup>4</sup> Global, and cosmopolitan, Betty exemplifies a new generation of female entrepreneurs in Accra, the majority of whom are returnees, who are creating spaces for themselves and navigating challenges in Ghana’s growing digital economy and achieving economic success.

Ghana is a fascinating case study that reveals a paradox: the digital economy and digital entrepreneurship hold great potential for women, yet in unlocking this potential, they face severe inequalities. The acceleration of digital entrepreneurship in Ghana is driven by a convergence of factors including, inter alia, the government’s push to promote and expand Ghana’s digital economy, increased focus on and funding of local start-ups by global Venture Capital (VC) firms, and entrepreneurs responding accordingly. This thesis will explore the nature and characteristics of Ghana’s exponentially shifting but little-understood digital landscape in Ghana, with a special focus on the experiences and

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<sup>3</sup> A 4-bedroom 312sqm house in Cantonments recently sold for US\$2.4 million in late 2021

<sup>4</sup> Betty also serves on the boards of Wired Women, Women of West Africa Entrepreneurs and Woman 2.1 Summit

personal narratives of a cohort of successful women entrepreneurs. This thesis will reveal how class and gender inequality intersect in Ghana, and how the impacts of government policies are socially embedded. It provides a basis for comparative analyses in future research, enabling contrasts to be drawn by Ghana and digital economies elsewhere in Africa and the world. The experiences of Ghanaian women tech entrepreneurs challenge and help us rethink dominant frameworks for understanding gender, finance, entrepreneurship, and technology. The digital economy has been a focus in the optimistic discourses that counter Afro-pessimism and is therefore mobilised as a material and ideational resource in policy and party-political contestations.

Betty and the other women tech entrepreneurs studied in this thesis are navigating through this contested terrain to achieve success. The experiences, successes and challenges of Betty and the other women tech entrepreneurs are not just a local study of a global phenomenon – they suggest ways in which empirical findings of earlier studies and theories of class, gender, mobility, and entrepreneurship can all be revisited from new perspectives. They are envisaged in this thesis as important people with lessons to give to the world. I call them tech *ɔhemaas* – a term which points to their historical and cultural situated-ness, whilst also capturing their drive and their ability to act upon the world.<sup>5</sup>

## 1.2 Research questions

This thesis focuses on the trajectories of 21 female digital entrepreneurs as they navigate challenges to achieve success. This opens three key themes for investigation. The first theme is the notion of success as a social fact. On the one hand, there is a vast

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<sup>5</sup> *ɔhemaas* is the Twi word for queen; see footnote 1

amount of scholarship which has focused on the experiences of mobility/immobility, stagnation, and social death, especially while exploring the life trajectories of marginalised youth (Young 2011; Min-Harris 2010; Milton-Edwards 2018). On the other hand, discussions about success have been limited by the attempts of scholars to provide an Afro-optimist corrective to Afro-pessimist narratives (Mahajan 2011; Drummond et al., 2014). A pre-occupation with the growth of the African middle-class is a feature of some of these Afro-optimist narratives. Both narratives are embedded in a stereotypical understanding of Africa's political economies as sites of exceptional measures. There is a need for a more nuanced understanding of experiences of success, which includes careful consideration of what class means in Ghana, and how class mediates the success (or failure) of entrepreneurs, such as those at the heart of this thesis.

The second theme is inevitably the space of digital entrepreneurship (Nambisan, 2017; Sahut et al., 2019; Zhao & Collier, 2016; Ngoasong, 2018; Taura et al., 2019; Friederici et al., 2020; Kelly & Firestone, 2016). The European Commission (2015, 1) defined the term digital entrepreneurship in its report on strategic policy:

digital entrepreneurship embraces all new ventures and the transformation of existing businesses that drive economic and/or social value by creating and using novel digital technologies. Digital enterprises are characterised by a high intensity of utilisation of novel digital technologies (particularly social, big data, mobile and cloud solutions) to improve business operations, invent new business models, sharpen business intelligence, and engage with customers and stakeholders.

But what kind of space is it? And how is it situated within the wider field of entrepreneurship and business in Ghana? As compared to North America, Europe, and Asia, relatively little has been written about the digital economy across Africa, and so my

research fills this empirical gap. In addition, I will demonstrate, through my research, how the digital economy while often understood as a virtual space, is embedded in social relations, and how these social relations are in some ways distinctively Ghanaian but are also part of and are affected by global flows.

The third theme is about women's experiences and the importance of also situating and contextualising the lives and narratives of the women who are presented in this study (Bruni et al., 2004; Forson, 2013; Gerson, 2004; Rakowski & Espina, 2010; Bawa, 2016; Marlow, 2014; Kuada, 2009; Lewis, 2006; Brush et al., 2014; Cornwall, 2005). I underscore the agency of these women by showing the various ways in which they navigate socio-cultural norms and expectations and create opportunities for themselves while contributing to the growth of the digital economy. In doing so I am mindful of avoiding "salvific narratives in which scholars rescue African women by telling the wider world that they are strong, resilient and enterprising" (Thomas, 2016, 328) and will complicate agency by focusing on a range of "meaningful activity...which has consequences, intended or otherwise, which may be articulate or inarticulate, poetic or prosaic, verbal or visual or sensual" (Comaroff & Comaroff, 1997, 48). Whilst much of the evidence in this thesis does indeed point to women tech entrepreneurs in Ghana as "strong, resilient and enterprising," I do not treat these characteristics that simply emerge out of "culture." Rather, I look at how women tech entrepreneurs operate along the intersections of gender, class, race, and nationality in a digital economy which is simultaneously local (especially the offline dimensions of digital which I discuss in chapter 4) and global (particularly around venture capital, which I discuss in detail in chapter 6).

To analyse these themes, I draw on ethnographic fieldwork conducted over a four-and-a-half-year period between July 2016 and December 2020, examining female entrepreneurial experiences in Accra. My research situates these 21 entrepreneurs in the context of the economic, political, social, institutional, familial, and cultural factors that enable and sometimes hinder digital entrepreneurship. It also identifies the unique gendered challenges faced by these women.

In approaching this research, I am mindful of Cornwall (2005)'s work on gender in Africa in which she points out that:

Representations of women and men in the literature on gender in sub-Saharan Africa evoke contradictory images... One...tells an insistently negative tale of the voiceless victims of ever-deepening multiple oppressions...Another set of images portrays African women as feisty, assertive, self-reliant heroines. Cast within a countervailing narrative to male anthropologists' descriptions of threats they pose to normative conjugal and family relations ... these women are the very stuff of feminist fables (1).

In addition, it is important to recognise that a range of African feminist perspectives have emerged to challenge the biases of Western feminism. Some scholars make the argument that African feminism cares more about economic bread and butter issues. Others posit a more radical epistemological and political break with Western feminism and argue for a politics of complementarity and co-operation between women and men, as distinct from the individualism and focus on sexuality and conflict with men that is associated with Western feminism (Cornwall, 2005). Further, as Bawa (2016) has warned, scholars need to be careful to ensure that African socio-cultural and political gender systems are not a-historically and problematically compared with Western models, so as not to undermine existing traditional socio-cultural empowerment avenues for African women (120).

However, some scholars like Obioma Nnaemeka (1998) argue that:

to meaningfully explain African feminism, it is not to Western feminism but rather to the African environment that one must refer. African feminism is not reactive; it is proactive. It has a life of its own that is rooted in the African environment....African feminism's valorisation of motherhood and respect for maternal politics should not be pitted against the demotion of motherhood/maternal politics by radical feminism in the West, rather they should be investigated in the context of their place and importance in the African environment (33).

Nnaemeka pushes back against the language of Western feminism, such as the language of resistance that Oberhauser (2010) speaks of in her research on women's resistance to neoliberal reforms in Ghana, and instead claims that African feminism is based on engagement that is premised on collaboration, negotiation, and compromise (Ibid, 35). Other scholars such as Hudson-Weems (2019) argue for a theory of African womanism which rejects the Eurocentric definition of a woman and claims it is destructive to the woman of African heritage. This binary between African feminism/womanism and Western feminism is not as clear-cut as there is considerable disagreement among Western feminists and not all African feminist scholars agree with one another. While most of my interlocutors identified as feminists, a few did not identify as feminists and approached it from a distance and with caution.

In this thesis, I seek to answer the overarching research question: what are the factors responsible for the making of female tech entrepreneurs in Ghana? This question opens multiple fields of inquiry and sub-research questions including the following:

- What is the role of the state in the creation of the digital economy and digital entrepreneurship in Ghana?
- Is class a mediating factor for entry into the digital economy?

- What are the challenges that female tech entrepreneurs face in building their enterprises? How have they overcome these challenges?
- What is the role of incubators and accelerators?
- How do female tech entrepreneurs raise capital for their enterprises?
- How have these tech chemaas navigated marriage and motherhood in a digital age?

Importantly, in addressing these research questions, this thesis challenges dominant assumptions in both the public imagination and scholarly discourse by reconciling perceived binaries or joining issues and perspectives that people tend to assume are different. This meta-dynamic is one of the central features of this thesis and allows the reader to take a more productive lens to the arguments and appreciate the dynamic nature of the material. For example, in this thesis I demonstrate how the digital economy is embedded in social relations, thereby complicating the common notion that technology is a level playing field. I also draw attention to the ways Ghana has a higher entrepreneurship rate for women and better gendered outcomes compared to Silicon Valley – one example of many in which I resist both Afro-pessimist narratives that perceive Africa as backwards and Afro-optimist narratives that paper over serious problems.

### 1.3 Existing literature

#### 1.3.1.1 Social mobility and class

This section is going to explore the various interconnections of class, education, entrepreneurship, gender, and representations and will position the thesis in relation to this literature. My research demonstrates the importance of class in Ghana, especially its



intersection with gender and its mediation of entry into and success within the digital economy. There has been a significant amount of global literature on social mobility, even though the bulk of this scholarly effort has been focused on North America and Europe (e.g., Goldthorpe, 1980; Breen, 2005; Egerton & Savage, 2000; Saunders, 2011). Economists have studied intergenerational mobility with a variety of methodological advances in comparing parent and offspring achievements (e.g., Solon, 1999; Black & Devereux, 2011; Blanden, 2013). Social science researchers identify several factors related to social mobility including, inter alia, economic growth (Duncan, 1966; Jencks, 2002); family income and wealth (Dunn, 2007; Solon, 1992; Mazumder, 2005; Solon, 2004; Durlauf, 2006); social class (Bourdieu, 1977, 1984, 1990, 1993); educational attainment (Hout, 2015; Hoskins & Barker, 2017; Smith & Skrbiš, 2017; Gibb, 2016; Gillies, 2005; Maslen, 2019) and aspirations (Gove, 2011; Morgan, 2015; Devine, 2004; Pasquier-Doumer & Brandon, 2015). Building on this scholarship, researchers like Hout (2015) have argued that we cannot just rely on income or occupational categories, but we need to “measure the complexity of people’s backgrounds to adequately assess the degree to which those circumstances constrain success” (30).

Many scholars have found that social and economic mobility is often inflected by gender. Beller (2009) identifies same-sex persistence in data from the 1990s and early 2000s in the United States, finding that sons followed their fathers’ occupation and daughters mostly followed their mothers’ occupation. Dumais (2002) found that traditional gender stereotypes play a role in the lack of cultural participation by male students and that female students may be more encouraged to make use of their cultural capital to succeed in school. Tacchi et al. (2012) explore ideas of meaningful mobility for women

using technologies, arguing that technologies must be understood within their culturally embedded everyday uses and settings. Other scholars have also looked at the impact of patriarchy on the mobility of women (Walby, 1990; Giddens, 2006; Macionis & Plummer, 2005).

Although a great deal of the initial literature on social mobility focused on Europe and North America, there is a growing amount of literature focusing on Africa and Ghana in particular. Iversen et al. (2019) argue that crucial knowledge gaps remain about the patterns and determinants of income, educational and occupational mobility in developing countries. In addition, there are several methodological considerations including the utility of standardised occupational classifications that were developed to study social mobility in the West and the limited availability of datasets and reliable economic records in many African countries. The existing literature describes social meanings of success and imaginaries (Spronk, 2020; Osei-Tutu et al., 2018; Anyidoho et al., 2012); the impact of patriarchy (Prozesky & Beaudry, 2019); transnational mobility (Coe, 2020; Bowles, 2013); the role of religion (Freedman, 2016; Dovlo, 2004); and education (Skinner, 2009a; Behrends & Lentz, 2012). Recent studies in Ghana show that traditional meanings of success are changing in response to economic developments, especially among the youth (Asafu-Adjaye, 2012; Behrends & Lentz, 2012). This broad literature is important for understanding the general context within which digital entrepreneurship emerges. However, the literature has important gaps: for example, there is very little literature that is focused on the digital economy in Ghana. Even among the limited literature on the digital economy (see e.g., Friederici, 2020), there isn't a focus on gender. I am going to rethink our understanding of class by looking at the workings of the digital economy.

For this research, I adopt a Bourdieusian lens on class to help understand the lived experiences and conversion strategies of my interlocutors. This thesis neither represents an exercise in, nor sets out to undertake detailed class analysis in Ghana. Both its overall aim and detailed analyses concern a purposive sample of the country's digital elite who while undoubtedly part of a transnational professional elite prefer the self-description "middle class." In my exploration of class as a mediating force in the digital economy, I find Bourdieu's (1977, 1984, 1986) work and his distinction between cultural, social, economic, and symbolic capital to be particularly useful. Bourdieu enables us to understand that class is "not based on recognising oneself as belonging to a given position, but as differentiating oneself from others in a field" (Devine & Savage, 2005, 14). Bourdieu defines capital as "the set of actually usable resources and powers" (1984, 114).

Economic capital includes financial assets such as cash, bonds, stocks, and physical assets like land or machinery; non-cash assets are directly convertible into cash and can be institutionalised in the form of property rights (Bourdieu, 1986). Cultural capital refers to everyday modes of behaviour (Lareau & Weininger, 2003). The acquisition of cultural capital requires an investment of time (Bourdieu, 1986, 244-246). Cultural capital subsists as accreditations embodied in individuals and their families, represented in the form of cultural goods, and institutionalised as educational credentials (Ablo & Overa, 2015, 397). The system of credentials and recognitions make some forms of cultural capital worthier than others.

Social capital can be described as "the structure of relations between actors and among actors" (Coleman, 1998, S98). These relations are governed by mutual support,

shared language, shared norms, social trust, and a sense of mutual obligation (Crossley, 2004). As Ablo and Overa (2015) note, social capital is oftentimes interconnected with cultural capital since cultural codes underpin social ties (397). Other scholars like Ben Fine (2003, 589) have assailed the concept of social capital in the literature for being “fungible” and departing from Bourdieu’s original analysis which was based on the resources attached to “power, repression and their highly contextually specific forms of reproduction and transformation in classes.” Symbolic capital is the “form that the various species of capital assume when they are perceived and recognised as legitimate” (Bourdieu, 1989, 17).<sup>6</sup>

There are important critiques of Bourdieu including his tendency to treat culture reductively (Lentz, 2015, 21), his methodological nationalism (though, in fairness, Bourdieu himself clearly acknowledges in *Distinction* that his work is limited to France) (Devine & Savage, 2005, 17) and his lack of attention to feminist theory (Skeggs, 2004, 19). On the latter, while acknowledging some of his exploration of gender relations in his work, Skeggs (2004) asks “how appropriate is Bourdieu for feminist analysis?” (20) and concludes that Bourdieu offers explanatory power not offered elsewhere through three major analytic strands. First, he links objective structures to subjective experience. Secondly, he offers the model of social space in which individuals embody and represent various volumes and compositions of different forms of capital, with different trajectories across space and time. Thirdly, he provides methodological insights, in which his concept of reflexivity offers an introspective examination of self. Skeggs (2004) notes that Bourdieu struggles to account for gender and sexuality and the “nuanced practices of

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<sup>6</sup> For example, fiat money has no intrinsic value but becomes a legitimate form of exchange based on a shared social understanding of fiat as a repository of economic value (Lawler, 2011).

those who do not operate from a dominant position” (30). Yet, Bourdieu is still very useful for “understanding the middle-class, their authorisation, exchange and use of distinction” (Ibid) and for understanding how the middle-classes operate as a “class for themselves” (Ibid, citing Harvey, 1993).

### 1.3.1.2. Middle Classes

For this thesis, I combine Bourdieu’s literature on class and mobility with Spronk’s discussion on the middle classes in Africa. I adopt Spronk’s (2020, 484) perspective of looking at the middle class not as a coherent category based on economic characteristics but as a nascent category that “substitutes the question of what constitutes the middle class...in favour of an exploration of when, where, how and why being middle class becomes an option, a possibility, desirable or a problem” (citing Donner & De Neve, 2011, 8). To appreciate how class mediates entry into the digital economy requires an understanding of middle classness in Ghana and its historical evolution.<sup>7</sup>

Ghana is now officially classified as a middle-income country with most of its population residing in urban areas where there is a “vibrant middle class” rooted in the private sector economy (Nathan, 2016, 238).<sup>8</sup> Ghana’s largest metropolitan area, Greater Accra, where my interlocutors reside, has a population of over four million, with 80 per cent of families earning over US\$4 per day and almost 25 per cent of adults having some

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<sup>7</sup> There are two classics from the 1980s that commenced the historiography on education, middle-class marriages, and social mobility in West Africa. See Christine Opong, *Middle Class African Marriage: A Family Study of Ghanaian Senior Civil Servants* (London: Allen and Unwin, 1981); and Kristin Mann, *Marrying Well: Marriage, Status and Social Change among the Educated Elite in Colonial Lagos* (Cambridge: Cambridge University Press, 1985).

<sup>8</sup> See also <https://statsghana.gov.gh/gssmain/storage/img/infobank/2021%20PHC%20Provisional%20Results%20Press%20Release.pdf> on Provisional Results from 2020 Census [Accessed December 9, 2021]

high school education, English literacy, and formal sector employment (Ibid). As Lentz (2015) notes, the term middle class is being increasingly adopted by Africanist scholars, driven by three phenomena: the recent economic growth on the African continent (mostly driven by commodity prices); the increasing globalisation of categories of social-structure analysis through institutions like the World Bank which have introduced this category into policy discourses; and the appeal of the label of middle class and the promise it offers of morally legitimate upward mobility and economic advantage based on achievement (25).

Hamidu (2015) notes that the history of Ghana's middle class harkens back to the early twentieth century where there was a nascent middle class "characterised by similarities of occupation, lifestyle and status, endowed with a certain capacity for collective action" (142). The development of the middle class in Ghana emerged at the convergence of three intersecting processes: the continued integration of Ghana into the global economy in the late nineteenth century; the development of an education system starting with mission schools; and the expansion of state employment in the post-independence period (Ibid; see also Lawrance et al., 2006). The establishment of formal Western education created a foundation for social mobility and the creation of a new kind of political elite (Svanikier, 2007). Education became closely associated with upward social and career mobility and played a key role in defining social status (Hamidu, 2015, 142). Formal education was significant for popularising new forms of style and consumption (e.g., clothing) and establishing new forms of distinction between the *anibue* and the uneducated (Skinner, 2009b).<sup>9</sup>

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<sup>9</sup> Anibue is the Twi word for civilised

In her research in Ghana, Spronk (2020) observed that middle-class formation is based on three enabling conditions for the pursuit of social mobility: education, social networks, and access to financial resources. Education has long been linked to middle-class status in Ghana (Coe, 2020, 3). In Ghana, “education has been the most decisive factor of social differentiation” (Behrends & Lentz, 2012, 140). Higher education historically has been important in securing meaningful employment and also acts as a badge of prestige (Spronk, 2020, 475). Building on Bourdieu (1986), Coe (2020, 7) argues, “academic qualifications are an effort by actors to institutionalise the conversion rates between cultural capital and economic capital and thus reduce the diversity and dynamism of interpretations about the value of a particular qualification.”

Beyond just education, Coe (2020) posits that there are two competing models of middle classness in Ghana with varying implications for state action, education, and gender. One model is the developmentalist middle class supported by state funded education and employment. Coe observes that the state as the major employer of educated persons in the developmentalist middle class model provides the formula for converting academic qualifications (cultural capital) into civil servant positions that in turn create symbolic, social, and economic capital for the actor (2020, 7). Another model, which she terms the neoliberal middle class, is “engaged in entrepreneurship, connected to global capital, obtaining short-term instrumental or practical education and dependent on the state’s promotion of private markets” (3).<sup>10</sup>

While Spronk (2014) points to the deterioration of the developmentalist middle class across Africa with the rise of the neoliberal middle class, Coe (2020) argues that

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<sup>10</sup> Other scholars have also noted the rise of the professional managerial class around the world (see Graeber, 2014).

both classes co-exist in tension in Ghana. While the neoliberal structural adjustment reforms of the 1980s and 1990s resulted in a decline in the status and earnings of civil servants in Ghana, the country's economic boom and growth of its private sector in the 2000s has occurred simultaneously with a rapid expansion of its civil service, though that expansion has been limited (Coe, 2020, 603). At the same time, there has also been a significant expansion of both secondary education and higher education, which means that there are more academics and higher degree holders.

Coe also contends that the neoliberal middle class “is ... connected to global capital, obtaining short-term instrumental or practical education” in contrast to the formal education associated with the developmentalist middle class (Ibid). However, as we will see in some of the case studies in this thesis, education and networks associated with institutions of higher learning play a significant role in facilitating that connection to global capital. As one of my interlocutors shared, “there is no question that my Ivy League credentials and the alumni network put me in the right rooms to even connect with the VCs ... we could laugh over the same jokes and connect over shared experiences as fellow alums in ways that wouldn't be possible if I went to Legon, for example” (Interview, August 25, 2019).<sup>11</sup>

Coe (2020) also argues that these different models of middle classness in Ghana have implications for gender. She notes that nursing and teaching have been among the few avenues for women to obtain civil service positions within the developmentalist middle class (Coe, 2020, 603) and cites Heintz (2005) in stating that the overwhelming majority

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<sup>11</sup> VCs refers to venture capitalists. Legon refers to the University of Ghana; it is located in the Legon neighborhood of Accra and thus is popularly referred to as “Legon.”



(90%) of civil servants are men.<sup>12</sup> However, this data is questionable especially considering more recent research which shows that in Ghana, 45% of civil service bureaucrats are women (Rasul et al., 2018, 8). The neoliberal middle class, by contrast, is set up as more open to female employment because it overlaps with “the informal economy” in Ghana which has long been dominated by women (Coe, 2020, 603; Clark, 1994).

Not all scholars agree. For example, Overa (2017) believes that the current processes of globalisation have a gendered impact and affect women’s agency in greater ways than men’s agency and that women’s agency “may often be restricted by the cultural, social and economic constraints and contradictions that undermine its potential for enactment” (363). For Overa, structural and normative limitations constrain the agency of female entrepreneurs, especially the ones that operate in male-dominated and globalised fields such as oil and gas (and technology). This reproduces gender differences in the amount of space entrepreneurs have to manoeuvre within the social fields (Ibid).

Being middle class is partly about self-representation. In Ghana, there is also an ideological dimension to representing oneself as middle class (Hamidu, 2015). For example, Lentz (2015) in her interviews with educated Northern Ghanaians, observed that while the older generation referred to themselves as elite, the younger generation preferred to call themselves middle class as they found it to be a more socially acceptable term than elite (5). I had a similar experience where virtually all my interlocutors preferred to call themselves middle class and resisted any categorisations of elite, which they

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<sup>12</sup> Coe may be conflating civil service with formal sector employees

associated with a negative connotation that emphasised social distance from others. There is a sense in which the term “middle class” serves to mask forms of advantages of birth by suggesting that large numbers of loosely described “middle class” people have access to similar kinds of educational and material resources, and thus, what they make out of them depends on personal qualities such as intelligence and hard work. The term middle class coheres with some individuals’ desire to represent their success as an outcome of meritocratic competition. The term “elite” on the other hand denotes individuals who have had special advantage that is not accessible to the majority of the society.

In her research on the middle class in Ghana, Coe (2020) uses the concept of boundary work, building on the work of Mercer (2018) and Bourdieu (1986) “to examine the ways in which social distinctions are reproduced...and the bases on which people make judgments about social status, value and worthiness and [how] it is shaped by cultural and historical structural opportunities” (Coe 2020, 524). Lentz (2015) argues that “economistic definitions of the middle class through its location in the occupational structure or its income and expenditure do not suffice and can even be misleading” and calls for a necessary exploration of the material and symbolic struggles over class boundaries (25). Coe (2020) also calls for us to exercise caution towards “the middle class boosterist discourse emanating from the African Development Bank and global management consultancy firms” and advocates a practice-based understanding of social class given the lack of reliable data on occupation and income in many African countries (603; see also Jerven, 2013, 2014). Many people also derive their income from multiple sources, a practice in Ghana that is now popularly known as *kpa kpa kpa* though this

phenomenon has long been observed in Ghana's informal economy (see e.g., Hart, 1973).<sup>13</sup>

In her research, Hamidu (2015) observed that the middle classes in Ghana tend to live in gated residential communities in Accra and its suburbs (like Betty's residence) with a smaller family set-up compared to the traditional African family setting (147). The rise of Ghana's gated communities since the early 2000s has been linked to the emergence of a well-compensated professional class who are mostly "educated university graduates and some of them have been to school abroad, their overall lifestyle is different, and they have access to technology, cars and houses" (Ibid). These gated communities do not just provide practical utilities such as comfort and security, but also (re)produce social networks and cultural capital (Ibid).

Returnees in Accra, like most of my interlocutors, are reproducing the urban spaces that they experienced while living abroad, and real estate developers nurture those globalised expectations by building gated communities. Grant (2009) argues that these developments, such as the rise of the gated communities, are in response to the globalisation of Accra's urban economy and the ways in which foreign financial flows to Ghana are delocalising aspects of the urban economy (2). Grant calls for a contemporary globalisations lens which emphasises globalisation processes and the individuals that employ global strategies and illuminate global networks by showing how connections are

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<sup>13</sup> In a Joy News interview of a man on the assessment of the Ghanaian economy in November 2014, the journalist asked him about the state of the economy and his finances. He responded that the economy has been volatile and unstable and with five children, he responds by doing "kpa kpa kpa" which he further described as "it's a movement, you pass here, you pass there, you throw certain things together [to make it work]." It has since become a popular phrase used by young people and entrepreneurs to describe doing whatever it takes to succeed economically and employing creativity and hard work. It was memorialised in a popular song by a Ghanaian artist called Guru titled "Kpa Kpa Kpa movement" which was released in December 2014 and has garnered half a million views on YouTube (See <https://www.youtube.com/watch?v=MJwpMqBPP0s>).

created, protected, altered, and reconfigured locally from Accra (Ibid, 5). The urban impacts of globalisation in Accra are experienced differently by residents depending on their global exposure, occupation, education, income, travel history, family histories, networks, and connections. Grant observes that most urbanites in Ghana are increasingly drawing on resources that span the globe and are operating simultaneously at a variety of scales from neighbourhood to international (Ibid, 7).<sup>14</sup>

Hamidu (2015) observes that the middle class in Ghana requires not just educational, traditional, and cultural status, but also financial means. The ability to afford a certain lifestyle and comfort permits entry into this social class (148). As one of my interlocutors said, “I’m middle class because I can travel all over the world and I can afford nice things.” Hamidu’s (2015) fieldwork found that most of the middle-class households in Accra make an income of \$1,000 - \$3,000 a month, with those earning monthly incomes of \$5,000 - \$10,000 a month belonging to the upper middle class or the global middle class (149). Yet, my research also showed a multiplicity of middle-class experiences and the limits of financial means. As one of my interlocutors remarked, “you can have all the

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<sup>14</sup> Grant describes three movements in which globalisation is grounded in Accra (2009). The first movement comes from the top by international organisations and the government who have promoted an economic liberalisation policy environment which has made Accra the city a “theatre of accumulation” with circulation of capital from foreign direct investment, new foreign companies, and global transfers of capital from remittances and diaspora savings (Ibid, 10). The second movement, globalising from below, typically involves civil society as opposed to global capital and is often represented in the literature as opposition to globalisation from grassroots activism and efforts to benefit from the new global context (Ibid). The third movement, in-between globalising, is facilitated by return migrants with roots in both the local and global environment, where they combine traditional social networking with transnational networking (Ibid, 11). This transnational networking -- which becomes very important in the digital economy -- involves relationships with sources of global capital and expertise that transcends Ghana’s borders and enables individuals to operate simultaneously in the local and the international domains (Ibid, 21). However, Cooper (2001) cautions us to further query this concept of globalisation and to ask questions about “the limits of interconnection, about the areas where capital cannot go, and about the specificity of the structures necessary to make connections work” (189). He calls on us to seek concepts that are less sweeping in their generalisations and are more precise in their historical specificity, and importantly, emphasise both the nature of spatial linkages and their limits (Ibid, 192). A lot of the rhetoric around globalisation presents it as a modern phenomenon, yet as far back as the sixteenth century, companies like the Dutch East Indies Company oversaw global supply chains linking Europe, Asia, and Africa (Ibid, 194).

money in the world, but you can't buy class...that's why the *sakawa* boys have money, but no respect...They can afford to eat at Santoku, sure, but are they getting invited to the private parties and events? No.”<sup>15</sup>

As Hamidu notes, defining the middle class in Ghana demands an expansiveness to incorporate “different sociological and economic realities and different individual trajectories” (Ibid: 143). She cites Kofi Benti, the co-founder of IMANI, one of the most prominent think tanks in Ghana, who described Ghana's middle class as follows: “Our definition of the middle class does not have to do with disposable income or comfort. Our definition of the middle class has to do with the ability to mask poverty...someone who is middle class here in Ghana would be considered lower class in a developed country” (Ibid: 143).

The most important themes of the existing literature that apply to my research are conversion of various types of capital, the intersection of class and gender in the digital <sup>16</sup>economy, and the evolution of middle-classness in Ghana. My thesis resists the dominant discourse which articulates the digital economy as this universal and level playing field. From my research, I observed both phenomena occurring simultaneously: there are ways in which the digital economy is creating opportunities for women (especially with respect to the push for empowering women in technology led by government and many international organisations such as the World Bank and GIZ); in other ways, the digital economy limits the agency of female entrepreneurs (especially when it comes to fundraising from venture capital for their technology ventures, which I

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<sup>15</sup> *Sakawa* boys refer to young men who are involved in cyberfraud. Santoku is a Japanese fusion restaurant in Accra and is considered one of the most expensive restaurants in the country; dinner for two with wine will easily cost \$300-\$400.

<sup>16</sup> See Shejini (2019), Feuls et al. (2012) and Joshi & Yermish (2000)

discuss in-depth in chapter 6). I also argue that the two models of middle classness in Ghana espoused in the literature – developmentalist and neoliberal – are not mutually exclusive and separate. In fact, they are deeply interconnected and overlap. For example, I observed that a lot of state officials and government employees leverage their salaried positions and insider knowledge to engage in entrepreneurial ventures. Importantly, my research contributes to filling the gap in the literature on digital economy, which has limited coverage of Africa/Ghana and even more limited coverage of a gender lens.

### 1.3.2 Digital entrepreneurship

The key themes from the literature that are most relevant for my thesis are returnees, the gendering of tech entrepreneurship and the gender finance gap. My research will analyse the financing ecosystem in Ghana (in Chapter 2) and its gender gap (in Chapter 6) and will show how Ghanaian female digital entrepreneurs anticipate and try to either work around or directly tackle some of these obstacles. With unprecedented and unparalleled access to the leading venture capital firms in Ghana, my research opens a window into the inner workings of these VC firms, showing how these firms get access to deals and giving deep insight into how investment decisions are made, who gets funded and why. I will also analyse the returnee factor in Chapter 3 and Chapter 6. My research builds on the literature on the gendering of tech spaces (incubators and accelerators) and shows how while Ghana still has a long way to go, it has better outcomes than Silicon Valley and offers some lessons for the rest of the world.

The available literature on digital entrepreneurship generally describes innovation and creation of hubs of innovation (Nambisan et al., 2018; Yoo et al., 2010; Svahn et al., 2017; Davidson, 2005). Several scholars have focused on the role of government policies

in promoting technology-based economic development (World Bank, 2019; Nambisan et al., 2019; Cumming & Johan, 2010; DRouillard, 2017; Hafezieh et al., 2011; Cassia et al., 2011; Siegel & Wessner, 2011; Poyago-Theotoky et al., 2002; Siegel, 2006; Rothaermel et al., 2007). Other scholars point to other factors such as the existence of digital infrastructure (Aldrich, 2014; Kim & Hann, 2013; Hatch, 2013; Davidsson, 2015; McIntyre & Srinivasan, 2017; Parker et al., 2016), access to venture capital (Zook, 2002; Hamilton, 2001; Chang, 2004); and having a mass of founders with entrepreneurial traits (Wang et al., 2016; Millman et al., 2010; Batjargal, 2007; Liu et al., 2019; Ratzinger et al., 2018). Scholars are also divided on the impact of digital entrepreneurship with some researchers pointing to exacerbation of inequalities and the creation of a digital divide (Arendt, 2008; Berger & Kuckertz, 2016; Dy et al., 2017). Other scholars make the case for the potential for democratisation of opportunity (Novo-Corti et al., 2014; Shirazi et al., 2010). From a gendered perspective, some scholars have discussed gender disparities in the participation and the creation of high-growth technology ventures (Wheadon & Duval-Couetil, 2019; Dautzenberg, 2012). Many scholars have attributed some of the gender disparities to differences in networking practices in technology entrepreneurship (Wheadon & Duval-Couetil, 2019; Dabic et al., 2012; Marlow & Carter, 2004).

Although a great deal of the literature focuses generally on the West, there is some burgeoning literature on Africa and Ghana. Zaheer et al. (2019) in a recent interdisciplinary literature review on digital entrepreneurship found that less than 5% of all articles in their primary set were focused on Africa. The most recent and most comprehensive study is Friederici et al. (2020)'s book *Digital Entrepreneurship in Africa*. In this book, the authors argue that African digital entrepreneurship is highly unevenly

distributed across the continent; is characterised by slow and mostly linear growth; creates digital products focused on urban markets; involves innovations that blend digital technologies with non-digital outreach strategies to solve the last-mile problem; has led to the creation of new entrepreneurial identities; and has resulted in cultural and racial tensions as Silicon Valley's ideals have come into conflict with local realities.<sup>17</sup> Other relevant older literature focus on mobile money (Maurer, 2012; Kendall et al., 2012; Omwansa & Sullivan, 2012; Breckenridge, 2010; du Toit, 2008); returnees (Avle, 2014); the creation and diffusion of digital technologies (Olopade, 2014; Bright, 2017; Juma, 2016); FinTech<sup>18</sup> (Nsehe, 2014; Chironga et al., 2017); and African tech hubs (Du Bocher, 2016; Friederici, 2016; Ndemo & Weiss, 2017). This broad literature is significant for understanding the general context of my research. However, two strands of literature give the context for the arguments I present in this research. The first literature focuses on returnees, and in this literature, the work of Avle (2014) is particularly relevant.

A significant number of Ghanaians emigrated to other parts of Africa, Europe and North America following independence (Avle, 2014, 1; Rohdie, 1965). In the 1950s and 1960s, it was mostly university students and professionals and they emigrated in smaller numbers. In the 1980s, the scale of migration increased and groups of people in occupational categories that had little prior history of migration now started appearing much more often as migrants (see Coe, 2013; Manuh, 2005). The most recent data from the 2010 national census showed that of the 1% of the population that emigrated, 38% went to Europe, 24% moved to the United States and Canada, 36% emigrated across

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<sup>17</sup> The last mile problem refers to the challenges of getting goods to the end-consumer given the infrastructural constraints in many developing markets (see Chapter 4)

<sup>18</sup> Fintech is a portmanteau term for “financial technology.” It encompasses any type of technology in financial services from mobile payment apps to cryptocurrency.



Africa, and the remainder settled across Asia and Oceania (Avle, 2014, 1). Since then, there is evidence that Ghanaians have been progressively returning to resettle in Ghana (Ibid). Many of the emigrants who left in the 1980s emigrated due to economic and political volatility, and those who returned were mostly driven by the achievement of economic and political stability in Ghana (Ibid). In addition, life development (such as family and lifestyle) also impacted resettlement decisions in Ghana, consistent with research on other South-North migration returns (Ibid, see also Coe, 2013; Chacko, 2007; Yang, 2006; Zhou, 2008). Like many of my interlocutors, the migrants that return tend to be of a higher socio-economic background with high levels of education and experience and are better equipped to capitalise on market dislocations (Avle, 2014, 1). My interlocutors include both people who themselves migrated and have now returned to Ghana, as well as people whose parents migrated in the 1970s/80s/90s and who were born in Europe or North America and have subsequently settled in Ghana.

Returnees bring with them accumulated savings, skills they acquired and developed overseas, and an ability to easily reintegrate into their home country, given their familiar understanding of local practices and their ties to local networks (Ibid, 2). Because returnees maintain their global ties as well, they join the “digital diaspora,” and bring together “countries on their residential itinerary” (Zhou, 2008, 245). This allows them to leverage resources from a broader and global range of stakeholders and collaborate on a global scale (Avle, 2014, 2). These sorts of networks, especially migrants who are connected to Silicon Valley and other tech hubs, are key to the development of high-tech industries in emerging markets (Ibid, 3). However, some studies suggest that returnees are not the primary drivers of change or transformation; rather, they take advantage of

the foundational work already accomplished by local entrepreneurs and multinational corporations (Kenney et al., 2013). In this lens, “returnees may not be pioneers but they may still be considered catalysts for growth as they tend to bring in capital and up-to-date technical information” (Avle, 2014, 3).

Avle notes that while some returnees gain employment with established firms, a large percentage of them become entrepreneurs. Thus, “returning, then, becomes about taking on risks as well as opportunities in a space that could use their particular expertise or capital” (Ibid). Returnees sometimes take on opportunities that extend beyond their skills or prior work experience (Ibid). This may help explain the disproportionate representation of returnees among my sample set of female digital entrepreneurs, with 71% of them falling in this category.

Most of the female digital entrepreneurs I interviewed came from privileged social and educational backgrounds (Chapter 3 discusses this in greater depth). They are like the many Taiwanese, Chinese, and Israelis who relocated to their native countries after working in Silicon Valley for years (Saxenian, 2006). These relocations can be connected to broader migration movements and the mutability of the global tech industry.

Because computers and mobile phones run on essentially the same basic principles worldwide, knowing how to programme or code in specific languages such as Java or C++ means that, for the most part, one can start making things with a networked device. However, the systems that support the development of communication services and artefacts beyond a single prototype or micro scale differ by country, and it takes more than government action to build an industry (Avle, 2014, 7).

Saxenian (2006) found that in all the countries she examined, “returnees transformed the local environment for entrepreneurship by addressing immediate obstacles to success, ranging from capital markets and telecommunications regulations

to the educational systems and research institutions. In each case, they have contributed to the rapid creation and improvement of local capabilities” (9). The evidence from the female digital returnees in Ghana suggests that they are also trying to address challenges at the firm level, industry level and national (and sometimes regional or global) level. For example, Ethel Cofie, one of my interlocutors, founded ‘Women in Tech Africa,’ a network of women and girls in the tech industry with membership spanning 30 countries all over Africa to “allow us to compare our challenges, learn from each other and connect across borders to expand our influence.” As I mentioned in the opening paragraph, Betty also founded several industry organisations including Ghana Women in Information Technology and Women in West Africa Entrepreneurs.

The second strand of literature is on the gendering of entrepreneurship and tech entrepreneurship. Globally, female entrepreneurs are underrepresented in tech entrepreneurship (Kelley et al., 2012). Herrington, Kew and Mwanga (2017) call for more research that explores contextually significant factors that contribute to the gender-based disparities in technology entrepreneurship globally. They cite the Global Entrepreneurship Monitor report which calls for scholars to incorporate multiple perspectives and the context of specific economies including the development profile, national culture, politics, and social dynamics (Ibid). Technology entrepreneurship is a field where gendered contexts intersect because both technology and entrepreneurship are gendered (Wheadon & Duval-Couetil, 2019). Even when women succeed in the field of entrepreneurship, they tend to be excluded from the higher value sectors like technology that continue to be male-dominated (Wheadon & Duval-Couetil, 2019; Kelley et al., 2012). The concept of technology itself is not gender neutral (Wheadon & Duval-Couetil, 2019;

Walby, 2011; Henwood, 2000). The conception and framing of technology in masculine terms in many Western contexts “influence the everyday experiences of gender, historical narratives, employment practices, education and the distribution of power across a global society in which technology is seen as the driving force of progress” (Bray, 2007, 38).

Systemic and institutionalised biases prevent women from acquiring the skills and expertise and negatively impact the recruitment and retention of women in jobs, that could help eliminate the gender gap in technology (Kelan, 2007; Bray, 2007; Hill et al., 2010; Bilimoria et al, 2008; Hewlett et al., 2008; Godwin et al., 2006; Goel et al., 2014; Orser & Hogarth-Scott, 2002; Wheadon & Duval-Couetil, 2019). The conflation between “stereotypically masculine traits, the skills used to define a successful entrepreneur and the subsequently lowered expectations about the ability of women as entrepreneurs has resulted in ‘covert discriminatory practices’ that impact female career intent, self-efficacy, and the types of entrepreneurial ventures chosen by women” (Wheadon & Duval-Couetil, 2019, 310). This has financial and economic implications for women as individuals and for the economy, especially since several scholars have noted that female entrepreneurs employ more women than their male counterparts (Overa, 2017; Hanson, 2009; Nagar et al., 2002).

Most of the research on female entrepreneurship outside countries in the global North focuses on entrepreneurs in the informal economy (Overa, 2017; Langevang et al., 2015; Overa, 2007). Female entrepreneurship has often been ignored because “women’s entrepreneurship is reshaping places in ways that differ from the impacts of place that are usually attributed to entrepreneurship” (Hanson, 2009, 246). At one level, women entrepreneurs are navigating through the existing social relations, but they are also acting

upon those relations. My interlocutors, as returnees, while familiar with Ghanaian social practices, repertoires, and institutions, also read them from a particular position and act upon them as they navigate through life.

There has been a growing body of work focusing on female entrepreneurship and female-owned businesses in Africa. Female entrepreneurs are estimated to have contributed between \$250 billion and \$300 billion to Africa's GDP in 2016 (Berger 2018). One of the key studies illuminating the growth of female entrepreneurship was the World Bank's 2008 report *Doing Business: Women in Africa*. This report noted that the three countries with the highest percentage of women entrepreneurs were Ghana (44%), Cape Verde (43%) and Rwanda (41%).<sup>19</sup>

Women's entrepreneurship has been a part of Ghanaian culture since pre-colonial times (Chamlee-Wright, 1997; see also Akyeampong & Fofack, 2014), although the type of work they focused on followed gendered norms (Overa, 2017; Langevang et al., 2015). Gender norms do not prevent women from employment. In Ghana, 61% of the population of women are categorised as economically active. Within this group, over 95% of them are employed; however, it is important to note that only 11.7% receive wages, with most of them being self-employed (Ghana Statistical Service [GSS], 2014, 45-50).<sup>20</sup> 92.2% of women work in the informal economy compared to 83.5% of men (Ibid). This is partly due

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<sup>19</sup> The *Mastercard Index of Women Entrepreneurs* (2018) confirmed these patterns and noted that the countries with the highest number of female entrepreneurs included Ghana, Uganda, Bangladesh, and Vietnam. The report highlighted that Ghana had the highest percentage of women business owners (46%), speaking to a long history of female entrepreneurship in Ghana.

<sup>20</sup> GSS defines economically active as "a person is considered as economically active if he/she was employed or unemployed, otherwise the person is economically not active. The economically not active persons are those who did not work and were not seeking for work; that is, are not currently employed or unemployed" (GSS, 2014, 45). Work is defined as "any economic activity performed by the respondent that contributes to economic production of goods and services. Examples are selling in a market/street, working in an enterprise/business or for government, working in one's own farm or enterprise, etc." (Ibid, 44).

to cultural mores, for example, among the Akan (the largest ethnic group in Ghana), earning money to contribute to a child's welfare is considered as being a good mother (see e.g., Salifu, 2020; Clark, 1999).

There is a gendered pattern to the types of work in which Ghanaians engage. Men focus on construction, driving and fishing, and women focus on cooking, trading, hairdressing, domestic work, and other home-based enterprises. Even with farming which involves both men and women, the patterns to the types of crops and the types of tasks they carry out often run along gendered lines. (See Overa, 2017; Wrigley-Asante, 2014; Langevang & Gough, 2012; Gough, 2010; Clark, 1994). In urban areas, the formal economy employs 26% of men and only 12% of women, with the divergence attributable to women's lower educational level and gender discrimination (Overa, 2017). When women work in the formal sector, especially the civil service, they face subtle discrimination under the cultural norm of male leadership and hit a "glass ceiling" that makes it harder to climb the ladder beyond lower-level positions (Adusah-Karikari & Ohemeng, 2014, 575). In the formal sector, too, women's work is gender stereotyped, with many women working as secretaries, cashiers, shop attendants, cleaners, teachers, nurses and in beauty salons (Overa, 2017; Overa, 2007).

Women in many African countries are seen to pursue necessity-based entrepreneurship to reduce poverty rather than pursuing an attractive opportunity (Ssendi, 2013). Globally, the level of women entrepreneurship is low compared to men (Global Entrepreneurship Monitor, 2020). For Africa, Simonin (2006) believes the disparity in entrepreneurship rate<sup>21</sup> is because many women invest their limited resources in food

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<sup>21</sup> Entrepreneurship rate is defined as percentage of the 18 – 64 population who are currently entrepreneurs, i.e., actively involved in a business they own or co-own.

and education for their children and are afraid of investing in risky ventures. This is not the case in Ghana, where the rate of entrepreneurship among women (38%) is *higher* than that of men (34%) (Global Entrepreneurship Monitor, 2020). However, women's businesses "are of a lower scale and value than men's businesses" (Overa, 2017).

Even though women outnumber men when it comes to the rate of entrepreneurship generally in Ghana, stark gender disparities emerge in the burgeoning tech ecosystem, more in line with global trends. For example, in the WhatsApp group 'Ghana Tech Entrepreneurs', which as its name implies is a group of mostly technology entrepreneurs, based in Ghana, with a minority from across Africa and globally, of the 241 members, only 12% of members are women.

Some studies suggest that female-owned firms underperform male-owned firms in sales, assets, employees, profit margins, financial returns, growth, and longevity (Daniels & Mead, 1998 [Kenya]; Rosa et al., 1996 [United Kingdom]; Loscocco & Robinson, 1991 [United States]; Brush, 1990 [OECD]; McPherson, 1996 [Southern Africa]). Other studies dispute the claim of a gender gap in performance (El-Hamidi, 2011 [Egypt]; Bardasi et al., 2007 [Africa]; Watson, 2002 [Australia]). Scholars have attributed the perceived gender gaps to several factors such as cultural and institutional (Sowa et al., 1992 [Ghana]; Aryeetey, 1998 [Ghana]; Cook & Nixon, 2000 [Global]; Abor & Biekpe, 2006 [Ghana]), business approaches (Masters & Meier, 1988 [United States]; Bates, 1995 [United States]), and differences in characteristics (Aterido & Hallward-Driemeier, 2011 [Africa]). These differences can be at the firm level and include the use of technology and innovation (Bernard et al., 2010 [United States]), access to credit (Quartey, 2013 [Ghana]), access to market (Aryeetey et al., 1994 [Ghana]; Gockel & Akoena, 2002

[Ghana]). The differences can also be in the characteristics of the entrepreneur e.g., skills, experience, and education (Kayanula & Quartey, 2000 [Ghana and Malawi]). Sometimes the differences are attributable to external factors such as political instability or the lack of infrastructure (Ayyagari et al., 2007 [Global]).

Many researchers have identified barriers to financial capital as a key driver of the lack of women in technology entrepreneurship (Wheadon & Duval-Couetil, 2019; Avnimelech & Teubal, 2006; BarNir, 2012; Brooks et al., 2014; Brush et al., 2014). Female entrepreneurs are priced at a higher risk level than men by venture capitalists and are impacted by multiple cognitive biases (Wheadon & Duval-Couetil, 2019; Robb, & Coleman, 2014). Female entrepreneurs are less likely to receive equity funding compared to male entrepreneurs with comparable levels of experience. As a result, female entrepreneurs typically start new businesses with smaller seed capital and are competitively disadvantaged relative to better-funded enterprises (Wheadon & Duval-Couetil, 2019; Avnimelech & Teubal, 2006; Robb & Coleman, 2014).

### 1.3.3. The politics of digital entrepreneurship

Ghana's digital economy, which I will discuss in-depth in chapter 2, is being championed by the current New Patriotic Party (NPP) government of Ghana as a key pillar of its 'Ghana Beyond Aid' economic agenda. As Ndemo and Weiss (2017) aptly note, "the creation, adoption and diffusion of digital technologies in society is in part contingent on the political environment in which it occurs" (337). The NPP government actively promotes the digital economy to bridge the gender gap in Ghana.



However, my interviews with the 21 female tech entrepreneurs, government officials and analysis of government policies highlighted a significant gap between government rhetoric and practice. Officially, Ghana has a National Gender Policy.<sup>22</sup> In my interviews with government officials, they made statements like “the overarching goal of the National Gender Policy is to mainstream gender equality concerns into the national development processes by improving the social, legal, civic, political, economic and socio-cultural conditions of the people of Ghana” (Interview with Priscilla Atansah).<sup>23</sup> The policy acknowledges that “these inequalities...are still deeply rooted in the social systems and manifest particularly in matters of access to justice, health, finance, education, security, politics, energy, agricultural practices, environmental management processes, among others” (National Gender Policy, 2015, vii).

To combat these gendered challenges, the government has supported initiatives such as the promotion of girl-child education, skills training for young women and free antenatal services for pregnant women. Parliament also passed the Domestic Violence Act of 2007 (Act 732). In Information, Communication and Technology (ICT), four hundred girls from fifty selected Junior High Schools based in four districts within the Brong-Ahafo region participated in a pilot ICT capacity building programme. In 2018, the ‘Girls in ICT’ programme claimed to have trained five hundred girls in digital entrepreneurship, digital skills and smart phone usage, and social media for marketing. However, many of the

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<sup>22</sup> The National Gender Policy identifies six key issues: (1) inequality in access to social protection by the marginalised, vulnerable and the poor; (2) inequalities in the burden of extreme poverty, education, skills, training gaps and excess maternal mortality; (3) unequal access to social and economic power and justice including lack of respect for and inadequate protection and promotion of human rights of women; (4) inequalities between women and men in sharing of power and decision making at all levels and in dealing with all kinds of conflicts and insecurities and threats on women; (5) inequality in macro-economic issues including trade, industry structures and productive resources; and (6) stereotyping and persistent discrimination against women that manifest in negative gender relations with severe implication for maternal health and mortality.

<sup>23</sup> Atansah is a Special Assistant to the Minister of Finance.

other programmes the government credits under its gender policy are not gender specific but are general pro-poor programmes e.g., free school uniforms, free exercise books, access to credit through the Livelihood Empowerment Against Poverty scheme, and the NPP government's flagship free senior high school programme.

The President of Ghana, Nana Akufo Addo, was criticised at the Women Deliver conference in Vancouver in 2019 when he stated “we are not seeing enough dynamism and activism on the part of [women]... who are seeking. I am talking about dynamism where it matters...electing people to Parliament, controlling political parties because they are the instruments by which our societies make decisions. We are talking about decisions, not wishes and hopes, we are talking about decisions that are going to make the difference.” Dr. Alaa Murabit, the United Nations (UN's) High Commissioner on Health Employment and Economic Growth called him to task for failing to recognise the structural barriers that disadvantage women and noted there are many qualified women in Ghana that need to be amplified by people in power such as the President. In response, the President's team on social media started a campaign called #AmplifiedbyNana highlighting five key appointments of women by the President including the Chief of Staff (first for a woman), Secretary to the Cabinet (first for a woman), the Chief Justice, the Attorney General, and the youngest Presidential Staffer. One of my interlocutors, Jemila Abdulai, responded on Twitter: “Really? Another hashtag for propaganda? All I want to know is – how will doors open further (beyond cabinet appointments)? What policies, programmes have you been working on as ‘gender champion’ and a ‘He for She’ decorated #Ghanaian President? Is that too much to ask?”

In some ways, the president is mirroring the general attitudes of the citizenry towards gender issues. The 2007 United Nations Educational Scientific and Cultural Organisation (UNESCO) Perception of Gender Equality survey in Ghana revealed that less than half of the population of Ghana viewed consideration of gender as a positive factor for development. In addition, 62.6% of the population agree that men have priority regarding employment and 78.3% of the population agree that men are better political leaders. However, 78.1% disagree that “university is more important for a boy than for a girl” suggesting that gender equality is perceived as a positive factor in the domain of education (UNESCO, 2007, 40). The survey suggests that Ghanaians see women as equally worthy of university education, but not as worthy of political office and jobs.

Taken together, this thesis offers a rich and nuanced perspective on digital entrepreneurship and gender in Ghana. The intersection of the various fields analysed here itself also constitutes a contribution that highlights the need for a nuanced analysis of the gendered social world in Ghana.

#### 1.4 Research sites

My research is primarily focused on Accra, which is the centre of Ghana’s digital economy and the site where all my interlocutors live and work. Accra is the capital of Ghana and covers an area of 225.67 square km with an estimated urban population of 4.2 million people as of 2020. Accra is the most populous and the most densely populated city in Ghana. Economic activities in the city are dominated by financial services, fishing, manufacturing, forestry, clothing, and chemicals, with tourism increasingly an important economic driver for the creative industry.<sup>24</sup>

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<sup>24</sup> See <https://census2021.statsghana.gov.gh/>



designated Accra as a gamma-level global city, defined as “world cities linking smaller regions or states into the world economy.”<sup>25</sup> As discussed earlier, the digital economy is socially embedded, but understanding it goes beyond the local context of Accra, because local flows in Accra feed back into global flows, and simultaneously global flows are changing Accra. Ghana’s female digital entrepreneurs are right in the mix of this phenomenon.

Accra has been growing rapidly with sprawling developments and spectacular spatial expansion (Grant, 2009, 4). The pictures below are taken of Airport, a high-end neighbourhood of Accra. The dates are approximately ten years apart and they reflect the extraordinary growth in urban development that the city has undergone recently.



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<sup>25</sup> See <https://www.lboro.ac.uk/gawc/world2020t.html> [Accessed January 27, 2021]



*Figure 1. 2 & 1.3: Accra's evolution in 10 years from 2000 to 2010 (Source: Yaw Pare)*

In Accra, I spent most of my time in middle-class and upper-class neighbourhoods, where my interlocutors lived and worked, such as East Legon, Cantonments, Labone, Airport, Osu and Dzorwulu. However, in line with the globalised nature of the tech ecosystem in Ghana, which I discuss in Chapter 2, I also attended conferences, followed entrepreneurs, and met venture capitalists focused on Africa in various cities around the world including Lagos, Cairo, Kigali, Harare, Nairobi, Johannesburg, London, Paris, Amsterdam, San Francisco, New York, Boston, Shanghai, Tokyo, and Sydney.

## 1.5 Fieldwork

In July 2016, I returned to Ghana to begin fieldwork after living in the United States for the prior decade and a half, although I had spent significant time in Ghana throughout that period, visiting every year, and spending as much as five months in some years. In many ways, I have always felt that I had one foot in the United States and another foot in

Ghana. I carried out my fieldwork for four and half years between July 2016 and December 2020.<sup>26</sup> I gathered data through a combination of 21 life history interviews, participant observation, archival research, and hundreds of semi-structured interviews. I enjoyed certain advantages during the research process, being a citizen of Ghana. I had grown up in Accra and I was familiar with the city; I could converse in Ghanaian Pidgin English<sup>27</sup> and could speak some of the local languages, with varying degrees of proficiency, including Twi, Hausa and Dagaare. All my interviews were in English, however, there were times we would converse in Twi or pidgin or use some phrases in those languages. I was also familiar with some of the local customs and practices. Thus, I brought a “special sensitivity” to the research process, and I did not have to encounter much “distrust or hostility” (Darkwah, 2002, 36).

I also had a unique status as an insider in the context of being well-known in the tech ecosystem in Accra. I was forced to reflect on this positionality when a friend who was also conducting research on Accra’s tech ecosystem, shared their struggles to gain access to the directors of some of the accelerators and incubators or the challenges with getting access to data from the government and other institutions. In helping this friend with introductions and access, I became acutely aware of my privilege. In 2006, I had co-founded Golden Palm Investments Corporation, which is now one of the leading venture capital firms in Ghana. Even though I am no longer involved in the day-to-day activities

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<sup>26</sup> I was a part-time PhD student and completed my PhD over 7 years compared to 4 years for full-time. This came with the advantage of a longer time horizon, which allowed me to observe long-term trends, such as firms fundraising through multiple rounds.

<sup>27</sup> Ghanaian Pidgin English is a variety of West African Pidgin English and an offshoot of Nigerian Pidgin English, introduced to Ghana in the 1920s (Huber, 1999, 4). There are two varieties, the “uneducated” pidgin, mostly associated with illiterate speakers, and the “educated” pidgin, mostly spoken by students and young people (often men), who use pidgin to express solidarity and camaraderie (Ibid). Pidgin has become common in Ghanaian pop culture, promoted by popular musicians like Wanlov, the Kubolor and Mensa (members of the band FOKN BOIS) who made an entire album and musical in pidgin.



of the firm, I had formed significant relationships in the ten-year period prior to starting fieldwork. I had also written an award-winning book, *Making Futures: Young Entrepreneurs in a Dynamic Africa* (Delle, 2019), which involved research and in-depth interviews with over 600 young entrepreneurs across 45 African countries, including 40 entrepreneurs in Ghana. This positionality gave me significant access to all the people and institutions I needed for my research. Anyone I needed to reach was typically one degree removed.

For the female tech entrepreneurs, I knew several of them already; we attended the same schools, churches and were part of the same social circles. For example, I attended the same primary school with Regina Honu (Christ the King International School); I attended the same secondary school with Betty Kumahor (Ghana International School); Farida Bedwei, Betty Kumahor and I are all members of the World Economic Forum of Young Global Leaders; Ethel Cofie's parents are close friends with my parents; Jemila Abdulai and I have collaborated on projects in the past; Miishe Addy and I are both members of the Harvard Club of Ghana; and the list goes on.

However, I also noticed that the insider status presented its own unique set of challenges. Because I was too familiar with the city and the tech ecosystem, I could easily miss or fail to document important information that I took for granted. I had to learn to develop an outsider's lens in thinking about my questions. Discussions with my supervisors and my research assistants were incredibly helpful as they would ask the "why" about things that I often took for granted. Of course, even as an insider, I am always sitting in a particular position from which I am also simultaneously an outsider. It was clear to me that when my interlocutors were aware that they were being observed and



interviewed, the interview became an opportunity for self-narrativisation and self-presentation. In many ways, my interlocutors felt deeply connected to the project in the sense that they were part of a shared agenda to counter the negative stories about Africa and project something positive instead. Thus, it sometimes felt awkward to try to escape this Afro-optimist frame to get into the underbelly of their challenges. Often the formal interviews were not enough to illuminate their experiences with sufficient breadth or richness. It was over long periods of time, after periods of participant observation, chats, coffees, lunches, dinners, and other interactions that the Afro-optimist performance dropped, and I would be brought into the intimate details about their lives.

Even beyond the research setting, I was made aware of the complexity of doing this research as a man. I enlisted the assistance of two women, Zelia and Hawa, who worked with me as research assistants. Zelia and Hawa were particularly helpful in raising questions related to women's experiences that were not as readily apparent to me as a man. I found that over time, however, my relationships with my interlocutors grew closer and as I spent time with them at their workplaces and in their homes, getting to know their families, and being helpful with advice and relationships, they opened up and would share freely with me. They would keep me abreast of their developments over WhatsApp and would invite me often to their homes for dinner. They would introduce me to other female entrepreneurs in their networks and were generally very helpful with my research process.

I started fieldwork by first trying to map out the institutional environment for tech entrepreneurship in Ghana through interviews with members of government agencies, NGOs, universities, trade associations, development agencies, entrepreneurship organisations, accelerators, incubators, and venture capital firms. I also conducted some

archival research with some government agencies such as the Registrar General's Department. Getting policy information from the government was difficult (in some cases it simply did not exist) and was subject to change, depending on which political party authored the policy and which political party was currently in power. I had to leverage my social networks to get the information I needed. For example, I wanted to know the government's official policy on gender, and I contacted the Ministry of Gender, Children and Social Protection. They sent me the country's National Gender Policy which was approved in 2015 by the National Democratic Congress (NDC) government in power at the time under the leadership of President John Mahama. However, in December 2016, Ghana went to the polls and elected a new government under the NPP. As one of my informants at the ministry later told me "forget this policy my brother, it will now change with the new government." After the election and the appointment of a new government, I had to re-do all the interviews with the new appointees, to ensure that my information would reflect the most up-to-date policies. One of my informants, who was serving as a Special Adviser to the Minister of Finance, told me bluntly, "ignore the policy statements and follow the money... the key to understanding government's priorities is in the budget."

The government agencies I interacted with included the Office of the President, the Office of the Vice President, the Ministry of Finance, the Ministry of Trade and Industry, the Ministry of Gender, Children and Social Protection, the National Board for Small Scale Industries (NBSSI), Ghana Revenue Authority (GRA), and the Registrar General (RG). I interacted with several development agencies including the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), CDC Group, United States Agency for International Development (USAID), and the Development Finance

Corporation (DFC). I spent time doing participant observation and interviews at several accelerators and incubators including the Meltwater Entrepreneurial School of Technology (MEST), Impact Hub, SBIncubator, Developers in Vogue (DIV) and Ashesi Venture Incubator. I also conducted online surveys of entrepreneurs who had used the services of these incubators and accelerators.

Through my network, I had access to the inner workings of several venture capital firms investing in Africa including Golden Palm Investments, 4DX Ventures, Ingressive Capital, Breyer Capital, SUNU Capital, Kepple Ventures, Raba Capital, and Musha Ventures. Apart from interviews, I also had access to internal records and memos on portfolio companies and companies that failed in obtaining investments from them. In addition, I closely tracked their investment processes, and I was able to sit in on investment meetings and follow the entire investment process from sourcing to funding. At the same time, I was also able to interview and interact with the entrepreneurs who applied for funding and to understand their processes and perspectives. This is the first example, to my knowledge, of research in Ghana with this level of insight of both the investors and the entrepreneurs' perspectives and interactions.

Most of my fieldwork, however, was focused on the lives of the 21 female technology entrepreneurs that I followed. I also interviewed 10 male technology entrepreneurs and 8 female entrepreneurs operating in non-technology sectors. While they do not feature prominently in the thesis, they were important in giving me comparative context. I initially conducted life history interviews with my interlocutors, often spanning 2-3 hours. All the formal interviews were conducted in English. Most of my interlocutors have had prior experience doing interviews for media and were accustomed

to interviews, with some of them even conscious of their public profiles. However, the more time I spent with them, the more the curtain dropped, and we engaged more naturally. I did several follow-up interviews and conducted participant observations at their workplaces and in their homes. I also met their families and colleagues and immersed myself in their social networks. At their homes, conversations were less formal, and while we would primarily speak in English, we would often mix in some Twi and pidgin. To better understand their lives and experiences, I attended tech events, workshops, pitch competitions and conferences with them. I joined various WhatsApp platforms including GH Tech-preneurs (a group of 252 stakeholders in the tech ecosystem including tech entrepreneurs, venture capitalists, policy advisors and government officials), Ghana FinTech Chamber (a similar group but focused exclusively on FinTech with 171 participants), and SBIncubator Community (a group hosted by Standard Bank's incubator programme with 238 participants), among others. These groups were important sources of information to understand the debates, trends and discussions that occur within the tech community.

During the last year of my fieldwork in 2020, the world encountered the Coronavirus Disease of 19 (COVID-19), the first global pandemic since the Spanish flu of 1918, which has affected over 257 million people globally and has resulted in the deaths of over 5.1 million people as of November 2021. In Ghana, the government instituted a lockdown for three weeks in late March 2020 and closed the airport and all borders for six months. During this period from March 2020 to September 2020, I continued to interact with my interlocutors, but I did so virtually via WhatsApp. As Staudacher-Preite and Kaiser-Grolimund (2016) have noted, WhatsApp can be a good tool to create intimacy

and imagined proximity, even if the researcher is not physically present, which is important in creating trust for ethnographic work (36). However, WhatsApp also presents some ethical questions related to the use of the data. Through using WhatsApp, interlocutors are more likely to misinterpret communication as friendly conversation and may not be aware that their chat statements will be data used in the research project (Ibid, 38). Even though all my interlocutors had signed informed consent forms, I mitigated this risk by frequently and explicitly mentioning that our WhatsApp conversations will be used as part of my research and obtaining their additional consent.

## 1.6 Overview of chapters

This thesis is organised in six main chapters that analyse the different aspects of the trajectories of female digital entrepreneurs as they navigate challenges to achieve success. Chapter 2 situates the wider history of the emergence of digital entrepreneurship in Ghana's economic history, which has always been a complex intertwining of state policy and intervention and the making of markets. I give an overview of the evolution of Ghana's economy from a state-led economy to a more market-based economy after structural adjustment to the emergence of the digital economy.<sup>28</sup> I argue that digital entrepreneurship has become a space for imagined and achieved social mobility and success, partly because of the state's concern with digitalising the Ghanaian economy.

In Chapter 3, I analyse the family life and class backgrounds of my interlocutors, which provide insights into the ways female entrepreneurs seek to navigate the economic

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<sup>28</sup> I acknowledge that in the 20<sup>th</sup> century, one of Ghana's key exports—cocoa—was grown very largely on the initiative of African farmers, who (according to Polly Hill) produced cocoa in response to price incentives. The state stepped into the marketing of cocoa and creamed off its share (the gap between the producer price paid by purchasing companies, and the market price), but the production remained very largely in the hands of individual farm owners. However, I still maintain that the economy was more state led compared to today because the state was controlling the cocoa industry and most of the industrial companies were state owned enterprises.

spaces of digital entrepreneurship. The diverse trajectories of the women in the chapter give us insight into the different cleavages and articulation of social, cultural, and economic capital inhabiting the digital entrepreneurship space. I argue that their stories help us make sense of the tension between class as a narrative and class as an experience of inequalities; it also allows us to better understand themes such as self-presentation, self-identification, and boundary work. I use Bourdieu's (1977) concepts of cultural, social, economic, and symbolic capital to understand the various ways that female technology entrepreneurs engage in mobilisation and conversion of capital as they start and scale their entrepreneurial ventures. I use the case studies of my interlocutors to make sense of the "conditions of possibility" (Liechty, 2012) that facilitate the amassing of assets, wealth, and privilege by understanding the lived experiences of my interlocutors. Their experiences help us to better understand what it takes for female tech entrepreneurs to achieve success in the digital economy.

Chapter 4 focuses on the experiences of e-commerce entrepreneurs, whom I call 'digital traders.' I appraise the relationship between gender and commerce, given that trade in Ghana is dominated by women. I also show how digital traders are navigating infrastructure challenges and offline relationships in Ghana. Through case studies, I showcase how digital traders are adapting local practices around *to-so* (quantity bargaining) in a digital context. These case studies illuminate the intersection of the business literature on e-commerce with the anthropological literature on market traders through the focus on the offline nature of digital trading. By connecting the e-commerce literature to existing anthropological studies on women traders in Ghana and to my ethnographic material, I contribute to the expanding research on digital entrepreneurship

and e-commerce, showing how female digital traders navigate the infrastructural challenges and the idiosyncratic digital landscape in Ghana to sell goods and services online.

In Chapter 5, I examine the technology incubation scene in Ghana, mapping out the tech entrepreneurial ecosystem with respect to tech hubs, accelerators and incubators and exploring the gendering of these spaces and their roles in the success of digital entrepreneurs. This chapter draws on my ethnographic research as well as results from an online survey I conducted among incubatees in Accra. It brings together the business literature on entrepreneurship, entrepreneurial ecosystems, and business incubators, which has gaps with respect to gender and in its coverage of Africa. It also bridges the gaps and limitations of the business literature by engaging with feminist literature on technology and capitalism and incorporating insights from my ethnographic field research in Ghana. It suggests ways we can better understand capitalism and the making of the digital economy in Ghana through a feminist examination of these growth enabling systems. I suggest that adopting a gender-conscious approach could improve the outcomes for women. Even though there is still a long way to go to reach gender parity in outcomes, Ghana's gendered outcomes are significantly better than the global average, and thus Ghana has a lot to teach Silicon Valley and the other global centres of technology entrepreneurship.

In Chapter 6, I review the literature on venture capital and the gender gap and identify two key issues: the methodological problems and geographic limitations of prior studies and the extrapolation of their findings to a global level; and the relative importance and the inter-relation of what are currently described as "supply side" and "demand side"

reasons for a gender gap in investment. To better understand how female technology entrepreneurs raise equity capital in Ghana, I analyse the venture capital landscape in Ghana and across the African continent. I work through two case studies of investment companies in Ghana, setting out my research into their investment practices, screening processes and datasets. I find that the supply side and demand side are not cleanly separated but are co-constructed: how entrepreneurs perceive the investment companies influence the ways in which they engage with the investment companies; in turn, the behaviours, techniques, decision-making, and social practices of the investment companies, influence the perceptions that entrepreneurs have of them. To my knowledge, my research on the gendered dimensions of VC in Ghana's digital economy is unique.

In Chapter 7, I focus on motherhood and marriage. My interlocutors, especially the married ones with children, in building and scaling their enterprises are confronted with prevailing local socio-cultural norms and expectations around marriage and motherhood that create conflict. They are faced with lots of expectations about how they need to perform and act. These societal expectations are embedded in certain ideas about women which are influenced by religion and ethnic beliefs. My research is focused on understanding how female tech entrepreneurs navigate and attempt to fulfil expectations about women and motherhood as well as expectations of being a successful entrepreneur. In this chapter, I analyse the tensions between being a rockstar entrepreneur and a wife/mother, using case studies to examine the various strategies that my interlocutors deploy to manage work-family conflict.<sup>29</sup> This chapter examines the importance of socio-cultural factors, especially religion, in understanding work-family

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<sup>29</sup> Work–family conflict is defined as “a form of inter-role conflict arising because pressures emanating from one role are incompatible with those from another role” (Shelton, 2006, 288).



conflicts. I also importantly modify Hakim's (2000) preference theory to extend it to partner selection and show how my interlocutors are negotiating work-family conflicts prior to marriage and will only agree to marry partners who support their lifestyle. Thus, this chapter contributes to the globalisation of the extant literature on work-family conflict, which has little coverage of Africa.

Taken together, these chapters offer an original and timely insight into the making of female technology entrepreneurs and the possibilities (and constraints) of success in Ghana's digital economy.

## Chapter 2: Ghana's Digital Economy

### 2.1 Introduction

In November 2017, I co-hosted the 2017 edition of the Africa Global Business Forum (AGBF) in Dubai. The AGBF, organised by the Dubai Chamber of Commerce and Industry, was held under the patronage of Sheikh Mohammed bin Rashid Al Maktoum, the Prime Minister of the United Arab Emirates, and the Ruler of Dubai. It sought to explore opportunities to improve economic ties between the Middle East and Africa. The forum featured several sessions involving Heads of State, Ministers, policymakers, Chief Executive Officers (CEOs), entrepreneurs, and other stakeholders. At the Forum, I moderated a discussion and later spent personal time speaking with Ghana's Vice

President, Dr. Mahamudu Bawumia on his government's focus on building a digital economy. Dr. Bawumia has become the face of the government's digital strategy:

A digitised, formal economy is a crucial pillar of the Ghana Beyond Aid agenda... with digitisation, we are introducing new and more efficient ways of doing things... [we are] building a new efficient Ghana under the Ghana Beyond Aid vision, which is firmly anchored in leveraging technology for accelerated development.

Interestingly, Dr. Bawumia positioned digitisation as a key tool in his government's fight against corruption:

In a well-functioning society, citizens do not need to know someone or pay someone to get a passport, driving license and even access to water and electricity. We cannot build a fair and equitable society that runs on engines of bribes, 'goro boys' and 'land guards.' The ongoing mass registration for the national ID card, popularly known as the Ghana card, will have a major impact because it will serve as a central database with linkages to the Ghana Revenue Authority, courts, the police, the passport office, the National Health Insurance, DVLA and more...We have implemented a Digital Property Addressing to provide a digital address to every location in Ghana. Digital driver's licenses and digital vehicle registration have also been introduced. Mobile money payments interoperability has been implemented...the digitisation of the land registry is in progress...passport applications are now online...renewal of National Health Insurance Scheme (NHIS) registration via mobile phone has been a phenomenal innovation with an average of 70,000 renewals every week...we believe that now is the time to take a critical look at our [ICT policy], identify gaps and recommend changes required to provide the right framework to harness Ghana's digital economy and also nurture our local ICT industry.

There is some truth to this. For example, in the past, without paying a facilitation fee, it could take several months to obtain a passport renewal. With the new digitised passport application system, it takes weeks. However, some of the entrepreneurs I met cynically believe that the government is just using the digital economy as a tool of state capture. One of them remarked "if the government says it's going to build a hospital and they claim they spent \$100 million, it's easy to catch them...but when they claim they are

spending all these millions and billions on tech what's there to see? It's the new, innovative way to steal." To the entrepreneur's point, during my fieldwork in Ghana in 2018, there was a huge scandal in the Ghanaian media over the awarding of an \$89 million contract by the government to KelniGVG, a tech company, to design and implement a common platform for traffic monitoring, revenue assurance and mobile money monitoring. One of the leading policy think-tanks, IMANI, assailed the contract as a clear waste of public resources. Professor Gyimah Boadi, the former director of Ghana's Centre for Democratic Development, believes that while digitalisation helps fight against petty corruption as the Vice President noted in his remarks, "Ghana's problems with corruption are more at the grand level and you don't sort these out with a technical fix" (cited in Pilling, 2019).



*Figure 2. 1: Picture of Ghana's Vice-President, Dr. Mahamudu Bawumia and the author*

Throughout this thesis, I examine the various ways in which my female digital entrepreneurs' individual visions and practices map onto (and depart from) the overarching digital imaginaries, which are hybrids of global and local discourses, experiences, and values. In this chapter, I present Ghana's digital economy as a dynamic and contested space of digital imaginaries which interact with the visions, aspirations and experiences of the government, its donors and international financial institutions, and Accra-based tech entrepreneurs. I focus on three important themes: the digital and the macro; venture capital; and the state. I first set the context of the digital and the macro: the digital economy is a beneficiary of Ghana's macroeconomic environment, which since structural adjustment has been focused on attracting global flows of capital and positioning Accra as a destination for foreign direct investment.

Foreign capital becomes an important pillar of Ghana's venture capital funding ecosystem, which in turn is a key driver of the digital economy. As Grant (2009) noted in his research in Accra, international organisations and the Ghanaian government and its institutions conspire together to enact policies that will attract transnational capital. This liberalisation policy environment lubricates the global flows of capital and Accra becomes a "theatre of accumulation and circulation of capital whereby foreign direct investment, new foreign companies, and international transfer of funds (remittances and savings of the diaspora now allowed under a financial liberalisation regime) become ever more present." (Ibid, 9). This liberalisation policy environment privileges external actors and foreign capital in the local economy, as exemplified by the establishment of agencies such as the Ghana Investment Promotion Centre and the Free Zones Board and their key roles

in the formulation of policy (Ibid). Cities are increasingly becoming important economic and political actors (O’Neil, 2019; Harrison, 2012) where inequalities are often harshest and economic growth often fails to trickle down to the lowest socio-economic groups (Lee et al., 2016).

Finally, I look at the ways in which the digital has become a medium for the state to represent itself as modern and contemporary as well as a vehicle for the government’s economic empowerment agenda. As Dr. Bawumia put it, “we have implemented a major digitalisation programme to modernise and formalise the economy.” The Ghanaian government’s discourse presents the digital economy as a panacea for poverty and growth, and a way for the state to not just modernise (through digitising all its services and data) but also a means to grow state revenues through taxation and to exert control over digital firms through regulation. I analyse this by looking at the state’s role in three core categories: regulation, infrastructure, and economic empowerment.

Taken together, this chapter delineates the field in which my interlocutors operate, where they must contend with both the digital imaginary and the government’s key role in enabling and limiting the growth of Ghana’s nascent digital economy.

## 2.2 The Digital as Imaginary

Dr. Bawumia spoke passionately about harnessing Ghana’s digital economy. His government (and past governments), several international organisations (including the World Bank and the International Monetary Fund [IMF]) and policymakers have championed the creation and growth of the digital economy as a vehicle for economic development. The discourse around the digital economy has often been framed in terms of inclusivity and as a means of reducing global inequality. This global movement to

reduce inequalities by leveraging digital technologies is part of a broader neoliberal movement (Wahome and Graham, 2020) that envisions a global network of cosmopolitan centres and the creation of transnational elites (Mbembe, 2016). However, as Wahome and Graham (2020) argue, “even these ideas about inclusion are not universal or neutral, they are linked to situated and particular ideological perspectives and interests” (1124).

Africa has often been cast as a recipient and not a producer of technological innovation and knowledge (Massey, 2002; Mavhunga, 2017). The design and development of digital technologies have been associated with Silicon Valley (Suchman, 2011; Saxenian, 1996; Avle & Lindtner, 2016) and the globalised practices, language and forms of digital entrepreneurship are expected to replicate the models in Silicon Valley, which has become the digital economy’s representative imaginary (Avle et al., 2017). Silicon Valley has long been the global standard for technological innovation and growth (Engel, 2015; Saxenian, 1996). In Africa, the impact of Silicon Valleys’ influence on the digital economy imaginary is reflected in the development of monikers for local tech ecosystems such as Nairobi’s “Silicon Savannah”. Many digital entrepreneurs in Ghana are inspired by examples in Silicon Valley and seek to emulate these models. For example, in reading the quarterly shareholder letters of Gregory Rockson, the CEO of mPharma, a digital health start-up in Accra, I noticed that almost every letter referenced examples from Silicon Valley companies like Amazon. His Q1 2021 letter stated “Bloom [mPharma’s proprietary operating software], is to mPharma what AWS was to Amazon.” The reference point often centres Silicon Valley.

There is tremendous appeal to the digital imaginary. As Friederici et al. (2020) argue, “digital technologies offer an imaginary within which there is a pathway for the

African continent to overcome and overturn its historically peripheral global position and its history of colonial extraction, exploitation and denigration” (6). In this imaginary, digital entrepreneurship becomes a key driver of this modern African economy. International organisations, foundations, donors, policymakers, venture capitalists, government officials and the media (both local and global) have all conspired to promote this narrative of the digital entrepreneur as a panacea for Africa’s economic transformation.

The World Bank has championed the digital economy as a key to improve Africa’s economic productivity. The World Bank argues that the digital economy can create operating leverage for firms and improve economies of scale, especially for online services, as the marginal cost of an additional product or service is infinitesimal. They contend that the digital economy may also more easily match buyers and sellers in a marketplace and can provide solutions to problems such as asymmetric information between buyers and sellers. They also highlight the potential to strengthen trust by enabling decentralised forms of trust, such as blockchain or cryptocurrency (World Bank, 2019).

The Ghanaian government promotes this imaginary of the digital as an economic panacea. I participated in a panel sponsored by the MasterCard Foundation on digital entrepreneurship and a fellow panellist, Mr. Oliver Boachie, the Special Advisor to Ghana’s Minister of Environment, Science, Technology, and Innovation, remarked that “with access to the Internet, entrepreneurs are now global and can do business globally with the push of a button,” to which I responded, “it’s a bit more complicated than that!” For the entrepreneurs, too, the digital is a space in which they can enact their aspirations and ride on the wave of this Afro-optimist narrative and the “sexiness” of tech to raise

capital. As one entrepreneur joked “these days, every business wants to market itself as a tech start-up, soon the tomato seller will make an app and also raise VC money.”

However, there is also widespread recognition of the challenges inherent in the digital economy. Even the World Bank in its advocacy for digitisation acknowledges that the digital economy can result in inclusive growth only if combined with the enhancement of digital skills and literacy, expansion of digital identity schemes, digital financial inclusion and digital support for start-ups and existing enterprises. They note that in many places across Africa “too few citizens have digital Identifications (IDs) or transaction accounts, locking them out of access to critical public services, financial inclusion, and markets” (The World Bank, 2019). In addition, digital start-ups struggle to attract funding and the adoption of digital technologies by traditional enterprises has been slow. There is a deficit in digital skills, and inadequate policy and regulatory frameworks which hamper the growth and development of the African digital economy (Ibid). However, the digital economy also introduces new challenges including a growing digital divide, cyber security threats, privacy attacks, and market disruptions.<sup>30</sup> Another key area of concern has been the creation of significant job losses due to increases in automation. While the International Labour Organisation (ILO) found that the adoption of automation does not seem to have created a significant increase in joblessness (ILO, 2018), some scholars have argued that automation is one of the main drivers of the recent increases in social inequality (Rotman, 2014). There is also considerable scepticism about the touted benefits of the digital economy among many entrepreneurs I met in Ghana, one of whom

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<sup>30</sup> For example, Cambridge Analytica is alleged to have interfered in Nigeria’s elections in 2007 and 2015 (Reuters, 2018).



shared, “this thing kraa e be hype, I no de base sef, I jus de watch my front.”<sup>31</sup>

The digital imaginary and the discourse around it in Ghana are deeply linked to the country’s macro-economy because it influences the flow of capital into Ghana. I analyse this connection between the digital economy and the macro-economy in the next section.

### 2.3 The Digital and the Macro

In 2016, the global digital economy was estimated at \$11.5 trillion, equivalent to 15.5% of global Gross Domestic Product (GDP) and forecasted to reach 25% of global GDP by 2025 (Huawei and Oxford Economics, 2016). In Africa, the digital economy is forecasted to grow to over \$300 billion by 2025 (McKinsey, 2013). The macro shapes the digital economy and is critical because it enables the entry of global firms who are attracted to Accra in the wake of improved macro-economic stability post Structural Adjustment Programme (SAP). Macro-economic stability is critical for global investors who often invest US dollars in local currency denominated assets and so are exposed to currency fluctuations and foreign exchange risk.<sup>32</sup> Therefore, global investors are extremely sensitive to macro-economic factors in foreign countries where they are considering investments. This also means that global investors will only focus on hyper-growth industries to help mitigate some of the macro-economic risks. This has implications for what (and who) gets funded (see Chapter 6).

Ghana has long been a destination for global capital since structural adjustment and the digital economy has become a beneficiary of this historical phenomenon. The

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<sup>31</sup> Translates to “this thing is all hype, so I don’t pay attention to it, and I just focus on my work”

<sup>32</sup> To illustrate, an investor who deployed \$1 million when the USD-GHS rate was 3.0 deployed the equivalent of GHS 3 million in local currency. To get the capital back in USD in 2021, that same investor would need to earn GHS 6 million in local currency. Thus, the local investment would need to double in value in local currency to get the same invested capital in US dollars.

Government of Ghana has been making efforts and investments in trying to position Ghana as a regional hub for digital services. The government has pledged to put digital economic transformation at the centre of its 'Ghana Beyond Aid' agenda. The government is developing a digital strategy and an implementation plan to establish Ghana as the leader in ICT innovation in Sub-Saharan Africa by 2023.

The current NPP government's stated strategy is to transform the Ghanaian economy to achieve inclusive and sustainable growth, with the private sector as the key driver of economic growth. In the words of Ghana's President, the aim is to "build the most business-friendly economy in Africa" and foster the competitiveness of Ghanaian firms (World Bank, 2018g). To achieve this, the government has committed to "reforming the energy sector, improving trade facilitation and the business environment, investing in infrastructure, and diversifying beyond primary products (hydrocarbons, gold, and cocoa)" (ibid). To understand Ghana's digital economy, within which my interlocutors operate, it is important to first understand the evolution and the state of Ghana's economy. Moreover, Ghana's economic liberalisation policies, championed by the government and related to facilitating the growth of a digital economy, must be historicised, starting with the country's adoption of structural adjustment. This chapter gives a historical overview of Ghana's economic evolution, starting with structural adjustment.

### 2.3.1 Structural Adjustment in Ghana

Ghana was among the first group of African countries to adopt a SAP (Darkwah, 2002, 55). By 1995, 35 African countries had adopted the structural adjustment programme (Ibid). Originally marketed as a short-term macro-economic solution, Darkwah argues that "it is quite clear that structural adjustment has come to stay as a

development agenda for both Africa and the rest of the developing world.” (Ibid). Under President Jerry John Rawlings, who was the military head of state at the time, Ghana formally adopted structural adjustment in 1983. At that time, Ghana’s economy was deteriorating, exacerbated by a drought and the expulsion of 1 million Ghanaians from Nigeria. The SAP was a condition precedent for the disbursement of an IMF/World Bank loan, which Ghana badly needed to revive its economy (Ocuquaye, 1995, 260). Even though Ghana had experienced IMF stabilisation policies in the past under former heads of states Ankrah, Busia, and Akuffo, none of these earlier attempts were as comprehensive and institutionalised as that of the Rawlings’ regime (Darkwah, 2002, 56). Jeong (1995) notes that Ghana was the only African country that met all the conditions and prescriptions of the IMF/World Bank without interruption since it adopted SAP (99). As Brydon and Legge (1996) note the government of Ghana followed all the IMF prescriptions with deregulated currency, liberalised trade, slimmed down state-owned enterprises and strengthened bureaucracies; in terms of compliance, Ghana has been a model patient. While the SAP has been credited with the reversal of Ghana’s trend of negative GDP growth, there are mixed assessments about its overall impact.

The stabilisation programme comprised of both demand-side and supply-side adjustments including elimination of price controls, fiscal austerity, currency devaluations, cuts in government spending, retrenchment of state employees, removal of subsidies and imposition of user fees for government services. The adjustment policies also included the liberalisation of the economy through policies that sought to attract foreign direct investment, deregulation of imports to promote free trade, and the privatisation of state-owned enterprises (Ibid, 57). SAP was implemented in two phases, the Economic Reform

Programme I (ERP I) from 1983 to 1986, and a second phase, Economic Reform Programme II (ERP II) from 1987 to 1989.

Darkwah notes that these SAPs had a gendered impact on the populace. “In both the formal and informal sectors, women have borne the brunt of its negative impact. Some of those initially employed in the formal sector have lost jobs and income and have had to devise new ways of making ends meet. For the majority who are engaged in low input, low profit economic endeavours in the informal sector, adjustment policies have simply side-lined their efforts. As social services such as care for the sick initially provided by the state for next to nothing has increasingly become privatised, women have taken on increased work responsibilities in the domestic arena caring for the sick in their households as and when necessary” (2002, 63). She also observes that structural adjustment created significant economic opportunities for female transnational traders because the government enacted economic policies such as the removal of price and import controls, which facilitated trade in global consumer goods. However, Darkwah points out that government efforts also hampered women’s abilities to fully benefit from these policies, and the female traders “therefore resort to a number of mechanisms to enable them partake as fully as possible in the benefits that globalisation provides” (2002, 64). In Ghana, the state embarked on a retrenchment programme to reduce public sector employment by 15% (Boateng, 2001, 24). By the time the retrenchment programme was completed, women who represented only 21% of civil service employees, accounted for a disproportionate 35% of the retrenched public sector employees (Haddad et al., 1995, 892). In addition, only 40 percent of those retrenched had received their benefits (World Bank, 1993). Most of the women who were retrenched ended up in the informal sector

(Darkwah, 2002, 59).

Overall, the structural adjustment programme in Ghana had a mixed record (Rimmer, 1992). In its first five years of implementation, the Ghanaian economy expanded by 6% a year and Ghana's runaway inflation fell drastically from 142 % to 18% (Parfitt, 1995, 2). However, structural adjustment had a very gloomy impact on the local manufacturing industry. Despite currency devaluations, tax cuts and other policy measures to promote FDI, the manufacturing sector did not record any significant investment or growth.

### 2.3.2 Post-structural adjustment (1989 – Present)

The 1990s ushered in a change in the approach to development by the international financial institutions. Even though neo-liberalism continued to dominate the practice of international development, structural adjustment was replaced with Comprehensive Development Frameworks (CDF), through which national governments work collaboratively with the international financial institutions to develop economic policies. In addition, the international financial institutions began to emphasise the importance of poverty reduction as part of their long-standing strategies to achieve economic growth. In addition, there was a lot of protests and activism around the high debt levels in developing countries. This, combined with the reckoning of those very same institutions that pushed for SAPs, resulted in a shift in policies (Abrahamsen, 2000). This eventually led to the Heavily Indebted Poor Countries (HIPC) initiative, which reduced debt balances, with the savings from loan payments being allocated towards poverty reduction initiatives. Ghana joined the HIPC initiative at the end of 2001 and exited in 2004 after implementing most of the conditions which included developing and

implementing a poverty reduction strategy through a broad-based participatory process in the country and investing the debt savings in social spending on health, education, and other social services (Asiama et al., 2014). Ghana's macroeconomic management improved significantly since 2001, in terms of improvement in inflation, and a lower rate of currency depreciation. The Bank of Ghana in 2007 implemented an inflation targeting regime under the Bank of Ghana Act, 2002 (Act 612) with a clear mandate for the central bank to target single-digit inflation as well as maintain foreign exchange rate stability (Aryeetey & Kanbur, 2006, 3; Wilson, 2020, 2).

During these transformations, in 2010, Ghana started commercial production of oil and officially became a 'petro state.' Oil contributes 10% of its GDP, and the oil industry has been a major catalyst for foreign direct investments, contributing \$2.27 billion in 2010 alone, an amount which was 19 times greater than the average annual FDI in Ghana between 2000 and 2005, prior to the discovery of oil (Obeng-Odoom, 2015, 42). Between 2005 and 2012, the Ghanaian economy expanded by a rate of 7.7 percent per year on average, with an annual job creation rate of 4.0 percent, translating to a 0.5 percent increase in job growth for every one percent increase in economic growth. Ghana's economic growth has largely been driven by its commodity exports (principally cocoa and gold which experienced a tripling of pricing between 2000 and 2010) and the commercial production of oil starting in 2011. However, GDP growth rates dropped between 2012 and 2016, averaging 5.6 percent, but grew to 8.5 percent in 2017, and then slowed a bit to an average of 6.4 per cent in 2018 and 2019, before crashing to 0% in 2020 due to COVID-19 (The World Bank, 2019). Ghana's economic growth rates from 2017 – 2019 compared

favourably to the Economic Community of West African States (ECOWAS) averages of 2.8%, 3.4% and 3.8% respectively (Wilson, 2020, 12).

Despite its new oil wealth and its improved macroeconomic management, Ghana faced significant macroeconomic challenges in the wake of the global financial crisis, exposing its vulnerability to the global economy. It was forced to apply for the IMF's Extended Credit Facility intervention which lasted until April 2019 (Ibid, 3). Ghana's dependence on commodities has resulted in volatile and non-inclusive growth as Ghana's impressive GDP growth rates have not translated into shared economic prosperity. The World Bank Systematic Country Diagnostic (SCD) for the country (World Bank, 2017), showed that Ghana's highest decline in poverty, 2 percent a year, occurred during 1991–1998. The annual reduction in poverty rate declined to 1.4 percent in 1998-2005, and 1.1 percent in 2005-2012. Between 2012 and 2016, the poverty rate declined by only 0.2 percent per year and stood at 23.4 percent in 2016 (The World Bank, 2019).<sup>33</sup> This data is an indictment of the various Ghanaian governments' rhetoric on the inclusivity of their economic policies. It also suggests that we must adopt a similar scepticism around the government's rhetoric on the digital economy, subjecting it to scrutiny and making a meticulous assessment of its alleged impact.

In Ghana, the economy is led by the services sector, with ICT contributing \$1.7 billion, or 3.6% of GDP (The World Bank, 2019, 18). ICT has experienced significant growth and has been one of the best performing sectors in Ghana's economy. The World

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<sup>33</sup> Many scholars have critiqued economic growth that is not inclusive (Benner & Pastor, 2015; Summers & Balls, 2015; Cavanaugh & Breau, 2017). However, other scholars like Neil Lee (2019) have called for caution, arguing that “its fuzziness makes [inclusive growth] hard to operationalise; it remains unclear what works in achieving it; and it reflects an overconfidence in the ability of subnational governments to shape their local economies. This leads to concerns it is simply a placebo...doing little except make policy-makers feel better about themselves” (429).

Bank attributes this growth to “a competitive market structure, an improved international connectivity, an increase in private sector investment and a reduction in telecommunications prices” which “has been instrumental in fuelling innovation and investments in the broader ICT sector” (Ibid). This growth is not unique to Ghana, however, as digital economies globally are growing by an average of 15 to 25 percent a year (Sabbagh et al., 2013).

Yet despite the impressive growth, Ghana’s tech ecosystem is still emerging (Avle, 2014). The firms in the tech sector are involved in software, hardware, and technology-enabled services (Ibid). Most of these firms are small (5-19 employees) or medium sized (20-99 employees) and are privately held companies (Ibid). The larger firms tend to be telcos or business process outsourcing (BPO) services firms (Ibid). The ICT sector is the core of the digital economy and impacts both private sector and the public sector. Ghana’s ICT sector almost doubled from \$0.9 billion in 2014 to \$1.7 billion in 2017 (GSS, 2017).

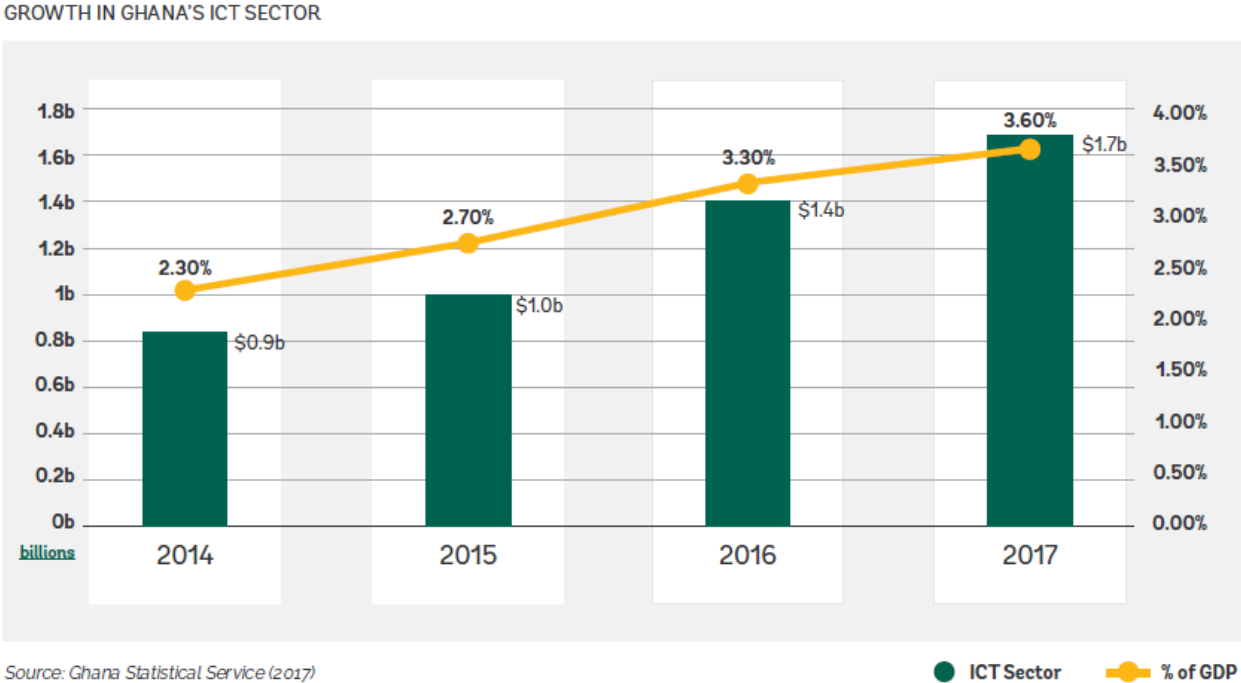


Figure 2. 2: Progress of Ghana’s ICT sector and GDP (Source: GSS, 2017)



In Ghana, the ICT sector is dominated by telecommunications services. The telecommunications sector remains one of the most liberalised industries in Ghana, with five competing firms serving a population of 30 million people, 1 telecommunication company ('telco') per 6 million people on average. This metric compares favourably in the ECOWAS region, where the largest economy, Nigeria, has four telcos that serve its population of almost 200 million, averaging 1 telco per 50 million people. Mobile subscriptions in Ghana are already more than 130% (NCA, 2016).

The Integrated Business Establishment Survey for 2014 revealed some important insights for Ghana's ICT sector (GSS, 2015):

- There were 4,153 ICT enterprises in Ghana, 71% of which had been launched within one year of the survey.
- ICT activity is concentrated in Ghana's two largest regions (by population): 42.4% of all ICT companies are in Greater Accra and 20.7% are in the Ashanti Region.
- There are 39,506 people who work in ICT, 70% in Accra and 10% in Ashanti.
- Telecommunications account for 45% of all ICT employees.

These statistics reinforce Accra's position as the dominant centre for ICT in Ghana, which is why I focused my research on the city.

Macro-economic stability creates a conducive environment for capital to flow into Ghana. This helps attract venture capital dollars, which are critical for funding start-ups in the digital economy. I interrogate this in the next section because financial capital is very important for the growth of tech start-ups, which generally are not profitable in the early stages and so require equity capital to fund their operations. The peculiarities of Ghana's

venture capital landscape will help explain some of the challenges in the digital economy, especially around access to financing.<sup>34</sup>

## 2.4 The venture capital (VC) landscape

VC is an important enabler of the digital economy. Earlier in this chapter, I discussed Ghana's economic trajectory over the past four decades, its relationship with northern donors and international financial institutions, policy frameworks and directions. In line with the liberalisation economic agenda, venture capital has been prevalent in Ghana since the early 1990s when USAID and the CDC sponsored the first venture capital fund in the country (Divakaran et al., 2018). They set up two companies, the Ghana Venture Capital Fund (GVCF) and the Venture Fund Management Company (VFMC) which started operations in November 1992. GVCF was set up as a ten-year local currency fund with capital of approximately \$6 million with the mandate to invest between \$100,000 and \$500,000 in each investee company (Ibid). In 2004, Ghana enacted the Venture Capital Trust Fund Act 680 which created an agency, the Venture Capital Trust Fund (VCTF) under the Ministry of Finance funded by a 25% levy from the National Reconstruction Levy which is imposed on financial institutions. VCTF was designed to seed a domestic VC ecosystem by providing the anchor funding to venture capital funds; in effect, it was operating as a fund of funds. It began its operations in 2006 with \$22.4 million in initial funding. In 2009, it created a subsidiary \$1 million angel fund to invest in the early-stage entrepreneurs. This fund was later dissolved. Since inception, VCTF has

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<sup>34</sup> In chapter 6, I will focus more in-depth on the gender gap in venture capital.

invested \$17 million in five local VC funds which have in turn invested in about 50 portfolio companies (Ibid).

VCTF was also instrumental in creating the Ghana Alternative Market (GAX) in 2013, an alternate listing on the Ghana Stock Exchange that is designed for high growth start-ups and small and medium enterprises (SMEs). One of VCTF's portfolio company, Samba Foods, was listed on the GAX in early 2015, though it has underperformed and lost almost half of its value at listing. VCTF has also been involved in lobbying for significant policy changes including the liberalisation of pension regulations in which pension funds can now invest up to 10% of their capital in alternative assets, which include venture capital. VCTF has faced many challenges. The National Reconstruction Levy which funded VCTF was repealed leaving VCTF with no real budget, which has hampered the growth of Ghana's domestic VC industry (Ibid). Further, most of the domestic funds that were seeded by VCTF have performed poorly. Only one of the funds that received funding from VCTF, Oasis Capital, has achieved great success. Oasis Capital went on to raise a second fund in 2020 which it capitalised at \$50 million, marking the largest fundraise by a local venture capital firm at the time (Ibid).

Currently, there are three key types of private equity (PE) or VC funds either active or operating in Ghana, with most of the deals in the PE/VC ecosystem coming from regional and pan-African funds investing in Ghana, rather than the local Ghanaian funds (that only invest in Ghana). The first category is local Venture Capital Trust Fund (VCTF)-backed funds, with local fund managers, capitalised by VCTF and mainly Ghanaian financial institutions, which I described above. These funds invest less than \$ 1 million in Ghanaian start-ups. The second category is regional funds, with a focus on ECOWAS,

but sometimes with country-specific focus on Ghana and Côte d'Ivoire. These funds typically have a ticket size of \$1- \$5 million. The third category is Pan African or global funds, with sometimes an explicit allocation or strategy to invest in Ghana (for example, Helios, ECP, Abraaj). These funds are typically backed by DFIs and institutional investors. They sometimes have offices in Ghana. Ticket sizes for investments are over \$20 million. (Ibid). This means that for tech entrepreneurs seeking funding, there are already multiple challenges: (1) both local funds and regional funds do not typically invest in technology companies; (2) Pan-African / global funds write ticket sizes that are too big for most early-stage tech funding rounds.

The VC landscape in Africa has evolved considerably over the last two decades and has simultaneously attracted international investment as well as spurring the development of local VC firms (African Private Equity and Venture Capital Association [AVCA], 2020). AVCA reports that 'private equity' (PE) and VC funding in Africa has developed progressively, buoyed by [a] favourable economic outlook, the magnitude of the market, the growing middle-class consumer base and the fact that Africa is [theoretically] home to the world's largest free trade area."<sup>35</sup> The number of VC deals in Africa has increased steadily since 2014, growing at a compounded annual growth rate of 15% whereas the value of the deals has grown exponentially from \$0.4 billion in 2014 to \$1.4 billion in 2019, representing a compounded annual growth rate of 28% (AVCA, 2020). Apart from multi-regional investments, West Africa leads the pack with median check size of \$3 million (Ibid). The charts below show the key highlights of the AVCA

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<sup>35</sup> While venture capital is technically a sub-set of private equity (investing in non-listed companies), in practice, venture capital refers to investing in start-ups and early-stage companies, whereas private equity refers to later stage / mature companies.

2020 Report, which show a doubling of the volume of VC deals from 2014 to 2019 and an increase in deal value of 3.5x over that same period. It also shows the dominance of five countries: South Africa, Nigeria, Kenya, Egypt, and Ghana, which represent over 60% of all deal volume in Africa.

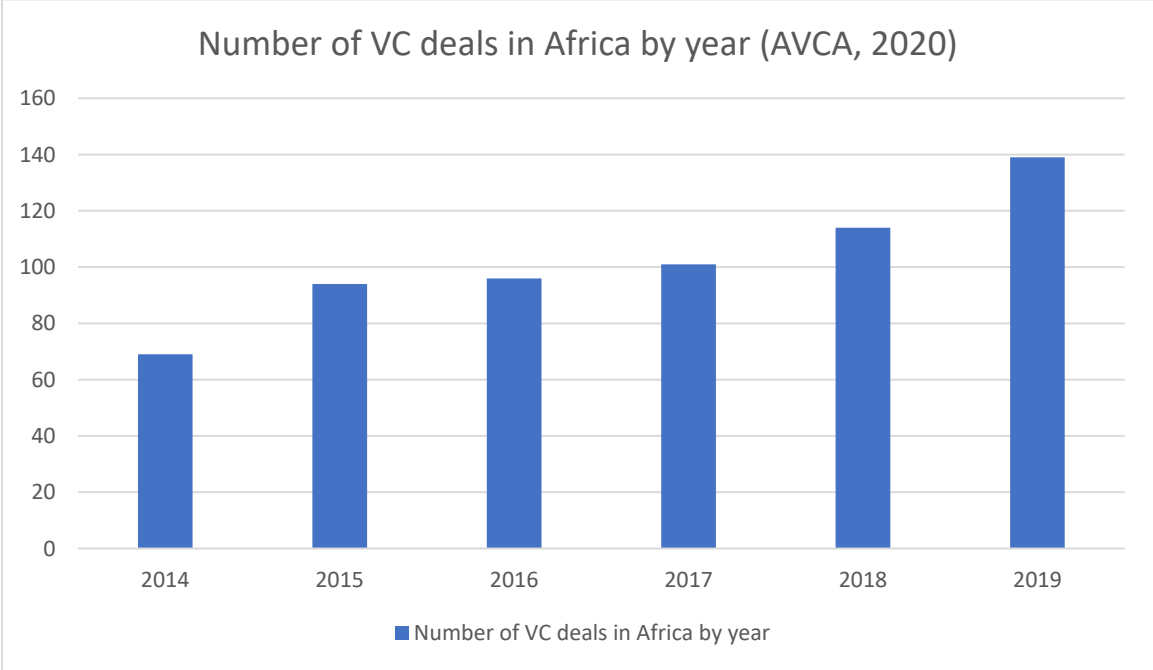


Figure 2. 3: Number of VC deals in Africa by year (Source: AVCA, 2020)

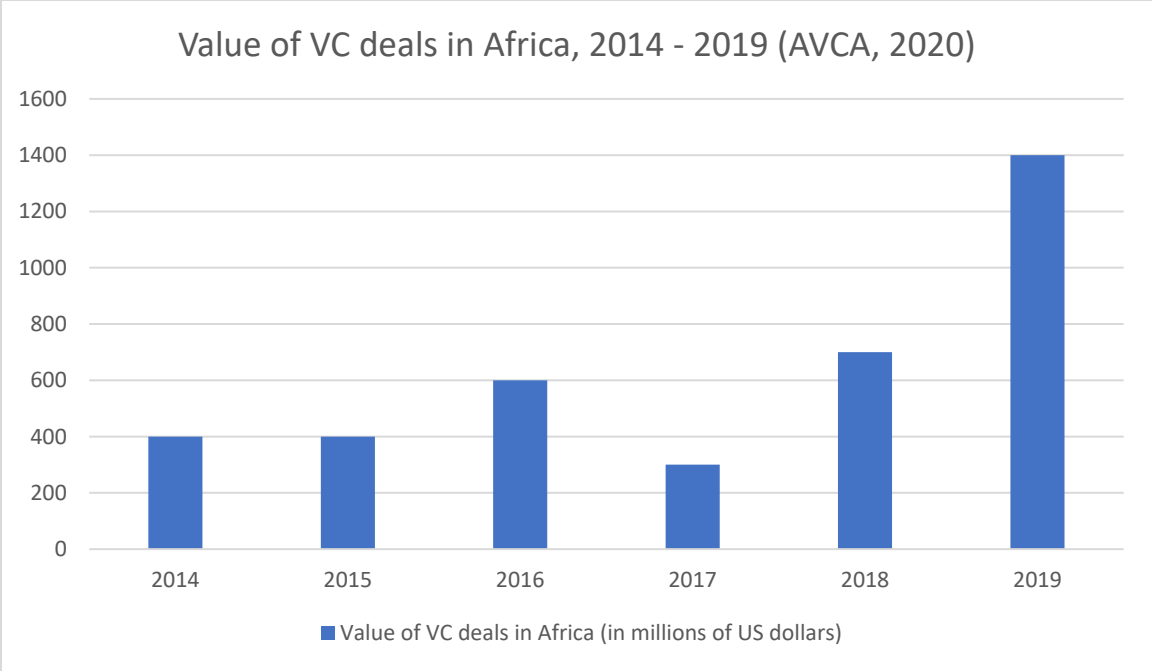


Figure 2. 4: Value of VC deals in Africa (Source: AVCA, 2020)

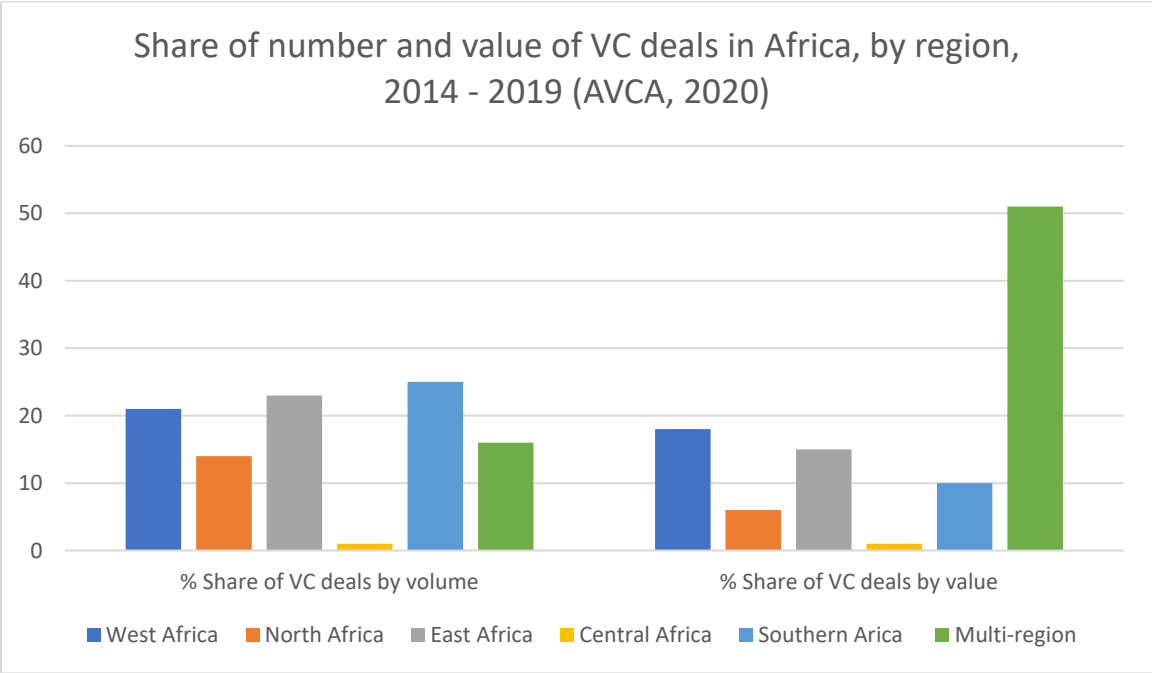


Figure 2. 5: Share of number and value of VC deals in Africa by region (Source: AVCA, 2020)

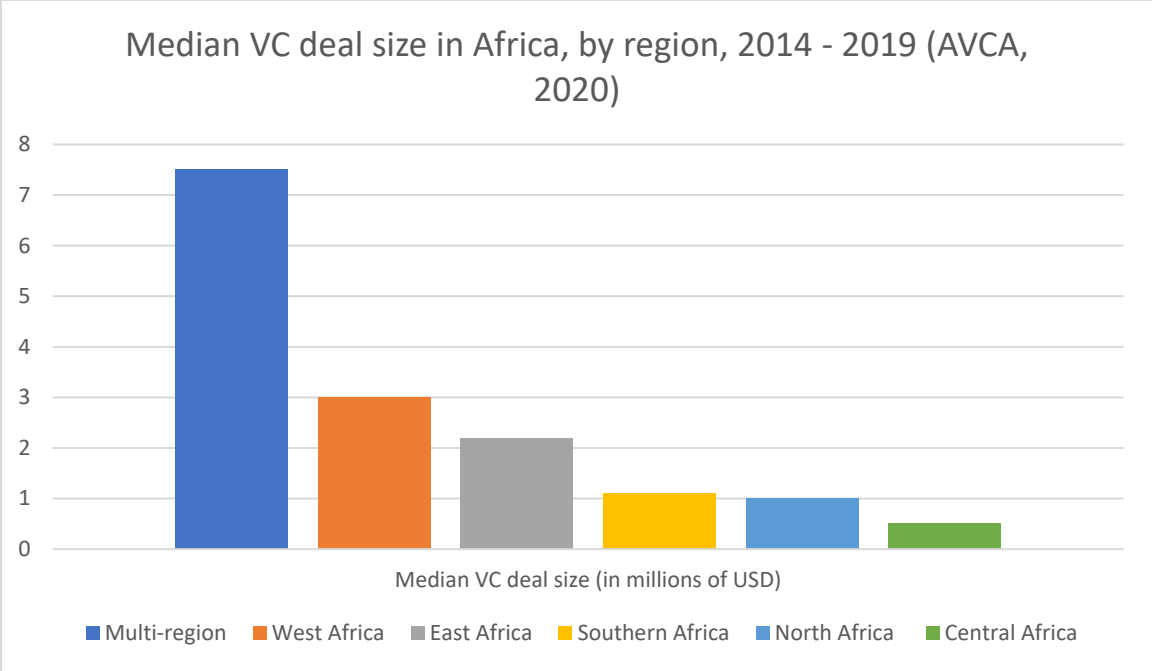


Figure 2. 6: Median VC deal size in Africa by region (Source: AVCA, 2020)

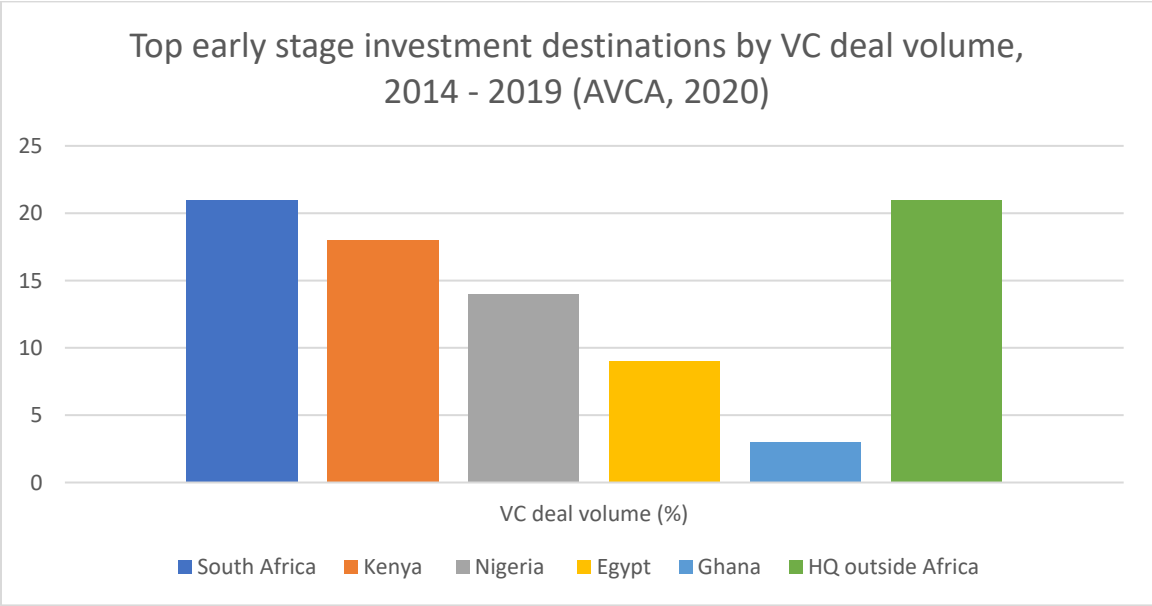


Figure 2. 7: Early-stage investment destinations by VC deal volume (Source: AVCA, 2020)

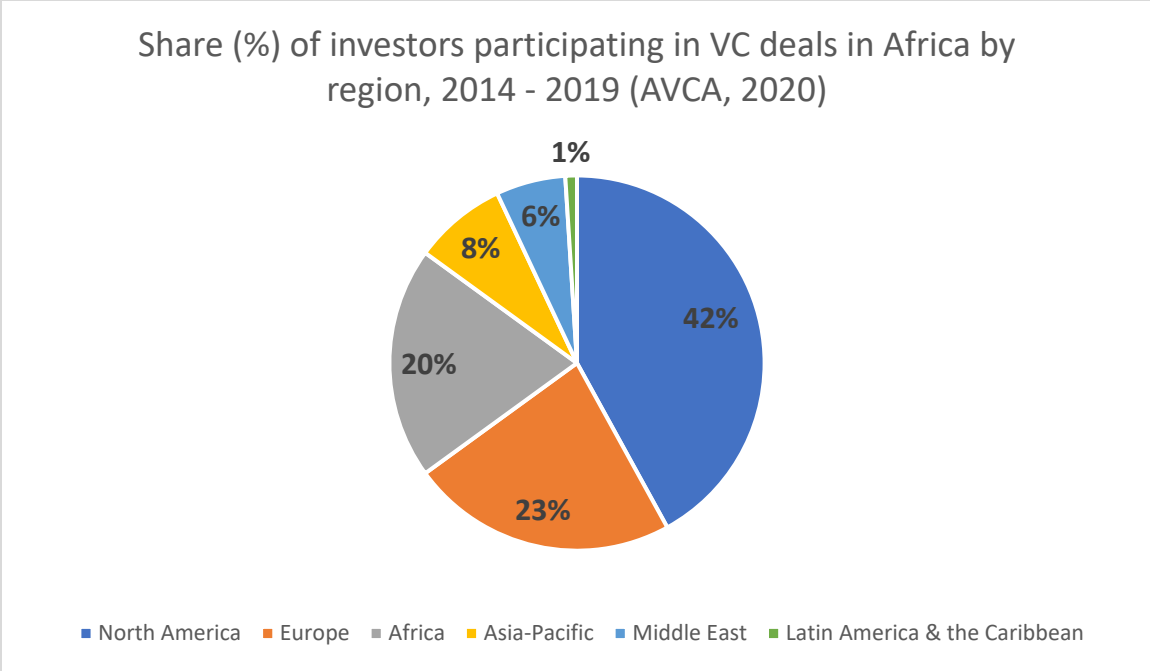


Figure 2. 8: Share of investors participating in VC deals in Africa by region (Source: AVCA, 2020)

Although there is limited data infrastructure to monitor start-up activity in Ghana, \$266 million in private capital was deployed in 15 venture capital deals in 2016-17, compared to \$63 million in 16 deals in 2014-15 (World Bank, 2016c). The start-up phase (the creation of the company) of business financing, often involving grants and investments of less than \$25,000, appears to be reasonably funded in Ghana, evidenced by the growing number of incubators and start-ups in the country. However, there is a shortage of funds at the early/acceleration stage (typically \$25,000 to \$500,000) for both investible deals and investors, with many start-ups failing at commercialisation and scaling-up (pointing at the lack of entrepreneurship skills of start-up teams, as well as poor incentives for investors with a lack of equity markets and exit strategies). For growth stage (\$1 million and above) deals, there are several regional investors with the capacity to invest (World Bank, 2016c).



Ghana is in the top five destinations for VC investments in Africa, representing 3% of total VC deal volume. This data is a bit skewed, however. The largest early-stage investment destination is 'outside Africa' which requires some explanation. First, it is important to understand that the single largest investor (as a percentage of deals) are North American (primarily American) venture capitalists, who represent 42% of the African market.

These VC firms often require African companies to incorporate in the United States as a condition precedent for investment.<sup>36</sup> Thus, many African start-ups, in a bid to attract American venture capital, incorporate in the United States, most commonly in the State of Delaware, even though their businesses have nothing to do with the United States and they are operating exclusively in African countries. As Wahome and Graham (2020) have noted, proximity to power is a factor of power geometry and the shortage of venture capitalists within Africa forces African entrepreneurs to "look outward to the places where these financing models exist" (1132).

The data supports this observation. Only 20% of the VC deals in Africa are funded by Africa-based firms. This means 4 out of 5 deals funded in Africa are by non-African firms. Europe and North America alone are responsible for 65% of all VC deals in Africa over the period studied, which highlights the outsized importance of global venture capital to African start-ups. This has implications for which entrepreneurs get funded (with the odds favouring entrepreneurs with global social networks). Neal Hansch, the managing

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<sup>36</sup> The reason for this is a provision in the American tax code called the Qualified Small Business Stock provision (QSBS). Under Section 1202 of the Internal Revenue Act of the United States, investment gains from selling QSBS may be eligible for up to 100% exclusion from federal income tax of up to \$10 million or ten times your tax basis (defined as the amount of cash plus the fair market value of any property contributed to the corporation in exchange for the stock). So, for US based investors, they can invest \$3 million in a start-up and sell that stock for \$33 million five or more years later and pay zero federal income taxes, thereby saving \$6 million at current tax rates. To benefit from QSBS, the company must be a United States domestic C corporation.

director of MEST, an incubator in Ghana, which I discuss in chapter 5, remarked that “when we invest in a company, what we desire is for it to be able to become a pan-African company that can scale globally.” Thus, MEST pairs start-ups in Ghana with bigger investors in North America and Europe who can finance subsequent funding rounds (Adeooju, 2016, 36). This impacts the types of ventures that get funded. As one venture capitalist told me bluntly, “I invest in start-ups that are likely to attract global follow-on capital.”

Recent data also shows that the majority of VC funding in Africa goes to non-African founders, a point of great contention. This is more a phenomenon in East Africa and less so in West Africa. Eghosa Omoigui, managing partner of Echo VC Partners, one of the leading venture capital firms focused on Africa noted that “investors pattern match. They look for signals of trust. Social proof is a key metaphor for trust. This carries across borders” (Onukwue, 2020). Data from 2019 showed that of the 17 companies that raised \$1 million or more from venture capital in Kenya, only 1 was founded by locals. Three were founded by a team made up of expats and Africans and 11 were founded by expats only. Of the 31 companies in other countries outside Nigeria and South Africa that raised more than \$1 million, only 10 were founded by locals. Omoigui conceded that “the data is disappointing, but the truth is there is bias.” (Ibid). He further added that VCs “fund those you think will build unicorns.” Because the majority of the VC funding comes from North America, many of the tropes and stereotypes and inequalities of that ecosystem impact the fundraising experiences of African entrepreneurs. For my interlocutors, as African women entrepreneurs, they encounter multiple and interconnecting axes of negative bias.

In 2019, about \$1.4 billion in venture capital was invested in Africa. The top 100 VC deals in 2019 for start-ups raising more than \$1 million involved 192 different VCs (Bayen, 2020). Collectively the top 100 deals raised \$1.2 billion, which is close to the \$1.4 billion estimated for 2019. Analysing the data set by gender, we find that Africa's venture capital investment data does not exhibit the same gender gap as that of Europe and North America. Whereas women-led start-ups represented only 1.7% of VC investments in the USA and 1.4% in the UK, in Africa, women-led start-ups represented 21% of deal volume and 20% of VC dollars raised (Bayen, 2020; Aernoudt & San Jose, 2020, 120). However, in line with some of the data from Europe and the USA, the median investment size was significantly lower for women-led start-ups at \$2.5 million as compared to \$4.25 million for men-led start-ups. As we will see in chapter 6, how female entrepreneurs perceive the VCs influence the ways in which they engage with them; in turn, the practices and biases of the VCs influence the perceptions that the entrepreneurs have of them. Yet, venture capital alone is not enough to build a digital economy; the state plays a key role, which I discuss in the next section.

## 2.5 Digital governmentality

Several African countries are developing strategic policies to position themselves to attract investments into growing their digital economies as they increase in importance relative to their national economy. For example, a sub-sector of the digital economy, the business process outsourcing (BPO) sector contributed about \$4 billion towards South Africa's national GDP and employed 222,500 people in 2016. The value of Egypt's BPO industry was estimated at \$2 billion in 2019, employing over 100,000 people. Many African governments are going as far as setting explicit targets for their digital economies.

The Egyptian government had a goal of expanding its digital economy to over 8 percent of GDP by 2020. Kenya, similarly, has targeted the digital economy to contribute about 8 percent to the country's GDP as well as create 180,000 jobs (Research & Markets, 2017). Reflecting these trends (see Ssendi, 2013), in Ghana the digital economy and tech entrepreneurship has gained significance.

The government considers ICT and especially data science, including analytics to be the centre of the national development agenda and as part of the national strategy to position Ghana as a regional ICT hub. As part of these efforts, Ghana embarked on an ambitious project to biometrically register all residents. The National Identification Authority was established in 2003 under the Office of the President and the National Identity Register Act, 2008 (Act 750) was passed in Parliament to authorise the collection of personal and biometric data ([www.nia.gov.gh](http://www.nia.gov.gh)). Consequently, Government has taken the initiative to register all residents in Ghana under that National Identification scheme. Government also launched and implemented a National Digital and Property Addressing System called 'ghanapostGPS' in 2018. Using ghanapostGPS, the government developed geocoded unique postal codes for every square inch of the country that feeds into the National ID system ([Ghana.gov.gh](http://Ghana.gov.gh)).

Since structural adjustment, the Ghanaian government has enacted policies to make Ghana a preferred destination for investments and foreign capital (Grant, 2009). The digital economy is a beneficiary of these policies. The digital has become a terrain of governmentality in which the state exercises its power and influence across three key areas which I will delve into in this chapter: (1) regulation; (2) infrastructure; and (3) economic empowerment of the poor.

### 2.5.1 Regulation

For technology, the key government agencies involved in technology policy are the Ministry of Communications (MoC), the National Information Technology Agency (NITA) and the National Communication Authority (NCA). The MOC is responsible for the development of reliable and affordable digital infrastructure and services in Ghana and is also in charge of development policy and regulation of ICT in Ghana. The NITA is the ICT policy implementation arm of the Ministry of Communications. The NCA is an independent regulator responsible for setting standards, licensing, and regulating communications services in Ghana. The NCA has been proactively implementing policies and promoting the adoption of new technologies and services. In addition, the NCA has been leading the charge to improve the quality of ICT and digital services in Ghana.

The Ghanaian state has generally been proactive with respect to policies and regulatory measures related to the development of its digital economy (see Table 2.1 below)

*Table 2. 1: Digital policies / regulations / laws in Ghana*

Year	Name of policy/legislation
2003	ICT for Accelerated Development (ICT4AD) Policy
2004	National Telecom Policy
2008	The National Communications Act, Act 769
2008	Electronic Communications Act
2008	National Information Technology Act
2008	Electronic Transactions Act
2009	Electronic Communications Amendment Act
2011	Electronic Communications Regulations
2011	Mobile Number Portability Regulations
2011	Subscriber Identity Module (SIM) Registration Regulations
2012	Electronic Transactions Amendment Act
2012	Data Protection Act
2012	National Broadband Policy

2015	National Cyber Security Policy & Strategy
2016	Electronic Communications Regulations
2020	Digital Financial Services Policy

Several policies have been formulated and implemented, including the ICT for Accelerated Development (ICT4AD) Policy (2003), the National Telecommunications Policy (2004), and National Broadband Policy (2012). Several legal frameworks have also been developed, with the requisite legislative instruments passed to give legal backing to the regulatory agencies. The National Communications Regulations of 2003, for example, provides the legal basis and framework for the NCA, the principal regulator. The NCA and other regulatory institutions are further supported with industry-specific regulations, such as the National Communications Authority Act (Act 769), Electronic Communications Act (Act 775), Electronic Communications Amendment Act (Act 786), Electronic Transactions Act (Act 772), National Information Technology Act, Ghana Investment Funds for Electronic Communications (GIFEC) Act, and the Data Protection Act.

While the NCA is the principal government agency, other agencies have been created to support its work. For example, the GIFEC is mandated to democratise access to underserved and rural communities, and the NITA focuses on effective deployment and use of ICT by all public sector institutions and organisations. Ghana also established a National Cybersecurity Policy and Strategy (NCSPS) in 2016 to combat cybercrime, which was estimated to have cost the country \$50 million in 2016 (The World Bank, 2019).

The government has also undertaken a series of policy and infrastructure-related reforms in recent years, including the ICT for Accelerated Development Policy (ICT4AD). In 2003, the ICT4AD policy set out the plans to engineer an ICT-led socioeconomic development process with the intended aim to transform Ghana into a middle-income,

information-rich, knowledge-based, and technology-driven economy and society (ICT4AD Policy, 2003). The government is currently taking steps to update the ICT4AD policy towards a new digital roadmap strategy for the country. This digital roadmap strategy aims to (i) foster the growth in the local IT industry beyond the boundaries of Ghana, (ii) bridge the urban-rural divide by expanding digital services to rural and underserved communities, (iii) increase efficiency, improve citizens' experience and engagement with government by reducing the mean time to deliver government services to citizens while increasing government revenue generation, (iv) increase transparency in government functions (Digital Roadmap Conference Concept Note, 2019).

In May 2020, the government launched its digital financial services (DFS) policy. The policy establishes a four-year blueprint (2020 – 2023) to achieve progress in six key areas: (1) improving governance of the DFS ecosystem; (2) supporting FinTech; (3) creating an enabling regulatory framework; (4) building the capacity of regulators; (5) supporting the development of market infrastructure for DFS; and (6) driving the expansion of digital payment use cases. The policy attempts to integrate other digital initiatives such as Ghana's existing biometric identification system and the GhanaPost GPS digital addressing system to allow for the creation of virtual accounts.

Breckenridge's (2010) case study of Ghana's attempt to create the world's first biometric money is an interesting starting point to interrogate some of these policies and initiatives by government. The Ghanaian e-Zwich project was intended to make Ghana the first country to implement a biometric payment infrastructure. However, it was ambitious for a country that at the time had no meaningful credit card system, no reliable electricity supply, or even street addresses. Yet, counterintuitively, it was the very

absence of a pre-existing system of payments that enabled Ghana to move its entire banking sector onto Net1's biometric standard. As one of the company's leaders observed, "Ghana has been able to take up the world-first initiative because it has no Visa or MasterCard infrastructure in place" (du Toit, 2008, cited in Breckenridge, 2010, 655). Thus, the concept of leapfrogging (which is a recurring feature in the discourse on biometrics in Africa) has a kind of power. New telecommunication and biometric technologies will empower African governments with new capabilities to regulate the informal economy, but the outcome is uncertain. According to Breckenridge (2010), "a close reading of the history and anthropology of money in West Africa suggests that we should be profoundly sceptical of the e-Zwich scheme and that we should view it as only the most recent of dozens of similar failed attempts by the central state authority to capture the culturally differentiated field of value transactions that make up the West African economy" (656). If history serves as any guide, the Ghanaian poor will likely discover ways to bypass the e-Zwich surveillance and they will "find ways to write local and contingent meanings into the blank biometric money" (Ibid).

While the World Bank praises these regulations as sensible policies to enable the growth of the digital economy (World Bank, 2019), entrepreneurs on the ground have mixed responses and some of them see these regulations as a means for the state to control and in some cases frustrate them. As one entrepreneur shared with me: "All these regulations require so much compliance and paperwork before you are even allowed to operate...there are some licenses you need... if you want to build a FinTech company for example, you now need a license from the Bank of Ghana. Before you could just get up



and do your business, but we are seeing the government coming in and putting in all this red tape...it's so much wahala [trouble]" (Interview, April 2019).

There are some concerns about policy continuity and follow-through. In December 2020, I met with Yaa Serwah (pseudonym), a digital entrepreneur and communication strategist, at the rooftop of Sky Bar in Accra. Yaa had recently worked with the Government of Ghana on its Silicon Valley engagement strategy, which culminated in a visit by the Vice President to San Francisco in which he met with several American technology leaders and announced his government's determination to build a digital economy. "It's been quite strange, Sangu, because there has been little action and follow-up... being on the ground, I'm realising this massive gap between the government's rhetoric and the public positioning around their desire to create a digital economy versus the reality on the ground, where their actions often do not match their ambitions... in fact, sometimes, their actions do the opposite." Another entrepreneur I spoke to, who was very frustrated, put it bluntly: "our government knows how to give standing ovation speeches about how they are pro-tech, but on the ground, we are not seeing anything" (Interview, December 2020). For example, even though the Vice President referenced the digitisation of the land registry, and the government signed a Memoranda of Understanding (MoU) with International Business Machines Corporation (IBM) in 2018, as of November 2021, there has been no implementation of blockchain-based land registries as promised.

Some of the industry experts I spoke to also complained about the lack of coherence of government policy. For example, while government on the one hand has stated a commitment to build and grow Ghana's digital economy, it also has challenges with balancing the budget that often results in tax revenue generating policies that may

hamper the growth of the digital economy. Some civil society organisations have raised concerns about digital privacy and data protection. For example, the auditor-general in Ghana discovered that the electoral commission had sold Ghanaian's personal information garnered from electoral registrations to an Accra-based software developer, without prior consent (Myjoyonline, 2019). Another entrepreneur remarked "Think about it...national identification...then GhanaPost...the government now knows who you are, biometrically and where you are...this is not about digital economy biaaa...it's a way for the state to control us...I don't trust them" (Interview, August 2019). There is a clear gap in the legal framework for protecting consumer data that is collected by government agencies, which leads to some of this distrust among the public.

All these policies are underpinned by a growing digital infrastructure, which is also stimulated and supported by the policies. This digital infrastructure is critical for the digital economy to work. It allows for the connectivity among people, enterprises and government and connects Ghana to the global digital economy.

### 2.5.2 Infrastructure

The digital economy requires digital infrastructure which includes Internet connectivity, the Internet of Things (mobile devices, sensors, geospatial instruments, voice-activated devices, and communication capabilities between machines), and data centres. Ghana's telecommunication sector has experienced significant growth after its liberalisation in the late 1990s. Today, Ghana has near ubiquitous mobile coverage of 131% (compared to 80% across Africa) (The World Bank, 2019). Its mobile Internet penetration is also at 68%, which is above the African regional average (Global System for Mobile Communication [GSMA], 2018a).

Ghana has five submarine cable landings which collectively provide over 340 Gbps in available capacity (The World Bank, 2019). There are five regional mobile operators – MTN, Vodafone, AirtelTigo, Expresso and Glo that collectively have established a significant backbone infrastructure across the country. However, there is no single comprehensive domestic fibre backbone infrastructure and there is little domestic backbone infrastructure to carry traffic from the landing points to the towns and rural communities. The government has made some infrastructural developments to bridge the digital gap, such as the 800-kilometer Eastern Corridor Fibre Optic Intercity Network, managed by the NITA, which links Ghana’s north and south to international submarine gateways, however, it is largely unutilised because of high wholesale prices and the missing last mile to the communities. This also helps explain why the digital economy is mostly concentrated in Accra.

The Government of Ghana with funding from the Danish International Development Agency (DANIDA) has invested in a \$38 million Eastern Corridor Fibre Optic Backbone Project, providing about 800 kilometres of fibre optic cable for over 120 communities across Ghana. These measures to improve connectivity have contributed to a drop in wholesale bandwidth prices and cheaper retail prices for the Ghanaian consumer.<sup>37</sup> This Eastern Corridor project links Ho to Bawku and Yendi to Tamale. In addition, the government supported NITA to extend the fibre link to Accra to provide high-speed internet services to areas across Legon-Madina-Tema. The government has also established the Ghana Investment Fund for Electronic Communications (GIFEC) which will pursue the implementation of the Digital for Inclusion (D4I) programme in 50 districts

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<sup>37</sup> For example, the cost of an E1 connection in Ghana is around \$1,200, down from as much as \$12,000 in 2006.

across the country. The programme will provide points of presence for internet access and use of digital financial services in the communities. GIFEC will also establish 400 telephony sites to provide voice signals in underserved and unserved communities where coverage is limited or non-existent.

Government has completed and commissioned 20 e-Community Information Centres (CICs) and intends to construct 20 more facilities in under-served areas across the country that suffer from low connectivity, interconnection difficulties, high cost of access and lack of ICT services. The CICs will be operationalised, along with Post Offices and equipped as e-Services Centres to spread the benefits of digitisation throughout the country. The government has also established the Accra Digital Centre to accommodate IT-Enabled Services/BPO companies to provide job opportunities. The Centre can accommodate 100 start-up companies with a stated policy of affirmative action consideration to be given to women-led start-ups and start-ups from deprived communities. The government has further acquired land at Dawa to construct an ICT Technology Park. However, as I observed during my fieldwork, there is often a massive gap between the stated policies and the reality on the ground.

In addition, most of the country's infrastructure remains concentrated in cities and commercial towns, with the majority of the rural population without effective digital coverage (The World Bank, 2019). Even though retail pricing has dropped, the cost of the Internet is still high. The UN considers internet to be affordable where consumers can purchase 1GB of data for no more than 2% of national monthly income (A4AI, 2018). By that metric, the cost of data in Ghana is not affordable as 1GB costs 3% of GNI per capita (The World Bank, 2019). On broadband speed, Ghana ranks 10<sup>th</sup> out of 12 African

countries and 110<sup>th</sup> out of 189 globally with an average speed of 2.3 Mbps (compared to Kenya at 10.71 Mbps). This is well below the 10 Mbps that is required for consumers to fully participate in a digital society (Ofcom, 2019).

Part of the challenge in achieving low cost and high access to digital infrastructure, which the government wants to achieve, is Ghana's spectrum licensing policies. The NCA hosts auctions to sell spectrums in Ghana. However, the prices are very high. For example, in 2015, the NCA sold 800 MHz of 4G spectrum for \$67.5 million. The only telecommunications company that could afford the spectrum was MTN, the market leader (The World Bank, 2019).

Apart from physical infrastructure, the government has also focused on investing in public sector digital platforms to improve governance and delivery of public services. These include the automation of tax and business registration systems. In the 2018 survey of the UN E-Government Index (EGDI), Ghana was the only African country that transitioned from the middle to high level (The World Bank, 2019).<sup>38</sup>

The government has established an integrated data warehouse of databases at key institutions and automated the processes involved in accessing public services at both national and local government levels. The establishment of nationwide e-Government infrastructure started in November 2008. An online services portal to access government services was established by NITA– [eservices.gov.gh](http://eservices.gov.gh), that is designed to serve as a single service point for government digital services. The services available include driver's license registration, passport registration and taxpayer identification

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<sup>38</sup> The EGDI looks at technical features of government websites, e-government policies, and strategies in its assessment. It is a weighted average of scores on the scope and quality of online services, the status of development of telecommunication infrastructure and the inherent human capital as measured by a human capital index

registration. Other services outside this portal have also been digitised including registration of births and death, company registration, criminal background check, visa applications and marriage licenses.

The company registration is a notable one which is a public-private partnership supported by the NIT and the Ministry of Finance. It completely digitises the business registry of the Registrar General's Department (RGD) and allows for complete processing of business applications within 48 hours. It also eliminates middlemen and reduces the cost of doing business. The government has also been trying to link its various digital initiatives, for example, the RGD now requires both a tax identification number and a digital address code to complete any business registration. For payments, the Ghana E-Payment Portal (GEPP) was established to accept all sorts of non-cash payments from credit, debit, cheque, mobile money, and bank transfer. This has resulted in a significant increase in automated business registrations which reached 87,900 in 2015 and tax registrations which reached 425,305 in 2015. It also likely contributed to the increase in tax revenue from 12% in 2009 to 16.9% in 2015 and most certainly resulted in increased efficiency in tax collection.

However, it is important to recognise that while my interlocutors may benefit from the government's actions on regulation and infrastructure, these upper-class female technology entrepreneurs are not the priority of the government's strategy. As one politician privately and bluntly told me "these your digital people, do they even vote? We focus on policies that will affect the mass voters. Supporting VC won't get me re-elected. Helping farmers will. The farmers vote" (Interview, November 2016). In line with such

political sensitivity, the government's focus is on economic empowerment of the poor and job creation, which I discuss in the next section.

### 2.5.3 Economic empowerment of the poor

A major part of the government's rhetoric around the digital economy is its potential to empower the poor economically and to create jobs. As part of the government's re-election campaign in 2020, Dr. Bawumia gave a speech in which he pledged "in the next four years, we plan to build a digital services economy... [to create jobs] ... and to nurture start-ups to accelerate the development of applications software..." This rhetoric is not new; historically the government looked to attract global corporations to help create jobs at the BoP.<sup>39</sup> As Dolan & Roll (2013) note, in many ways, Africa has become this new frontier of inclusive capitalism, "as companies seek to bring the poor into the sphere of transnational economic circulation as nascent consumers and into productive activity as entrepreneurs" (124). Firms create these BoP economies "through a set of market technologies, practices, and discourses that render the spaces and actors at the bottom of the pyramid knowable, calculable, and predictable to global business" (Ibid, 125). Thus, the BoP proposition emerges at the nexus of three intersecting policy trends: private sector-led development; formalisation and regulation of informal enterprise; and enterprise and entrepreneurship as a driver of economic growth. As discussed earlier in

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<sup>39</sup> "The concept of BoP has grown significantly in the management literature since 1998, after C. K. Prahalad, in collaboration with Stuart Hart, Allen Hammond, and others, developed a business case for it. At the time, the dominant scholarship did not see any real opportunity for business engagement with the poor on a mutually beneficial basis, other than through philanthropic efforts. Challenging these views, Prahalad and his collaborators argued that multinational enterprises (MNEs) could grow their profits and help lift billions of people out of poverty by doing business with the poor. Hence, they called on MNEs to engage this segment of the world's population, to which they referred as the 'bottom' or 'base' of the economic pyramid. Thus, BoP stands for 'base of the pyramid' or 'bottom of the pyramid'." (Kolk et al., 2013)

this chapter, these trends are rooted in structural adjustment programmes that sought to catalyse the development of private markets across Africa, economic liberalisation, and market discipline in policies and programmes for African development.

The proponents of BoP focus on the opportunities for job creation and economic renewal, which would enable “millions of individuals to work their way out of poverty with dignity” (Kannabiran, 2005, 371). International organisations and state governments have contributed to this discourse and affirmed entrepreneurial capitalism as a way to create a “productive citizenry” (Colvin et al., 2009, 9) and transform marginalised communities from a culture of dependency to one of self-reliance (Dolan & Roll, 2013, 127). This movement gained traction in the late 1990s, as several countries adopted national welfare strategies based on “neoliberal motifs of ‘empowerment’” (Ferguson, 2007, 74), self-sufficiency, and enterprise, advocating for an entrepreneurial citizen to relieve a resource-constrained and “inefficient” state (Colvin et al., 2009, 9). By re-categorising the unemployed citizens as potential entrepreneurs, “African governments not only aligned a national discourse of economic self-sufficiency with the bodies of newly enterprising individuals, but also provided fertile opportunities for the BoP proposition’s empowerment-through-enterprise approach” (Dolan & Roll, 2013, 127). This discourse has only accelerated with the digital economy and the rhetoric around inclusivity and democratisation of opportunity.

However, many scholars have critiqued this approach. Schwittay (2009) has written about the emergence and evolution of global corporate citizenship programmes in the IT industry, which focus on the bottom of the pyramid (BoP). Her research on HP’s e-Inclusion programme, which was the first corporate-wide BoP initiative in the high-tech



industry, concludes: “transforming the poor into protoconsumers of transnational corporation’s products and services cannot address the structural drivers of their circumstances and will lead to neither the eradication of poverty nor a corporate fortune from the BoP” (Schwittay, 2011, 71). Her research corroborated findings from other scholars that the creation of new markets at the BoP does not always result in socio-economic improvement for the poor (Rankin, 2004; Elyachar, 2005).

These frameworks are useful to critique the government of Ghana’s approach to the digital economy. The government of Ghana is focusing on technology and entrepreneurship as key pillars of its growth strategy to create jobs and generate economic growth. Acknowledging that one of the greatest challenges in the country is unemployment, the government has launched an ambitious plan to promote the growth and development of entrepreneurship and to accelerate job creation for national development. About 250,000 people enter the Ghana labour market every year, with only 2% able to secure jobs in the formal sector (Nyadu-Addo & Mensah, 2018). Graduate unemployment has also risen sharply from 14.7% in 1987 to 40% in 2011. In response, the government set up the National Youth Employment Programme (NYEP) in 2006, which was restructured into the Ghana Youth Employment and Entrepreneurial Development Agency (GYEEDA) in 2012 and reconstituted as the Youth Employment Agency (YEA) in 2015 (Ibid). Each change in the name of the agency in charge of youth unemployment has been marked by a change in government with a new government showing its commitment to fighting youth employment by changing the name. Other interventions include the Local Enterprise Skills Development Programme, Youth in Agriculture Programme, Ghana Centre for Entrepreneurship, Employment, and

Innovation (GCEEI) and Competency Training for Fresh and Unemployed Graduates Programme (Ibid).

The National Entrepreneurship and Innovation Plan (NEIP) is a flagship initiative launched by the NPP government in 2017 which is designed to be the primary vehicle for providing integrated support for early-stage businesses, focusing on the provision of business development services, business incubators, and funding for youth-owned businesses. The NEIP will enable qualified new businesses to emerge and give them the space to grow, position them to attract financing, and provide business development support services. The programme will assist these businesses to secure markets during the critical formative years and tap into a wide supply chain and network during their growth years (Interview at Ministry of Finance, 11 June 2018). NEIP is set within the context of the Ghana government's long-term strategic vision of consolidating Ghana's middle-income status and "building an industry-driven economy capable of providing decent jobs that are suitable and sustainable for development" (Ibid).<sup>40</sup>

Many of the entrepreneurs I met find government support to be woefully inadequate. One entrepreneur who has been struggling to find financial support within Ghana remarked, "The NEIP fund is giving \$2,000 to entrepreneurs...what can that do?"

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<sup>40</sup> NEIP is designed along four key implementation modules. (1) NEIP Incubation & Acceleration Programme: Provision of Subsidised Workspace for Young Entrepreneurs which will be resourced with business development facilities, meeting rooms, conference rooms, shared office space and other related services. (2) NEIP Business Competition & Business Support Programme: National Early-stage Business Competition through which candidates will be selected for admission into the Incubator Hubs and receive funding on set criteria. (3) NEIP Industrialisation Plan: Setting up of Industrial Sub-contracting Exchange to link large industries in the supply chain process. These small Businesses and Start-ups will become the supply chain for goods and services to feed the large industries. (4) NEIP Fund: This fund would be a privately managed fund but under the supervision and management of NEIP and the Ministry for Business Development. The capital under this fund would be raised through Government support, grants from international agencies and from the private sector. Government so far has disbursed \$10 million to 1,350 entrepreneurs of SMEs as seed capital, with each entrepreneur receiving between GHS 10,000 (\$2,000) and GHS 100,000 (\$20,000) as financial support (Ghanaweb, 2019).

... how is that start-up capital when it is not enough to even hire a programmer for two months?” There is a sense among many of the entrepreneurs I met that these government initiatives are populist measures aimed at garnering political votes as opposed to building a robust tech start-up ecosystem.

There have also been misgivings over several recent initiatives by the Government of Ghana in adopting emerging technologies in partnership with the private sector:

- The Ghana Health Service, in partnership with the World Health Organisation (WHO) and funded by the Bill and Melinda Gates Foundation Global Grand Challenges Grant, is developing the Vaccine Wastage Sentinel Monitoring System, which uses SMS mobile phone technology to assess the management of vaccines to help reduce wastage in the vaccine supply chain in Ghana (Global Grand Challenges).
- The Ministry of Lands and Natural Resources in Ghana signed an MOU with IBM to implement a blockchain-based land registry system (Ministry of Lands and Natural Resources, 2018).
- The government has signed a deal with a U.S. tech firm Zipline to deliver COVID-19 test samples from Kumasi to the Noguchi Institute for Medical Research in Accra for testing and analysis (CNBC, 2020).

All these partnerships have been with foreign companies. Many of the entrepreneurs I spoke to did not feel that there was a real commitment to developing a local tech industry and believed that government ‘spoke’ the language of tech and gender empowerment without real action to back it. For example, some entrepreneurs complained that many of the tech contracts go to foreign companies and have questionable or overpriced contract values. One tech entrepreneur commented,

“SnooCode [a local tech start-up that already had designed a geo-coded location app] could have designed the GhanaPost GPS for much cheaper than the \$3 million that was spent...they are just paying lip service when they talk about empowering us” (Interview, February 2019). Another entrepreneur referred to the partnership government created with Zipline, the American drone start-up: “the government says that it is committed to nurturing our local tech ecosystem, yet they don’t support local tech entrepreneurs...there are several local drone companies that could have easily implemented the drone project...why did they have to go to California and get white boys to do it?” (Interview, September 2020).

## 2.6 Conclusion

In this chapter, I gave an overview of Ghana’s economic evolution from structural adjustment through present. I traced Ghana’s economic liberalisation policies which have been focused on facilitating foreign direct investment and are now focused on growing its digital economy. I assessed this digital economy, looking at the macroeconomy, venture capital, and the role of the state across three key areas: infrastructure, regulation, and economic empowerment. I also shared critiques of the government’s digital policies by entrepreneurs and other stakeholders. Understanding the political and economic context of Ghana’s digital economy and its evolution allows us to better understand the making of female digital entrepreneurs, which the remaining chapters uncover.

## Chapter 3: Navigating Class in the Digital Economy

### 3.1 Introduction

From September 19 to September 22, 2018, hundreds of women from all over the African continent--tech entrepreneurs, online influencers, Science, Technology, Engineering and Mathematics (STEM) scholars -- gathered at the Institute of Democratic Governance in Accra for 'Women in Tech Week', organised by one of my interlocutors, Ethel Cofie, the founder of Women in Tech Africa (WITA), an organisation with chapters in thirty countries. The event was described as 'a festival of technology events that will explore different ways women can grow as leaders and technology users.' It featured topics ranging from creating sustainable practices and policies for agriculture technology; learning how to develop compelling digital content; scaling up a business; and key leadership principles for success as a woman executive. Almost all the female digital entrepreneurs in Ghana, majority of them returnees, were in attendance, and it was clear they all knew each other as they went around hugging and laughing. It was also clear from their interactions with many of the other attendees that they had overlapping social circles. The side conversations among attendees – ranging from #metoo to blockchain - reflected the global and cosmopolitan nature of the digital economy in which these women operated. These social networks become very important for my interlocutors as they rely on them for support in building their businesses.

This chapter analyses class and its intersection with gender (see e.g., Overa, 2017) as a mediating force that governs entry into and success in the digital economy.<sup>41</sup> The case studies in this chapter show several conversion strategies for female technology entrepreneurs in Ghana (Bourdieu, 1977). Many of the entrepreneurs I interviewed are return migrants who moved back to Ghana with significant economic capital from their savings and earnings abroad. Others focused on conversions of the social capital that they either had or had acquired through kinship and marriage relations into economic capital in the form of start-up capital. Successful entrepreneurship in the tech economy also requires having the relevant cultural capital. I use Bourdieu's concepts of cultural, social, economic, and symbolic capital to understand the various ways that female technology entrepreneurs engage in mobilisation and conversion of capital as they start and scale their entrepreneurial ventures. In this chapter, I use the case studies to make sense of the 'conditions of possibility' (Liechty, 2012) that facilitate the amassing of assets, wealth, and privilege by understanding the lived experiences of my interlocutors. Their experiences help us to better understand what it takes for female tech entrepreneurs to achieve success in the digital economy.

### 3.2 Class and Entrepreneurship

Entrepreneurship and entrepreneurial success are mediated by class. Ablo and Overa (2015) have noted the usefulness of Bourdieu in understanding entrepreneurs who are "members of various social fields with ascribed and achieved social statuses" ( 396 citing Bourdieu, 1977). Entrepreneurs in Ghana are embedded in a variety of social fields

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<sup>41</sup> As discussed in the introduction (page 10), this thesis neither represents an exercise in, nor sets out to undertake detailed class analysis in Ghana. Both its overall aim and detailed analyses concern a purposive sample of the country's digital elite who while undoubtedly part of a transnational professional elite prefer the self-description "middle class."

including party politics, religion, ethnicity, kinship, and the public sector bureaucracy (Ablo & Overa, 2015, 396). Entrepreneurship involves the ability of the entrepreneur to access and combine the different forms of capital (economic, social, cultural, and symbolic) which are mutually convertible within their social fields (Bourdieu 1977, 183). Wheadon and Duval-Couetil (2019) define an entrepreneur's social capital as "the benefits that can be extracted from their social structures, networks and relationships" which can "either take the form of physical resources (like investors or collaborators), or less tangible assets such as mentorship, support, advice, introductions, and access to valuable information, opportunities, or partnerships" (317). Entrepreneurs can convert one form of capital into another such as leveraging political power for economic gain or converting economic capital acquired through kinship or marriage into investment in a business "in ways that are legitimate" (Overa, 2003, 52). Knowing how to act legitimately is what Bourdieu described as habitus: "the internalisation of the rules, structures and hierarchies of a field as well as knowledge of one's position within the field" (Overa, 2017, 363). Thus, practicing entrepreneurship requires an understanding of "the rules and the symbolic struggles of various fields and their structural constraints" (Ibid).

This process is mediated by gender (Ibid). As Overa (2017) notes, gender impacts the ability of the entrepreneur to accumulate desirable forms of capital, in which social fields this is possible, and what are perceived as legitimate capital conversions. Gender intersects with other factors such as age, ethnicity, and class in shaping the entrepreneur's position and structuring her practices and agency. Gender ideologies in Ghana influence what is considered appropriate work for women and men and thus shape expectations on how they should practice entrepreneurship (Overa, 2007).

Overa (2017) analyses how female entrepreneurs in the oil and gas industry in Ghana develop practices around the rules of multiple fields in their entrepreneurial journeys. They activate various forms of capital within fields to overcome obstacles as they convert capital from one form to another between fields (Ibid: 371). She borrows the concept of “navigation” (Kingsolver and Gunewardena, 2007) to understand how “women of diverse social locations and identities...exercise their...agency in resisting and challenging the disempowering aspects of globalisation they encounter and experience” (11). This concept of navigation is very helpful for analysing agency in situations of “social volatility and opacity” (Vigh, 2009, 420) such as Ghana’s business environment which Overa describes as lacking infrastructure and well-functioning institutions, and thus requiring a high reliance on social networks to access resources and personalised trust to reduce risk. Like the Ghanaian entrepreneurs in her study who manoeuvre in between the local context and the ‘opaque’ foreign petroleum environment, it is useful to understand the ways in which the female technology entrepreneurs in my research manoeuvre as “navigations”. “When navigating we seek to act in and through immediate changeable circumstances as well as move toward positions in the yet to come – articulated in unison as hopes and dreams. As such, social navigation is to plot, to actualise plotted trajectories and to relate one’s plots and actions to the constant possibility of change. Yet it must be emphasised that as we move in our social world our horizons change around us, affecting both our vistas (and hence points of views) and our attainable social positions” (Vigh, 2009, 426).

From this perspective, this chapter discusses the digital economy as a particular terrain of social navigation. In his work on ex-combatants in Guinea Bissau, Vigh (2006)



expounds on the concept of social navigation in examining how ex-combatants found themselves navigating through and within social dangers and potential opportunities. Navigating the digital economy for my interlocutors, however, mainly consists of moving through and within the transglobal funding ecosystem, the aspirations for scaling their enterprises, and the quest for economic and social success.

The case studies in this chapter illustrate several conversion strategies for female technology entrepreneurs in Ghana. As I highlighted in the introduction to this chapter, most of my interlocutors are returnees and possess significant economic capital from their savings and earnings abroad. Several of the entrepreneurs I studied were quite successful in converting social capital that they had acquired through kinship and marriage into economic capital in the form of early equity funding for their business. As one interlocutor put it, “your net worth is based on your network.” As these case studies will illustrate, success in the tech economy requires having the relevant cultural capital. Overa’s study of entrepreneurs in the oil and gas industry in Ghana identified specific forms of both cultural and symbolic capital that many female entrepreneurs had difficulty accessing but were crucial within their field.

By contrast, in the tech economy, my interlocutors possessed significant cultural and symbolic capital as these case studies will demonstrate, and they were able to activate technology-related cultural capital in the form of credentials and deep knowledge of the industry’s structure, codes of conduct, and knowing how to act. However, possessing one or several of these capital forms does not mean the entrepreneurial ventures will succeed (Ablo & Overa, 2015, 398). Entrepreneurial success requires the combination of multiple forms of capital to attain a particular result amidst uncertainties

(Kuenyehia, 2012). These case studies show the various ways in which female technology entrepreneurs mobilise and convert, or do not convert, forms of capital into other forms of capital, with varying degrees of success.

### 3.3 Case Studies

#### 3.3.1 Early exposure to technology (Farida Bedwei)

When Farida was born in Lagos on April 6, 1979, she was immediately diagnosed with jaundice and a blocked intestine. “[I was diagnosed with] cerebral palsy which is a brain damage that affects the cerebrum of the brain. That is the part that controls movement and speech. It generally controls everything that you do so depending on which part is damaged, some people are better off, and others are worse off than me. There are no two cerebral palsy cases that are the same. There are some people whose hearing or sight are affected and there are some who are mentally challenged because it depends on the part of the brain that was affected,” she explained. The type of cerebral palsy she has affects only her body movement and muscle coordination and not her ability to learn.

Against the doctor’s suggestions and despite the growing attention in the U.K. for people with disabilities, Farida’s mother chose to take care of her daughter herself, instead of putting her in a group home. Farida’s father worked at the United Nations Development Programme (UNDP) at the time. He was assigned to Dominica, which had just suffered a devastating hurricane, and the UN was engaged in the recovery and rebuilding process. So, the Bedwei family moved to Dominica and lived there for three and a half years, the first in a series of relocations.

After three and a half years in Dominica, Farida's family moved to the U.K. After a year, they moved again to the Comoros Island for six months. They returned to the U.K, spending time in Manchester and Scotland. Farida was about six and a half years old then and was to enrol in school. At the time, children with disabilities with high Intelligence Quotient (IQ) were integrated into mainstream schools and Farida was scheduled to be integrated. But before that could happen, her father got a new job at the Commonwealth Secretariat and was posted to Grenada in the Caribbean. The Bedweis had to move – again. They lived on the island for two years; her mother continued with her home-schooling.

In her home-schooling sessions, one of the challenges Farida faced was writing. Her condition made it difficult to grip a pen well enough to write. She used a manual typewriter instead, as this was the early 1980s. As computers became cheaper and more accessible, her parents bought her a home computer. It was a Word Processor with games, with the capacity to do some programming in the basic language. She used it to do her course work and to write letters to her pen pals. In her typical inspiring fashion, she said, 'I always say that if it hadn't been disability, I wouldn't be in tech because I wouldn't have had to use the computer and I wouldn't have had to develop interest [in computers]'.

The Bedweis moved for the sixth time when she turned 9. This time, they were returning to Ghana. After a couple of years, her mother registered her at a computer training institute. This was the first time she was going into a formal classroom setting. She registered for all the four courses on offer at the institute: Word Perfect, Lotus 123, dBase 4, and Introduction to Computers. Her classmates had completed either high

school or university. Most were learning to use a computer for the first time. After two or three sessions, the owner of the school approached Farida's mother with a confession: he had thought to himself that they were wasting their money bringing a girl of her age and physical challenge to learn about computers. Similarly, her classmates thought the same and expected her to hold the class back. 'But after two or three lessons, he came to the class and saw me teaching them. I ended up explaining and showing them things they didn't understand. I had a natural grasp [of the] concepts. It was easier for me to grasp the concept because I had worked on a computer before', Farida explained. Until then, the only other child she had constant interaction with was her sister. Her mother enrolled her in the nearest junior high school, Cambridge Junior Secondary School, a government school, so Farida could make friends of her age. Unfortunately, the school closed after the end of her first year. She then enrolled at Kaneshie Awudome 1 Junior Secondary School where she sat for her Basic Examinations Certificate Exams (middle school exams), which resulted in her admission to Achimota School, a top tier senior high school in Accra famous for its illustrious list of graduates which include former presidents and statesmen of the country. However, Achimota School was not disability-friendly and unlike junior high school, senior high school involved a lot of movements from one class to another. As her mother could not be on campus to help her, it was a real challenge for Farida. The best alternative was to skip senior high school and pursue a diploma programme. With her knack for and interest in computers, she applied for a diploma in IT at the St. Michael's Computer Technology Centre. It was an international diploma organised by the Institute of Management Information Systems based in the U.K. After

graduating, she started working for Omani Computers, at the age of 18. Hungry to learn more, she did the higher diploma as a part-time student.

By this time, she had been exposed to networking, software, hardware, and database management. She settled on software as the area in which to specialise. However, to be a good developer, she needed experience. There were a few software companies in Ghana at the time like Soft (now SOFTtribe) and Persol. After researching into their profiles, she opted for Soft and approached the founder, Herman Chinery-Hesse. “I went there and told the guy [Herman] I wanted to work but I had no work experience and if he gives me the opportunity I promise, he will never regret it. He said ‘ok, come on board’. That’s how I got started in the software environment. Up till now, I still don’t know where I got the courage from.”

While at Soft, she foresaw that the web and Internet-based applications were going to be the next big thing in the tech space because of its network effect. After three years at Soft, she needed a new challenge and environment. She left to study E-technology at National Institute of Information Technology (NIIT), a leading technology school in Ghana, where she learned JAVA programming and web-enabled technology. Thereafter, leveraging her social capital, a mutual friend introduced her to Ehizogie Biniti, who was starting a software company, Rancard Solutions, building enterprise and mobile services. He introduced Farida to his co-founder, Kofi Dadzie, and after the interview, they offered her a job as their second employee. She was putting her e-tech diploma to work, entering the field she thought was going to be the future. She started at Rancard as a solutions analyst. She was twenty-two years old at the time and rose through the ranks, eventually becoming responsible for the development and maintenance of the mobility platform,

which connected the mobile networks to the content providers. She played a lead role in the development of a content management system for the Commission for Human Rights and Administrative Justice and the development of an enterprise web-based payroll application for KPMG's Ghana office. Rancard would go on to be a leader in the technology space in Ghana, later developing artificial intelligence-driven social recommendation algorithms.

Farida applied to do a bachelor's degree in computer science at the University of Hertfordshire in the U.K. She got admission and an exemption from the first two years. From 2004, she spent nine months in Hertfordshire. When she returned, Rancard eagerly took her back and she worked there for another five years. She also studied project management at the Ghana Institute of Management and Public Administration (GIMPA) in 2009.

After almost ten years at Rancard, she felt it was time for a change. She had fourteen years of experience in programming. She had risen to become a senior software architect. She considered venturing into a completely different field until a friend and former colleague from Rancard, Derrick Dankyi, invited her to help him start a company. Derrick was starting a microfinance company. He wanted Farida to help set up the IT department. The company, known as G-Life Financial Services, adopted a software that originated from Kenya. It was inefficient and yet expensive. She built an alternative application that made their work easier. They named this new software g-Kudi. At the time it was unique in that it was a cloud-based banking solution. It simplified the entire chain of their work process: from loan application to loan disbursement and loan repayment. Its other distinct feature was that it disbursed loans to customers through a Short Message

Service (SMS) code on their mobile phones. With that code, the customer could receive a loan from any branch of the company. When the word got out on g-Kudi, other microfinance companies wanted it, Farida and Derrick saw a business opportunity, and Logiciel was born.

Farida co-founded Logiciel with Derrick to provide their (g-Kudi) software as a service for the microfinance industry to run their banking operations. It was the first to offer clouding services in the microfinance sector. It caters to both deposit-taking microfinance institutions and non-deposit taking institutions such as money lenders. It can be used on desktop computers or mobile phones. Introducing a cloud-based system was new, so they had to face the conservative nature of the owners and managers of microfinance institutions who were initially resistant. Many wanted to see where their data was being housed and handled. They couldn't believe they could not see the physical storage. Farida persevered and eventually Logiciel got a deal with the Association of Microfinance Companies in Ghana and sold the software to thirty clients. Though there were other competitors in that space, Farida realised that they could quickly take over the market because g-Kudi was affordable, and it was easy to sign on. Their flexible terms of payment were another advantage. They adopted a subscription model where clients made a lump sum payment to install followed by monthly subscription payments. Subsequently, about two hundred and fifty microfinance institutions bought the software to facilitate their operations. Logiciel is now processing over \$10 million in annual transactions.

Farida Bedwei is a towering figure in the technology ecosystem in Ghana as the co-founder and Chief Technology Officer of Logiciel, which is now the largest

microfinance banking software platform in Ghana. She was named a Young Global Leader by the World Economic Forum and remains the youngest person ever to be appointed to the board of Ghana's National Communications Authority. Ghana's former president John Mahama presented her with a Special Award at the Government of Ghana National Youth Awards in 2012. She was also listed in the Inaugural 100 Most Influential Young Africans in 2016 by the Africa Youth Awards. South Africa's CEO Magazine celebrated her with the Most Influential Woman in Business and Government in Africa for the Financial Sector award in 2013. She was the first recipient of the Legacy and Legacy Ideas Award 2011, given by the organiser of Ghana's biggest motivational speaking conference. In a national poll conducted by Avance Media in 2015, she was voted the Most Influential Young Woman in Ghana.

### 3.3.2 "Worst case, I can run to my father" (Ethel Cofie and Regina Honu)

#### **Ethel Cofie**

Ethel is CEO and Founder of EDEL Technology Consulting, an IT consulting and digital products company based in Ghana, and the founder of Women in Tech Africa, the largest women in tech group on the African continent with members in over thirty African countries. Ethel grew up among entrepreneurs: her father, mother, grandmother and many uncles and aunties were all entrepreneurs.

I'm from a typical middle-income African family and I think my parents have done a great job in one generation of living in a village with parents that didn't have formal education to coming to Accra and creating a life where they can have a child like me, who is growing up and doing things. I've grown up around entrepreneurs and people running their own businesses...So, I grew up in an environment where people were essentially creating their own life in how they are able to earn income and I think it was never about "why did you



decide to get into entrepreneurship?” it was never a question of deciding, it was going to happen at some point of my life and sort of at the back of your mind if you are around people like that, the idea of running your own thing sounds really good.

As Ethel shared with me, “I’ve grown up around entrepreneurs and people running their own businesses. Even though my mum was a civil servant, she also run things on the side.” In fact, because civil servants are salaried, they often qualify for bank loans which enables them to invest in entrepreneurial ventures. Another entrepreneur put it bluntly, “chale, the move be say the ministry people nah de do dema own ronnings, dem nor inside, you see ahhh dema own company way e go chop the contract” [you see, the situation is that the people who work at the ministries take advantage of their insider status to create their own companies to win contracts].

Initially, Ethel thought she would study engineering in university, but during a gap year between secondary school and university, her father enrolled her in a diploma course in computer studies. “I took classes in foundation of computing and coding and I remember just sitting in the class and thinking ‘this is interesting and this is what I’m going to do with the rest of my life’...” Ethel didn’t have the requisite grades to gain admission into the University of Ghana, Legon, which turned out to be a “blessing in disguise” because Legon didn’t have a strong Computer Science programme at the time. She enrolled in 2001 at Valley View University, which she admits had lower standards but a strong Computer Science programme. “We had a fully functioning computer lab...we were a small class of about twenty to thirty students, we will have coding ‘jams’ and practice throughout the night...my sister studied Computer Science at Legon, and I had a much better experience at Valley View...”

Ethel later pursued further education abroad. After Valley View, she moved to the U.K. to pursue a Master of Science degree in Distributed Systems in 2006 at the University of Brighton. Afterwards, she worked in the U.K. as a web application developer and a system analyst for three years. Ethel was not finding fulfilment with her job in the U.K. and wanted to start her own venture.

When I came to the phase where I said, “I want to build a company,” psychologically for me I wasn’t going to build the company in the U.K. because it didn’t feel like a safe environment. I was going to be broke for a while and I understood that because I have been watching [entrepreneurs] around me. And I wanted it to be in a place where I had some sort of psychological safety net and Ghana made sense because if I’m broke in the U.K. and I can’t pay my rent and bills then it’s a little harder to deal with and I don’t have family here...If I’m in Ghana and I’m broke, worst case scenario I will go cry to my dad and he might help me. That was my thinking at that time, so I left my job and headed back here and the rest they say is history.

Ethel’s company, EDEL, builds custom software solutions and develops digital strategies for firms in Ghana and across the sub-region. While she started the business in 2010, she still had full-time jobs elsewhere. For example, she worked in Vodafone’s Commercial IT Solutions group from 2012 – 2014. After she quit Vodafone, she pursued her venture full-time. When she started her company, she was supported by her family financially and saved money by living at home where she did not have to pay rent or pay for food and utilities. She also was able to utilise her savings from working in the U.K. “I had saved up quite a bit to [focus full-time]”. Between her savings and family support, Ethel confessed that “I have [never had to] raise funds for EDEL.” Ethel was also able to rely on her wider network of friends, mentors and business contacts that helped her company thrive.

## **Regina Honu**

Regina is the founder and CEO of Soronko Solutions, a tech start-up based in Accra. Like many of the other female tech entrepreneurs, Regina also grew up in what she describes as a middle-class family and was exposed early to computers.

In class six, my father brings home a computer. I played Pacman, loved it, wanted to make my own Pacman then I found out to do that I would have to learn how to code and all that. From class 6 till university, I never touched anything coding-related. From the time that I said with my mouth that I want to study Computer Science, up until I went to the university, I did not have any access, any idea, nothing. It was just a future aspiration idea that I hoped it would come through even though I did not have the opportunity to try my hands on anything and figure out if that was what I really wanted. I just kind of said it because I thought that will give me the opportunity to make Pacman and I thought that was cool.

In secondary school, Regina took computer classes but “we were only taught basic things about a computer like what a mouse is, what a keyboard is and [how to] type something basic on MS Word.” However, unlike many of the entrepreneurs (71% of my sample set), Regina did not go abroad for her university education. When it was time to attend university, Regina’s father told her about a new university called Ashesi, which was founded by Patrick Awuah, a Ghanaian social entrepreneur who was a former Microsoft software engineer.

“Ashesi seemed promising even though it was a new school because they publicised an education comparable to that of abroad and lecturers would be brought from [overseas].” Regina met Patrick and was sold on his vision for Ashesi. She set her heart on the school and applied, gaining admission. “Everything about Ashesi was different, the way we were taught was all about critical thinking and I had the opportunity to study Liberal Arts which gave me the chance to do a lot of courses that really opened my mind. I also took a course on entrepreneurship, and I remember telling my lecturer it

wasn't a thing for me because I was a "follow the rules" kind of girl." Regina ended up declaring a major in Computer Science, even though she struggled with the subject initially. "My first class was Computer Basic, and I failed [it]." Regina was undeterred because "I heard most of the time that [Computer Science] wasn't for girls [yet] I was so intrigued by it and [refused to allow] one small hurdle to stop me, so I ...never slept, for a period I would code day and night till I started getting good. Coding became like a second language to me."

Regina spent the summer of her second-year interning for Rancard, the same technology company that hired Farida Bedwei. "When I was in my third year, I got a job at Rancard after an internship even though I was still in school. I fell in love with Rancard and their vision of becoming the Microsoft or Apple of Africa." However, Regina fell out of love with the company because she did not believe she was treated fairly. "I used to work on Saturdays and Sundays because I believed in the vision but even as a project manager by title, I wasn't given the courtesy of [participating in decision-making] discussions, mistakes [prompted] harsh words and I realised my sacrifices weren't going to be acknowledged in the end so there was no point to keep working with them. If I was going to build something with them, I needed to know we were a family, a team and I didn't get that feeling but I really learnt a lot which helped develop my skills."

Regina then joined one of the large banks in Ghana, Zenith bank, at a time when they decided to launch their electronic banking platform. "I was the only developer and female [employee] in the bank's IT department." Facing a lot of challenges from workplace discrimination to a gender pay gap, Regina felt deeply dissatisfied with her job. She quit and started Soronko Solutions. "[At the time], I was doing a project with Zenith bank and

convinced them that the turn-around time of hiring somebody else for them to rebuild – because I built the application they were using – was going to waste time and the product was already live in the market so why don't they just continue to let me do it and I would give them a good rate. I made sure I was on good terms with everyone before I left my job, so I was given the contract.” Regina was able to successfully convert the social capital she had acquired through her relationships with her former colleagues into a contract. Regina built Soronko as a software development firm that worked mainly with banks and SMEs. She differentiated herself by “delivering on time and on budget” and developed a very strong reputation and brand around that. As a result, “[her] business became driven 100% by referrals.”

Regina Honu has never raised any institutional capital for Soronko Solutions.

The truth is I didn't know anything about raising capital and as I am sure you may discover with some other female founders in the beginning, I didn't even think I was investable. So, with lack of adequate information on capital raising along with self-doubt, I decided to make money small, small. I also felt funders would be biased towards me as I was constantly made to feel my place was not in technology as a woman. This was the early days.

### 3.3.3 “M&A with no cash” (Betty Enyo Kumahor)

Betty officially became a tech entrepreneur when she founded her own firm Cobalt Partners. By the time Betty founded Cobalt in 2014, she had already amassed significant experience in both technology and business. Betty's first experience with technology was with a computer at home growing up, where she played Atari video games. Her older brother, who attended boarding school in England and was a “computer whizz,” during his holidays in Ghana, would teach her how to change the boot sequence for Microsoft DOS, which she found exciting.

At Ghana International School (GIS), one of the most elite international schools in Ghana, Betty was introduced to Computer Science as one of her elective courses in her University of Cambridge IGCSE curriculum. GIS was one of the first institutions in Ghana to adopt the internet in the early 1990s. Betty shared that, at GIS, “I learned Lotus 123 and QBasic... I loved coding...I loved the process of creation.” Betty carried this love for computers and coding throughout her higher education. While she studied Chemistry in her first degree at the University of Virginia and Columbia College, she also took several computer science classes including classes in software engineering. During her Master of Science in Medical Informatics at the Medical College of Wisconsin, she further developed her skills in coding. This became useful in her professional life after school. She joined the Medical College of Wisconsin Clinical Informatics team as an Informatics Consultant from 1997 to 1998. She was recruited to model and develop enhancements to a web-based/SGML/XML/PERL clinical decision support system (DSS) used to determine appropriate radiology diagnostic techniques. She also conducted human-computer interaction and user-acceptance testing.

Later as an Associate Consultant at the Computer Sciences Corporation in Milwaukee from 1998 to 1999, Betty worked on migration of an IBM Mainframe Health Management system application to an ORACLE/UNIX-based CSC application. Betty then moved to Atlanta, where after driving school buses while looking for a job, she eventually landed one as a Consultant at Zawadi Enterprises where from 1999 to 2000 she modelled and developed Visual Basic applications to track USAID Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome (HIV/AIDS) projects worldwide. She joined WorldCom as a financial systems analyst based in Atlanta. “Even though I was operations

at WorldCom, I was coding. I developed a tool that took all of WorldCom's billing into the core systems that MCI had built. I developed this tool and used the tool and run it every month".

Thereafter, Betty joined Ernst & Young (E & Y) as a systems analyst for six years. Then she got promoted in 2006 to manage technology programmes for E&Y's global advisory services practice for three years. After a GIS classmate passed away, Betty was shaken by his death and inspired to move back to Ghana after fifteen years of living in the United States. She transferred to E&Y's Accra office where she was an Executive Director managing the firm's IT Advisory and Audit portfolio across West Africa. While she was at E&Y, she co-founded an organisation called Ghana Women in Information Technology (GWIT).

In 2012, Betty left E&Y and was recruited to join Thoughtworks where she spent two years as its Managing Director in charge of Africa, building its software consulting practice across eighteen countries on the African continent. "When I left Thoughtworks, I had twenty-one clients that wanted me to come and work with them. I made an Excel list of all of them. I looked at the list and realised I can't say no to all these people. So, I decided I am going to start my own company [and serve all of them]."

Betty started Cobalt Partners in an unusual way. She started by acquiring ExplainerDC, one of the first tech companies focused on web development in Ghana (founded in 2000). The company had several existing clients with live projects but had been overwhelmed with debt that became unmanageable. Under the terms of the acquisition, Betty took over the entire business and assumed all liabilities. The seller also received a deferred cash settlement, which Betty funded from operations after

significantly improving the company's cash flows and expanding its suite of services offered to clients. Hypothetical numbers illustrate such a deal. Let us assume that ExplainerDC had a debt of \$100,000 with an interest rate of 15% (which is in the ballpark of market ranges for venture debt of this nature) which means interest payments are \$15,000 a year. ExplainerDC was generating revenues of \$50,000 with an EBITDA margin of 30% (which is in line with median margins for software companies), which would imply \$15,000 in EBITDA.<sup>42</sup> ExplainerDC was in trouble because all its EBITDA was going towards debt servicing; it was in serious financial distress. Betty's company Cobalt Partners effectively committed to taking over the company, valuing it at \$150,000 enterprise value (\$100,000 for the debt and \$50,000 in implied equity value). So, Cobalt proposed to buy 100% of the shares of the company and assumed 100% of the liabilities. But for the equity part of the value, the \$50,000, Cobalt proposed to pay the owner in a deferred cash settlement in two years.

Betty has turned Cobalt Partners into one of the leading technology development companies in Ghana.

We still do a lot of website work; we tend not to do simpler websites anymore and to do more complex websites. We are not the cheapest firm on the market, so we tend to do more complex [websites] ... We also do all sorts of platforms, we have a Customer Intelligence CRM Solution, Custom Built CRM Solutions for Financial Service Institutions, we have done a Fund Access Trading Platform for a company here, we do try to partner with entrepreneurs and sort of get ideas to come alive, so we have done things like a trading platform for micro manufacturers. We have done a lot of mobile apps for example for media houses like TV3, we did their website and their mobile apps.

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<sup>42</sup> EBITDA is shorthand for earnings before interest, taxes, depreciation, and amortisation. It is generally used as a proxy for cash flow profits of a business.



Under Cobalt/ExplainerDC, Betty launched Yellow Pages Ghana, a mobile application on Android which became the most accessed directory service in Ghana with over 36,000 unique visitors per month.

#### 3.3.4 Late Exposure to Technology (Florence Toffa)

All the women I interviewed grew up with considerable sources of economic, cultural, and social capital with the notable exception of Florence Toffa. Florence was born in the Volta Region to what she describes as a low-income family. Her father is a farmer, and her mother is a small-scale trader who sold farm goods and sugarcane drinks. She has five brothers and four sisters. To help support her large family, she would carry a basket of tomatoes and other foodstuffs on her head and sell them in the community. She moved to Accra to live with an aunt and returned to the Volta Region for secondary school. Florence excelled in her secondary school exams, getting all A's. This helped her gain admission into Ghana's premier university, the University of Ghana, Legon, where she studied Psychology.

At Legon, Florence traded part-time, selling everything to her classmates: from mobile airtime to Compact Discs (CDs) to second-hand jeans, to help pay for her fees. After her undergraduate education, she did her National Service at the School of Public Health at the University of Ghana where she was first introduced to the internet. At the time, MEST, the Meltwater Entrepreneurial School of Technology, had just been founded in Ghana to provide training, seed investment, and mentorship for what they call "the next generation of globally successful African software entrepreneurs." (I provide a case study of MEST in chapter 5).

Florence was accepted into the first cohort of Entrepreneurs in Training (EITs) after a rigorous admissions process which included an online application, a telephone interview, a quantitative test that tests for logic, critical thinking, system design and process, and a set of three in-person interviews – a group interview, a group stress interview where you are told to come up with a start-up idea in five minutes with a small team, and an individual stress interview. MEST typically has twelve thousand applicants and through this process chooses sixty EITs for its one-year programme. At the time Florence was admitted it was a two-year programme. MEST's training programme provides a graduate level course in software development, business, and communications. EITs gain experience building, validating, and growing companies from scratch. All the EITs receive free housing, free meals, and a monthly stipend. Students learn software development skills like Java Programming, Web Analytics, UI/UX and Web Development, Scrum & Agile Development, Algorithms Development, and Core Programming Languages.

In addition, they are also taught and trained on business and entrepreneurship skills such as finance, accounting, unit economics, business plan development, lean start-up methodology, strategy, marketing, how to pitch to investors, how to communicate business ideas, key performance indicators and performance metrics – they learn the language of business and entrepreneurship and finance, as well as how to 'perform' in business and finance circles, how to talk and how to act. Thus, a diploma from MEST is not just a credential about knowledge; it signals to the market that its graduates do not just possess technical skills such as coding, but also understand how to 'act' around investors and how to 'pitch' their ideas in ways most likely to attract funding. At the end

of the MEST programme, the sixty EITs pitch their start-up to the MEST Incubator for funding. Florence pitched her start-up, a video conferencing application called Netwek, but failed to receive any funding.<sup>43</sup> After graduating from MEST, Florence was unemployed. Having been exposed to the digital world, she became interested in pursuing a career in technology. With no job prospects, she started a fashion blog called myafricafashion.com which she designed and built herself, showcasing African fashion and designers. It became so popular that on alexa.com, a website that ranks the popularity of websites globally, her blog became one of the most trafficked websites in Ghana. So, when the World Wide Foundation (WWF) was looking for partners for their project in Ghana, someone on Facebook recommended that she apply. She did and WWF checked alexa.com and reached out to her for an interview.

There were two panel members. [They asked] questions about my experience at MEST and my work experience. The conversations were about technology and project management...I had done a bit of project management at MEST...they let you start your own project, interview customers, and talk to people...and while I was at the School of Public Health, even though we had a Head of Department, I was basically managing the department.

Because of her training in digital technology, software coding and project management, Florence was able to speak the same “tech” language as her interviewers in the United States. She aced the interviews and was accepted to create her own start-up, which she called Mobile Web Ghana, and was given a \$1 million grant to develop value added services on the use of mobile phones and to train and empower young people to create SMS based start-ups.

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<sup>43</sup> In Chapter 6, I examine the equity capital raising landscape in depth.

Florence is emphatic that technology is inclusive: “technology levels the playing field for everyone irrespective of where you are – Bangladesh, China, Bolgatanga, Tamale – even if the Internet [connection] might not be good, you have the opportunity to tap into the global world and to be able to add value. Even putting up your simple website and sharing it on Facebook for people to know you exist for them to order on it if you are selling something”.

Today as CEO of Mobile Web Ghana, Florence describes herself as middle class. In her words, “I have high purchasing income, I have global travel exposure, I have a good standard of living, and I’m very comfortable.” As Bowles (2013, 214) has noted, “Ghanaians are often reticent to directly discuss numbers when it comes to financial transactions.” Many women discuss their financial earnings through metaphors about ‘comfort’ (Ibid). Florence, with her new standards of comfort, has now amassed significant economic, cultural, and social capital that is a far cry from when she was a child, experiencing intergenerational social mobility. She can invest in property, educate her son in private school, support her family in the village, and travel abroad for vacation. As I will elaborate in the ensuing pages, Florence’s story offers an interesting insight into how class mediates entry and success in the digital economy for women, with the story of her own success challenging the rhetoric that “anyone” can make it, which has become a mantra of supporters of the digital economy.

### 3.4 Discussion

Drawing these case studies together, I observe three important themes: cultural capital matters; social capital matters; and conversion strategies are key to scaling their businesses. In short, class matters.

### 3.4.1 Cultural capital matters

Like most digital entrepreneurs in West Africa, Farida, Betty, and Ethel all obtained their further education overseas. Moreover, as Cuvellier and Bayen (2021) demonstrated in their research on the education credentials of Africa's digital entrepreneurs, degrees from foreign universities have a higher cultural capital status than degrees from local universities, with 65% of all start-up CEOs who raised funding in Africa having foreign degrees, with strong differences depending on the country. For example, whereas in South Africa and Egypt, 67% of deals were signed by a CEO who had studied locally, those numbers drop significantly for Nigeria (28%) and Kenya (16%). From a gender perspective, female CEOs are less likely to have studied on the continent compared to male CEOs (26% vs 36%), with 90% of the amount raised by female CEOs going to CEOs who have studied abroad. Among the CEOs who raised start-up funding, four non-African universities stand out for having the largest market share: Harvard University, Oxford University, Massachusetts Institute of Technology (MIT), and Columbia University. Among my interlocutors, 71% studied abroad.

For Florence who did not pursue education abroad, education still mattered in her trajectory. Florence got accepted into the University of Ghana based on her excellent academic results. Schools replicate existing social inequalities (Bourdieu 1984, 1990). Robson et al. (2008) note that in sub-Saharan Africa, the children of the elites are more likely to attend university and “entrepreneurs from middle- or upper-class families will have higher levels of human capital and will thus be more likely to introduce innovations.” (333). According to the Institute of Statistics, Social and Economic Research at the University of Ghana, only 10% of university graduates find jobs after their first year of

graduation (Ghana News Agency, <https://www.myjoyonline.com/news/2017/june-3rd/only-10-percent-of-graduates-find-jobs-after-first-year-isser-research.php>, 2017).

The National Labour Commission estimates the number of unemployed university graduates in Ghana at 700,000 (Biney, 2015). Meanwhile, 300,000 graduates are being produced every year by the 140 accredited institutions in Ghana (Donkor, 2014). For many graduates, having a degree is the bare minimum – getting the job is all about ‘who you know.’

For Farida, she was fortunate to belong to a family with the financial means to provide her with a computer at an early age, which allowed her to develop the technical skills that would later give her a head start in tech. From an early age, she was already amassing the relevant cultural capital (Bourdieu, 1986) that would prove to be highly prized in the digital economy. She continued to amass all these credentials in I.T., which further accumulated her cultural capital.

As Lareau and Horvat (1999) observed in their study of primary school students in the United States, students with more valuable social and cultural capital will generally outperform their peers with less valuable social and cultural capital. Does the nature of digital learning challenge the notion of the social reproduction of inequalities in educational institutions? MEST makes the case for the digital economy as an opportunity equaliser, but is this really the case? While Florence touts the apparent inclusiveness of the Internet, her experience suggests otherwise. As one of the few female technology entrepreneurs in Ghana who did not grow up with exposure to computers, she learned the language of computers and digital technologies and more, starting with her acceptance to the University of Ghana and then later with her matriculation to MEST.

MEST only accepts 0.5% of its applicant pool, an admission rate significantly lower than most selective institutions of higher learning, challenging her claims that “anyone” can make it.

A key inflection point for Florence became her acceptance into the MEST programme. Florence’s training at MEST – the institutional context in which the school taught Florence how to be successful, the language of business, entrepreneurship, and finance, how to pitch, and all the elements that are necessary to enter and successfully navigate the digital economy – suggests that there is a sense in which entrance into the digital economy is mediated by cultural capital that is framed and shaped in an institutional context. MEST prides itself on creating an open playing field. Yet the very nature of MEST’s admissions, seemingly “fair” because “who you know” does not matter, still privileges applicants who are able to better perform in the interview. As we saw in her case study, she also learned business and entrepreneurship skills, importantly learning the language of business and finance and how to “perform” before investors. Thus, a diploma from MEST isn’t a certification of knowledge; it is also a signal to the market that its graduates are investor ready. In this way, MEST graduates are trained to convert cultural capital into economic capital in the form of equity investment. But as we saw with Florence, that process of conversion is not always successful. Possessing cultural capital alone is not sufficient for raising equity investment. However, Florence was ultimately able to take her coding knowledge and skills and convert it into an asset – a highly trafficked website – which represented symbolic capital because it demonstrated her technical abilities as well as her marketing abilities to be able to attract the level of popularity that

it did. This eventually led her to winning the \$1 million grant from WWF to seed her business, Mobile Web Ghana.

### 3.4.2 Social capital matters

Regina's experiences and feelings about capital-raising match research in other parts of the world. Research shows that it is more difficult for women to gain access to capital and resources to start or expand a business compared to men (Johansson & Malmstrom, 2008; Marlow & Patton, 2005). There is a gender dimension to acquiring capital for start-ups that privileges male entrepreneurs (Marlow & Patton, 2005). Women entrepreneurs are sometimes limited by "informal barriers based on values and beliefs associated with male and female stereotypes" – for example, many women, as in the case of Regina, believe the myth that "women entrepreneurs lack the ability to develop businesses relevant for venture capitalists" (Lindvert et al., 2017, 764). I discuss these challenges in-depth in Chapter 6.

Many of my interlocutors relied on financial support from family to start their enterprises. For example, Ethel was able to convert the social capital that she had acquired through kinship into economic capital in the form of start-up capital and financial support from her family. Like Ethel, Regina was also able to convert social capital acquired through kinship into start-up capital. As she openly shared, "I had a lot of support from my father and my mother." Many studies suggest that the extended family system in Ghana is a source of social capital for entrepreneurship development (Robson et al., 2009; Takyi-Asiedu, 1993). Entrepreneurs in Ghana often use kinship ties and networks to gain access to suppliers, customers, financiers, and government authorities (Robson



et al., 2009). Ghana has very limited institutional finance infrastructure for start-ups (Robson & Obeng, 2008).

Social capital is very important in entrepreneurship development, producing immense competitive advantage (Robson et al., 2009; Watson, 2007; Burt, 2000). Various studies on network structures and firm performance (Granovetter, 1983; Burt, 2000; Robson et al., 2009) suggest that networks of weak ties, which Burt (2000) describes as contacts with business partners, acquaintances, co-workers, etc., have a greater impact on firm performance than networks of strong ties (spouse, parents, friends, family). However, “evidence from Ghana reveals that networks are likely to be dominated by strong ties which are likely to have a marginal impact on the performance of small firms in terms of survival, growth and innovation activities” (Robson et al., 2009). Like Robson’s findings (2009), my research also showed the importance of strong ties, however in contrast to his conclusions, for my interlocutors, those ties had significant impact on the performance of their firms.

While many studies posit that social capital is correlated with positive impact on entrepreneurs and firm performance and especially beneficial to female entrepreneurs, some scholars have increasingly questioned whether theoretical frameworks on social capital from the global north economic contexts are applicable to women entrepreneurs in the global south, where socio-cultural norms and religious beliefs could be stumbling blocks (Lindvert et al., 2017), though my research did not support such views. Lindvert et al. (2017) draw on Portes (2010) characterisation of social capital “as not only central to the provision of resources through family and nonfamily group members, but also, more importantly, as a means of social control, which functions as a constraint and hindrance

to individual development.” Thus, social capital could “derail economic goal seeking” and the “enabling or constraining effects of social capital could also be contingent on culture, religion, gender, or other contextual factors.” (760).

For the female technology entrepreneurs I studied, I did not generally find that social capital was being used as form of social control. However, Regina did share that she believes traditional norms and values shape expectations of what types of entrepreneurships are appropriate for a woman. “It is easier to raise money for non-technology businesses as a woman...raising capital from family and friends...if a woman wants to do hairdressing, dressmaking, open a shop, etc., she will find it easier to convince her father, her husband, her mother or her uncle to give her the initial capital to start.” For some women entrepreneurs in Ghana, gendered norms and social mores can create barriers that impede their ability to convert the social capital into start-up capital for technology ventures because “tech” operates outside stereotypes of women entrepreneurs.

### 3.4.3 Conversion strategies to scale their businesses

My interlocutors also employed conversion strategies to scale their business. For example, Ethel shared that she leverages her cultural capital – the prestige associated with her foreign degree and her work experience overseas – to win clients for her business. “When I mention my degree from the UK and my work experience in London, I have a higher chance of winning a client’s business.” Thus, Ethel can market her global credentials as a means of attracting more clients and growing her business.

I also observed conversion strategies employed by Betty in growing her enterprise. Most notably, Betty’s acquisition of ExplainerDC (structured as described in the case

study above) is extraordinarily unusual and required the skilful combination and conversion of various forms of capital including symbolic capital (her global reputation which gave comfort to the seller to accept a deferred cash settlement and her ability to execute), social capital (her relationships with clients at Thoughtworks who would become clients at Cobalt – what Granovetter (1973) would call “weak ties”), cultural capital (her deep knowledge, experience and credentials in the technology space) and economic capital (her significant savings which allowed her time and breathing room to turn around ExplainerDC’s operations because she would not need to immediately live off its cash flows or profits).

### 3.5 Conclusion

As many of these cases have shown, possessing only one form of capital is often not sufficient for female technology entrepreneurs to succeed. Female technology entrepreneurs require a combination of several forms of capital and conversions from one form to another for entry into and success in the technology industry. There are also specific forms of cultural and symbolic capital in the field of technology that are required for success. Though formal education provides some credibility (as in the case of Florence graduating from the University of Ghana), she still lacked crucial forms of capital for “position-takings” (Bourdieu, 1998, 7) until she was able to develop the relevant cultural capital which later resulted in her winning the grant for \$1 million.

None of the women in the case studies in this chapter have raised any economic capital from venture capital, some by choice, and others not for lack of trying. In fact, of the over twenty female technology entrepreneurs I interviewed, only one successfully raised capital from venture capital firms. I will demonstrate the gender financing gap in

venture capital in Chapter 6. In this chapter, we have seen how social networks are crucial to accessing resources; these networks are based on kinship, occupation, school affiliation and others. People are keenly aware of the importance of these networks and some of my interlocutors are creators of networks, such as Betty's creation of Ghana Women in Information Technology and Ethel's creation of Women in Tech Africa. These networks have material and symbolic value (Spronk, 2020).

The case studies reveal that majority of the female entrepreneurs in the tech ecosystem tend to be return migrants. Hamidu's research shows that, in general, a significant percentage of returnees in Ghana are entrepreneurs (2015). Returnees often bring back skills, capital and "transformed attitudes to established social hierarchies of status, age and gender, to work and to enterprise" (Ibid: 145, citing Robinson, 2004).

Like Overa's (2017) findings in the oil and gas industry, my research also showed that many of the successful female tech entrepreneurs were born into "good" families and thus were endowed with symbolic capital in the form of a good reputation and hereditary economic capital in addition to receiving formal education and start-up capital acquired through kinship. These "advantageous combinations of capital forms thus produce differentiated positionalities, thereby (re)producing conditions for class formation" in the process of business growth associated with the technology industry (372).

The life histories and biographies of the entrepreneurs in the case studies are all interconnected with global processes such as international migration, foreign direct investments, economic neo-liberalisation, and globalisation. These entrepreneurs belong to Ghana's elite (though they prefer to be called middle-class) and their class positions have clearly enabled them to start and expand their ventures in the technology industry.

In the next chapter, I look at a sub-set of my interlocutors who are involved in e-commerce, a group I call 'digital traders'.

## Chapter 4: Ghana's Digital Traders

### 4.1 The Instagram Skin Guru

Freda was born in Ghana to a mother who was a doctor and a father who was a businessman. “Growing up I travelled a lot...mostly in Europe before finally relocating to the United States where I attended high school, college, and worked before deciding to travel again.” She left the United States and relocated to Paris where she obtained a Master's in Public Administration from Sciences Po, one of the elite universities in France. A week before her graduation, Freda was with her thesis advisor at a conference which was attended by François Hollande, the president of France at the time. “My [thesis] advisor was once an advisor to Hollande, so he and Hollande are laughing and catching up and stuff. While they were talking, Hollande gets a phone call. He said, ‘one second I need to pick up this call’. It was the European Union (EU) Ambassador to Ghana. After the call, Hollande turns to my advisor and tells him, ‘We need someone sharp and brilliant who has studied here and knows EU policies and is willing to work at the EU office in Ghana.’ My advisor pointed to me. Within a week, Freda was in Ghana working for the EU.

While in Ghana, Freda was invited to the wedding of a close friend. Since she was a child, Freda had used and experimented with shea butter, mixing it with different essential oils. Instead of giving a cash gift at the wedding as is customary, Freda offered to make souvenirs for the wedding guests for free. She made scented shea butter for the 500 wedding guests. “People loved it and over 200 of them wanted to order more.” That gave birth to Kaeme, which is Twi for “remember me.” Without a physical store or a retail footprint, Freda launched Kaeme online in 2016. “I launched it online with a video and

posted it on Facebook... in less than 72 hours, over 28,000 people had watched the video.” Kaeme leverages Facebook, Twitter, WhatsApp, and Instagram for marketing and for placing orders. “Our biggest platform is Instagram...I check the Kaeme page every 5 minutes.” Kaeme’s Instagram page had 5,552 followers and its Facebook page had 2,450 followers as of November 2021. Kaeme has a wide range of skin care products ranging from black soap to shea butter of different scents to scented candles. Kaeme products range in pricing from the cheapest product being \$8.99 for black soap to the most expensive product, the scented candles at \$34.99. The Kaeme.com website features prices in US dollars but can convert prices into any currency of your choice.

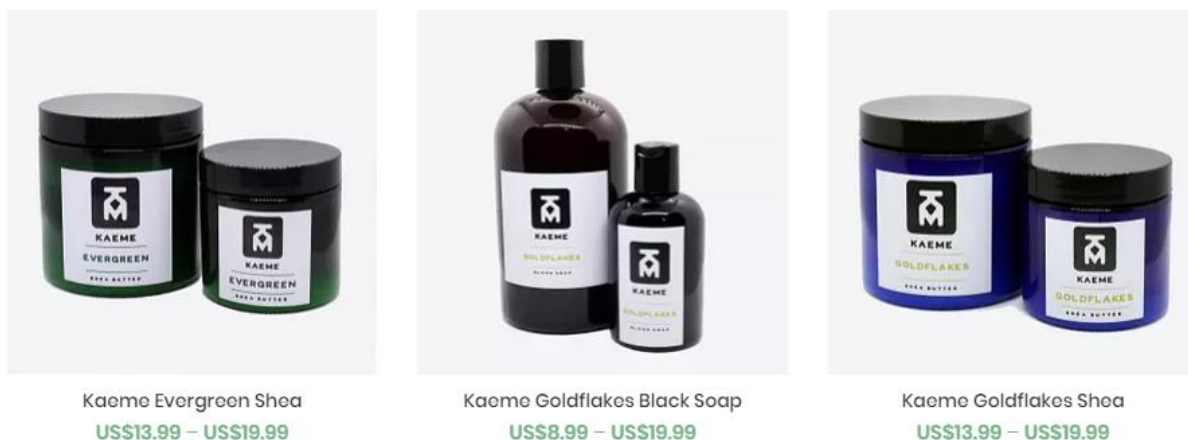


Figure 4. 1: Prices of Kaeme.com in US dollars

## 4.2 The Online Jeweller

Priscilla was born and raised in Ghana. She attended Aburi Girls’ Secondary School for senior high school where she pursued visual arts. She then proceeded to university at the Kwame Nkrumah University of Science and Technology in Kumasi where she studied Industrial Arts. “You study a course like Industrial Arts in Ghana where they don’t teach you anything about entrepreneurship so when you are done with the

programme you are like okay, I have produced this but what do I do with it?” Following her programme, Priscilla worked with British American Tobacco, Nestle and then Jumia for a total of nine years in various roles ranging from HR, marketing, communications, and sales management.

In 2015, she founded her company Korlekour, which is also her middle name. As she explained to me:

Korlekour is the name of the second girl child in the Krobo tribe. Krobos are well known for their fascinating and colourful beads made from glass and clay. A Krobo child knows her beads from a young age because you are adorned with beads in every celebration or festivity. As a child growing up with my grandmother at our home, I played with her huge beads collection which colours, and shapes fascinated me and tickled my interest to learn more about them from a very young age.



*Figure 4. 2: Image of Priscilla, the founder of Korlekour showcasing her beads*

Priscilla was not finding fulfilment with her jobs at British American Tobacco (BAT), Nestle or even Jumia which she joined in 2016 as a Social Media Manager.

Korlekour was born due to my undying passion and dream to be creative and be a force in the creative arts industry. At Korlekour, we interlace our beads with other materials to capture the essence of today's woman; our



designs aim to be fun, funky, bohemian, and quirky with the core value of being African. We pride ourselves by sourcing 80% of our beads from the roots just like my grandmother did to ensure the cycle of wealth is maintained locally. We believe in sustainability and our environment and as such we ensure our packaging is made from eco-friendly and/or recycled materials.

What Priscilla describes fits a retail jewellery store, except her store exists online.

“I have an online shop which is on StoreFoundry. On StoreFoundry, I decide which products I will be putting there and which ones I will put on Instagram. The minute I am done with the physical production [of the jewellery], it takes me about another week to sort out all these things and after that I start to do social media sponsored posts [for marketing]. And the minute those are up, it takes a lot of time because people will be messaging and calling you at odd hours. If I am sponsoring the ads for seven days it normally takes like two weeks to get all the orders out, I don't do bespoke, so I just send them out with my delivery guy. So that's literally the chain.” Even though Korlekour is “online” via StoreFoundry, “most of my customers don't order through the website...they look at the stock/products on the website and use the website to determine my credibility and legitimacy...and then they usually order via WhatsApp, or they call.” Korlekour had 3,259 followers on Instagram and 2,041 followers on Facebook as of November 2021.

Priscilla and Freda are e-commerce entrepreneurs, ‘digital traders’ as I call them. Over 40% of the 21 female tech entrepreneurs that I interviewed for my research were involved in e-commerce. They share some similarities with Wing-Fai (2019)'s ‘digital artisans’ – the mostly university-educated millennials participating in the ‘hipster’ economy in East Asia. Yet, largely due to the infrastructural deficiencies in Ghana, these digital traders also share similarities with the offline behaviour of market women traders

in Clark's (1994) work and the cosmopolitan traders in Bowles' (2013) ethnography. Where the women traders in both cases sold their goods in physical markets or shops, the digital traders in my ethnography sell their goods online. However, as one of my interlocutors described it: "In Ghana, you can never have a fully digital business ... unlike the United States or Europe where the infrastructure exists and you can plug and play, here you have to figure out everything from payments to transportation ... there is a lot of offline one has to deal with when building an online business."

The 'offline' nature of e-commerce in Ghana was most pronounced during the COVID-19 lockdown imposed by the President of Ghana in March of 2020. Yet, COVID-19 also created significant difficulties for small-scale e-commerce players in developed markets such as the United States. This suggests that the 'offline' nature of e-commerce in Ghana is a more universal feature of e-commerce globally. Offline is very important to e-commerce and highlights the importance of basic infrastructure to support a thriving digital economy. These 'offline' practices further illuminate the challenges of digital entrepreneurship for women in Ghana and disrupt the narrative of digital inclusion and digital leapfrogging as discussed in chapter 2. Thus, the lessons from this chapter extend beyond Ghana.

This chapter illuminates the experiences of these digital traders. I first situate their experiences in the literature on e-commerce globally, and then the African literature (which is very limited). Boateng et al. (2008) in a literature review of e-commerce in least developing countries reported that Africa is the region that is most under-researched with only 13% of all the literature on e-commerce in developing countries associated with the region. The literature on e-commerce generally is focused on developed countries (Uzoka

et al., 2007). There is also literature on IT and the bottom of the pyramid (BoP) in the global South e.g., Schwittay (2009) has written about the emergence and evolution of global corporate citizenship programmes in the IT industry, which focus on BoP. However, that is parallel rather than connected to what I am discussing here because the BoP does not reflect my interlocutors at all. I will also analyse the relationship between gender and commerce, given that trade in Ghana is dominated by women. Next, I show how digital traders are navigating infrastructure challenges and offline relationships in Ghana. Finally, I will showcase how digital traders are adapting local practices around *to-so* (bargaining) in a digital context. I will be focusing on the experiences of my two interlocutors in this chapter: Freda Obeng-Ampofo, the founder of Kaeme, and Priscilla Korlekour Agyeman, the founder of Korlekour Jewellery.

These case studies illuminate the intersection of the business literature on e-commerce with the anthropological literature on market traders through the focus on the offline nature of digital trading. By connecting the e-commerce literature to existing anthropological studies on women traders in Ghana and to my ethnographic material, I contribute to the expanding research on digital entrepreneurship and e-commerce, showing how female digital traders navigate the infrastructural challenges and the idiosyncratic digital landscape in Ghana to sell goods and services online.

### 4.3 E-Commerce

What is e-commerce? Krogman and Khumalo (2016) argue that is challenging to define e-commerce because it is not tangible, and its environment is rapidly changing. The Organisation for Economic Co-operation and Development (OECD) (2000) defines e-commerce as “doing business over the internet, selling goods and services which are

delivered offline as well as products which can be ‘digitised’ and delivered online, such as computer software” (OECD, 2000). The World Trade Organisation’s (WTO’s) Work Programme on E-Commerce described it as “the production, distribution, marketing, sale or delivery of goods and services by electronic means” (WTO, 1998). The United Nations Conference on Trade and Development (UNCTAD) defined e-commerce as any purchases or sales conducted over computer networks, spanning all formats and devices, from computers to mobile phones (UNCTAD, 2015). The payment for the goods and services and logistics of delivery do not have to be online, however. UNCTAD estimated the value of global business-to-business (B2B) e-commerce at over \$15 trillion in 2012, with business-to-consumer (B2C) estimated at \$1.2 trillion (Baker, 2017). The key factor about e-commerce lies in its application of advanced technologies to influence cross-border trade and value chains (Preville, 2016).

The Internet has contributed to the creation of new consumer markets; new players have emerged that serve as bridges between producers and consumers for efficient market transactions; and emerging technologies and market drivers are revolutionising the processes of production and consumption (Gopal et al., 2003, 9).<sup>44</sup> Yu (2017), in her work on China, noted the role of the digital economy, powered by modern technologies such as the Internet, cloud computing, big data, Internet of Things and FinTech “to

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<sup>44</sup> There are two powerful “techno-economic” forces that are transforming commerce (Ibid, 10). The first force, the micro-consumption enabler, is powered by the advancements in artificial intelligence and the use of autonomous intelligent agents who can execute micro-tasks of search, transaction cost reduction and management of product acquisition and consumption in the smallest units possible. These technological advancements enable consumers to trade at very low dollar levels, offer greater versatility, require less infrastructure, and generate lower transaction costs. (Ibid, 10). The second force, the micro-commodity enabler, creates new markets for commodities that were previously not being traded, and disaggregates these products and services into the smallest possible units of consumption. This is important because “micro-markets offer better allocative efficiencies” and “sellers who practice micro-commoditisation can reap economic benefits from enhanced resource allocation, dynamic pricing that speedily responds to changing demand and supply conditions, and mechanisms that enhance customisation and interactivity effects.” (Ibid, 11).

transform social interactions, drive productivity, stimulate innovation and enable economic activities to be more flexible, agile, creative and smart” (3).<sup>45</sup> China offers many lessons for the development of e-commerce. It is now the world’s largest e-commerce market with the largest transaction volume of e-payments. Its society is now virtually cashless (Ibid, 4). Yu calls on us to think differently about assessing e-commerce, nothing that we need to “redefine the ‘who’ of digital economy as an unlikely collection of unimagined individuals and underrepresented groups; the ‘what’ of digital economy as measured by its social and cultural impact rather than its volume of business and transaction; and the ‘how’ of digital economy in terms of the implication of and impact on grassroots players in their strategies for survival” (3).

The literature is mixed on the benefits of e-commerce. E-commerce is said to be linked with higher consumption, income, and employment (Baker, 2017). Ndonga (2012) posits that e-commerce has the potential to facilitate trade and contribute to growth in GDP. E-commerce increases business efficiency by increasing the speed and accuracy of business trades and reducing transaction costs. It also increases market efficiency, expands the portfolio of products and services offered, and allows for customised services (Ibid, 247 – 250). E-commerce also gives businesses ubiquity and global reach (Shafiyah et al., 2013, 1358). However, other scholars have pointed to limitations and challenges such as privacy, cyber security, lack of personal touch, fraud, the cost and expertise

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<sup>45</sup> Cloud computing is “the delivery of computing services – including servers, storage, databases, networking, software, analytics and intelligence – over the Internet (‘the cloud’) to offer faster innovation, flexible resources and economies of scale” (Microsoft, 2020). Big Data is “data that contains greater variety arriving in increasing volumes and with ever-higher velocity” (Oracle, 2020). The Internet of Things is “the concept of basically connecting any device with an on and off switch to the Internet (and/or to each other). This includes everything from cellphones, coffee makers, washing machines, headphones, lamps, wearable devices and almost anything else you can think of” (Morgan, 2014). FinTech, short for financial technology refers to startups and tech companies that leverage digital technologies to deliver financial services (PwC, 2016).

needed to host e-commerce infrastructure, policy and regulatory barriers, low e-commerce penetration rates, and lack of trust (Niranjanamurthy et al., 2013, 2361-5; Shafiyah et al., 2013, 1358; Savrul et al., 2014., 42). Other scholars have noted that the creation of new markets at the BoP does not always result in socio-economic improvement for the poor (Schwittay, 2011; Rankin, 2004; Elyachar, 2005).<sup>46</sup>

#### 4.4 E-commerce in Africa

Some scholars have argued that e-commerce has a potential for higher value-add to developing countries' economies as compared to developed countries (Dehkordi et al., 2011, 45). Yet, despite rapid growth in Internet connectivity, Sub-Saharan Africa has a low level of e-commerce penetration compared to the rest of the world (Ibam et al., 2018; Baker, 2017; Ndonga, 2012; Kabanda & Brown, 2017; Okoli & Mbarika, 2003; Uzoka et al., 2007; Dehkordi et al., 2011).

The poor state of e-commerce across Africa has been attributed to several factors: lack of consumer trust in local Internet services and products (Pavlou 2003), poor ICT infrastructure (Okoli & Mbarika, 2003; Rose & Straub, 2001; Kabanda & Brown, 2017; Ndonga, 2012; Dutta & Roy, 2004), economic conditions (Mahmood et al., 2004), and socio-cultural factors (Uzoka et al., 2007; Okoli & Mbarika; 2003, Vatanasakdakul et al., 2004; Kabanda & Brown; 2017). Ibam et al. (2018) note that “several countries lack even an organised physical address system and cash on delivery is the main payment method that online merchants such as Takealot, Jumia and Konga among others, must deal with” (2). They add that additional obstacles include legal frameworks (see also Ndonga, 2012;

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<sup>46</sup> I discuss this in chapter 2. This literature while raising important questions about market assumptions has a different focus than this thesis because of the focus on the poor/BoP.

Dehkordi et al., 2011), high cost of connectivity, human capacity and infrastructural deficiencies in the transportation and delivery systems (Ibam et al., 2018, 2, see also Dehkordi et al., 2011, 45). Ndongo (2012) further notes the threat of cybercrimes in preventing a higher e-commerce penetration rate in Africa. The low level of e-commerce in many African countries has been attributed to their governments' low levels of adoption of digital technologies (Baker, 2017).

In one index which “represents the capability of nations to create, diffuse, adopt and use various components of the networked economy,” Africa scored a low level of e-readiness, with a mean of 2.22 on a 5-point scale, compared to East Asia at 2.99, the USA at 4.36 and the G7 at 3.91. (Uzoka et al., 2007, 2).<sup>47</sup> However, the study itself only analysed data from nine countries – Nigeria, Ghana, Cote D’Ivoire, Kenya, South Africa, Mauritius, Botswana, Egypt, and Tunisia – based on availability of data (Ifinedo, 2005, 54). The e-readiness index was based on weighted scoring of 52 different metrics.

While some of the metrics seemed credible, for example tertiary enrolment, 8<sup>th</sup> grade achievement in science, adult literacy rate, administrative burden for start-ups, high tech exports as percentage of manufactured exports and availability of venture capital, a few of the metrics, specifically the ones related to culture seemed problematic. Some of those indicators included “national culture is open to foreign influence” and English language usage. The idea that openness to foreign influence and English language usage should have any bearing on a country’s readiness to embrace digital technologies seems deeply problematic and reproduces the notion of Africa as a consumer and not a producer

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<sup>47</sup> E-readiness indices measure a wide range of variables including connectivity and technology infrastructure, the business environment, consumer and business adoption, legal and policy environment, the social and cultural infrastructure, and the availability of supporting e-services (Economist Intelligence Unit, 2006).

of technologies. In addition, the unstated assumption here is that foreign means global North as opposed to the fact that many African societies are extraordinarily open to other countries on the continent. Dehkordi et al. (2011) argue that “developing countries often have different cultures and business philosophies which limit the applicability and transferability of the e-commerce models designed by Western countries” (45).

I agree with Clapperton Mavhunga (2017), who, in his edited volume *What do Science, Technology and Innovation Mean from Africa?* stated: “The rationale for asking this question is that Africa appears on the technological map of the world as a blank or as a problem—in fact, as an ocean of problems—to be solved. But solved by whom? (ix).” We see this, for example, in Castells (2004) *The Network Society*, which uncomfortably presents Africa as outside the network and only references the continent when discussing AIDS. Mavhunga (2017) critiques the representation of science, technology, and innovation as phenomena alien to Africa, where the continent is never a creator but always a recipient. Mavhunga also argues that we cannot simply look at Europe’s modernisation without appropriately assessing the context of imperialism and colonialism and the role exploitation played in Europe’s advancement (Ibid, 2). He calls on us to “imagine a positive Africa—creative, technological, and scientific in its own way” and to recognise that “science, technology, and innovation are not Houdini acts of white people but the latest iteration of a long process of accumulative, multicultural knowledge production” (Ibid).

This alienation of Africa from technology was observed in the case of Jumia. Jumia, dubbed the ‘Amazon of Africa’ is the largest e-commerce company operating across Africa and the first ‘African’ technology company to list on the New York Stock



Exchange. However, Jumia's claim to Africa has been the subject of many debates. Its headquarters are in Berlin, its technology team is based in Portugal and its senior leadership reside in Dubai. A former managing director of Jumia Classifieds in Ghana and Nigeria shared that, "the truth is that the people at the top are definitely not African in any shape or form." Many critics, such as Rebecca Enonchong, a renowned African technologist with over 120,000 followers on Twitter, have pointed out that Jumia has co-opted an African identity to extract value out of the continent. Jumia's own co-CEO added kerosene to the fire when he claimed on a CNBC interview that the company's engineering team is based in Portugal because "the reality is that in Africa there are not enough developers" (British Broadcasting Corporation [BBC], 2020). Some of Jumia's country leaders defend the African-ness of the company, claiming that majority of its employees and all its customers are African.

Yet even though Jumia has been compared to Amazon, and both are similar in terms of interface and business model – you can order goods online at amazon.com or jumia.com and have it delivered to you – they each rest on different infrastructure. There are clear differences in postal services, addressing systems, roads, payments, and other infrastructure critical for a successful e-commerce ecosystem. I discuss infrastructure in detail later in this chapter. The impact of this disparity in infrastructure – with Amazon generally operating in regions with very developed infrastructure while Jumia operates in regions with major infrastructure gaps – has a material impact on financial performance and margins. It means that it is more expensive for Jumia to operate its business and deliver a package to a consumer than it is for Amazon. This has implications for market performance of these businesses.

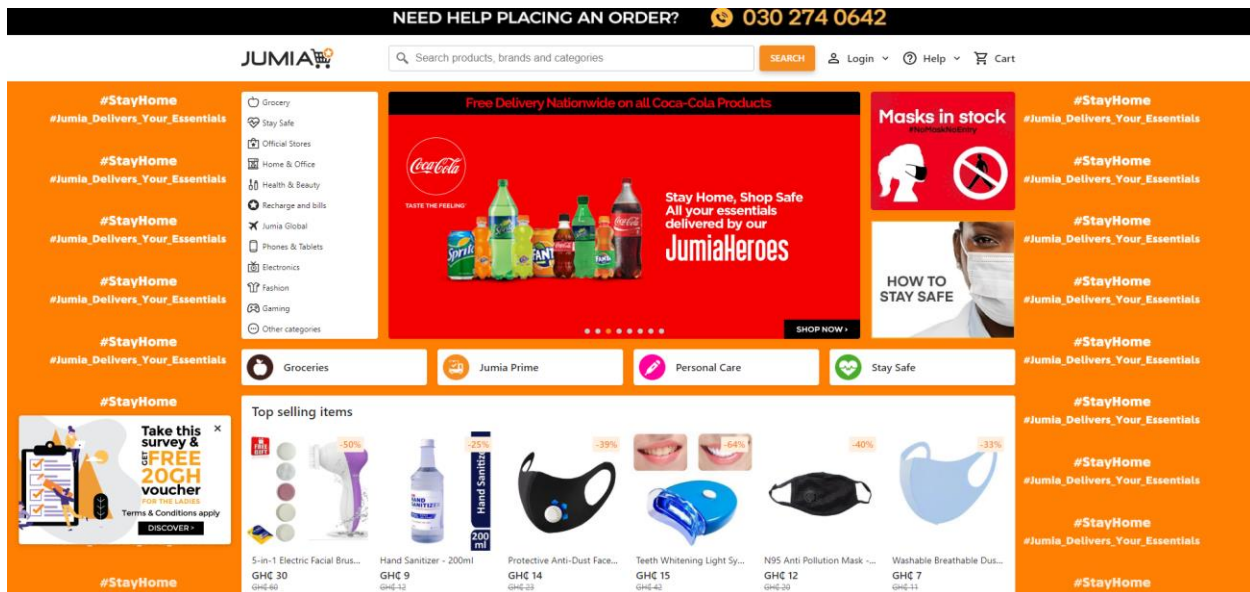


Figure 4. 3: Interface of Jumia (Source: Jumia.com)

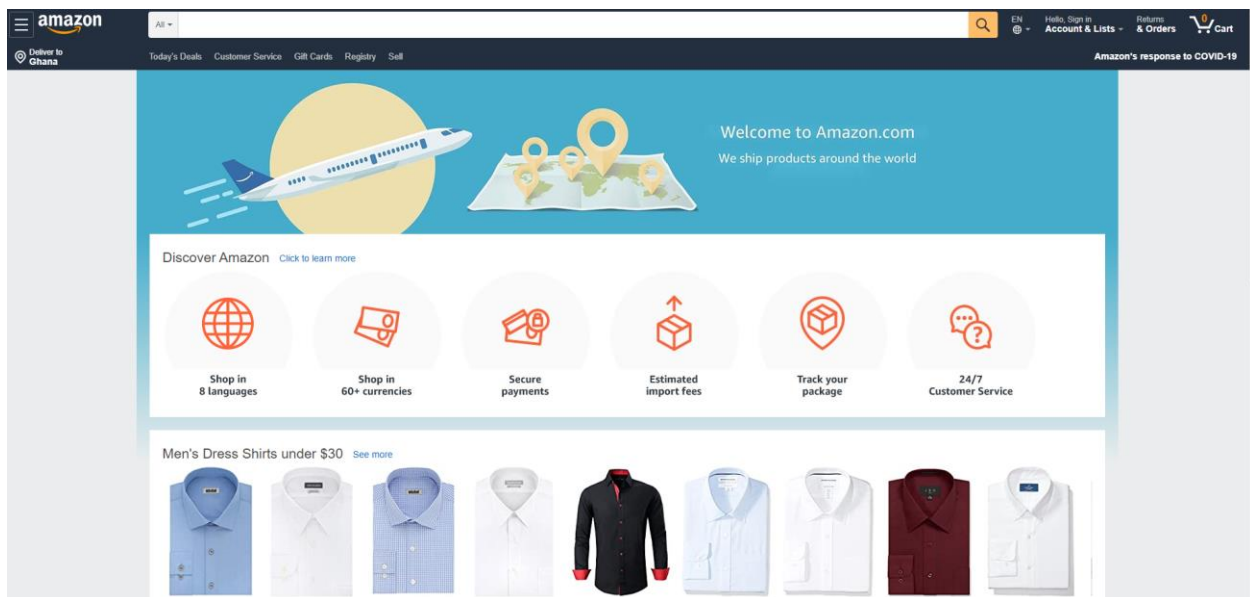


Figure 4. 4: Interface of Amazon (Source: Amazon.com)

This divergence in market performance was most notable when the public markets reacted very differently to e-commerce in markets in the global North as compared to

African markets in the wake of the COVID-19 pandemic. I compared the year-to-date performance of certain indices and stocks on April 22, 2020. On that date, the S&P 500 was down 14%, the Morgan Stanley MSCI Emerging Markets Index was down 20% and the VanEck Vectors Africa Index ETF was down 34%.<sup>48</sup> This reflected a broader pattern of global indices performing poorly, with emerging and developing markets taking a bigger hit. However, despite global indices being down significantly, e-commerce companies showed different results relative to the market downturn. Amazon, the largest e-commerce company in the world with a market capitalisation of about \$1.2 trillion, was up 25% (outperforming the S&P by almost 40%). Alibaba, the second largest e-commerce company in the world with a market cap of approximately \$540 billion, was down only 5% (outperforming the Chinese SSE Composite Index by 3%). Jumia's stock on the New York Stock Exchange, however, was down 43%. At a high level, it reflected a divergence in investor sentiment – whereas investors perceived outperformance from Amazon and Alibaba in a time of COVID-19, they did not have the same expectations for Jumia.

Why did investors perceive such divergent outcomes? It is largely related to the offline component of e-commerce and the differences in infrastructure. When I first started writing this chapter, I was focused more on the difference between e-commerce in Ghana

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<sup>48</sup> The S&P 500 is a stock market index that measures the stock performance of 500 large companies publicly listed on stock exchanges in the United States. It is one of the most cited equity indices and is widely considered to be a representation of the overall stock market performance. The Morgan Stanley MSCI Emerging Markets Index is an index used to measure equity market performance in emerging markets. It captures mid and large cap companies across 26 developing economies including Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Qatar, Russia, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey, and the United Arab Emirates (MSCI). The VanEck Vectors Africa Index ETF is an index that includes local listings of companies that are incorporated in Africa and listings of companies incorporated outside of Africa but that have at least 50% of their revenues or related assets in Africa. Thus, it offers broad exposure to a range of sectors (financials, materials, communication services, consumer, energy, healthcare, real estate, and industrials) and African countries (most notably South Africa, Morocco, Nigeria, Kenya, Egypt, Ghana, Zambia, and Zimbabwe). The SSE Composite Index is a stock market index comprising all the stocks that are publicly traded at the Shanghai Stock Exchange.

and in other markets such as the United States, the United Kingdom and China. As one of my interlocutors had described it “in Ghana, you can never have a fully digital business.” However, COVID-19 showed that e-commerce *universally* is never fully digital. There is a lot of offline involved in building an online business. I experienced this personally: when ordering gifts on Amazon.com and flowers on FTD.com in April 2020, I faced significant delays in deliveries (as long as several weeks as compared to the typical 48 hours).

Digital traders like Freda and Priscilla focus on locally created goods. Freda describes her product as “authentically African” and Priscilla proudly claims that “my style is Afropolitan.”<sup>49</sup> Their discourse is not simply to appeal to a customer base in the global diaspora. Only 35% of Freda’s sales are from exports, with 65% of her demand coming from local customers. Most of Priscilla’s customers are also local. Of course, while locally resident, these customers are plugged into various transnational networks and practices.

My research also showed that there are a lot of emerging local companies across the e-commerce value chain who are providing solutions to digital traders. Whereas Jumia has been tagged a foreign model imported into Africa, the digital traders in my study did not follow the Jumia example. My ethnography showed that they are not taking e-commerce models from the West and just copying and pasting in Ghana. Rather, they are reflecting the dynamism and opportunism that has long been a hallmark of Ghana’s women entrepreneurs, whether it is Clark’s (1994) market women or Bowles’ (2013)

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<sup>49</sup> “Afropolitanism” was coined by Taiye Selasie (2005) in her piece “Bye Bye Babar”. Minna Salami (2014) further notes in her article *Why Afropolitanism?* that “Afropolitanism, with its connections to technology, architecture, commerce, culture and art, provides a language for twenty-first century decolonisation and progress...Afropolitanism constitutes a significant attempt to rethink African knowledge outside of the trope of crisis...Indeed, by placing Africa at the centre of cosmopolitanism, Afropolitanism enables us to frame the critical discussions of our times (globalisation, modernity, development, culture, identity...) from a position of agency”

cosmopolitan traders; they are simply using digital tools, both local and global, and mostly mobile, in an increasingly digitised Ghana to interact with and serve their customers and to sell their goods.

This poses a larger question about whether any form of technology can be perceived as a neutral vehicle, amenable to human agency, and filled up with or used to promote local content. The same questions have been asked about newspapers and print technology in Africa – are the newspaper genre and the means of producing newspapers just ‘imports’ that Africans have filled up with local content to reflect their circumstances and concerns? Scholars writing on print cultures and print technologies have tended to argue against this, arguing that the genre itself was transformed in Africa (Wasserman, 2008; Gicheru, 2014; Onyenankeya, 2021).

The study of technology in Africa has largely been confined to anthropology and archaeology. Historians and archaeologists have shown the complexity of technologies deployed in precolonial Africa including metalworking and textiles (see e.g., Chirikure, 2007; Herbert, 1973; Kriger, 2005; Schmidt & Avery, 1978). Other scholars have focused on the ritual and symbolic function of technologies in Africa (Storey, 2008). Scholars like Stephan Miescher (2014) have explored the technopolitics of energy looking at the tensions between the social injustices created and the opportunities generated by Ghana’s Akosombo dam. Learning from the science and technology studies (STS) literature, my work pays attention to the micropolitics of material arrangements as I also contribute to STS by situating some of these technological projects in the larger political and economic contexts.

My research (and the literature review) showed that the selling of goods in Ghana – offline (and now online) – has and continues to be dominated by women. I next analyse the relationship between gender and (e)-commerce in Ghana.

#### 4.5 Gender and E-commerce

Trade has long been dominated by women in Ghana. In Ghana, women comprise 53% of the labour force, account for 44% of GDP, and are responsible for 70% of Ghana's SMEs which are crucial to the Ghanaian economy, accounting for 70% of the country's GDP and 92% of businesses in the country (Osabuohien & Karakara, 2018). In *Onions Are My Husband* – her seminal work on Ghanaian market women traders - Garcia Clark explained that she focused on West African markets because they were “reported to be among the most dynamic contemporary marketplace systems, expanding rather than withering away under long contact with capitalism” (Clark, 1994, xviii). Moreover, market traders exercised a considerable amount of economic independence and control, given the largely informal nature of the economy (Ibid). Market traders were predominantly women, and this raised interesting questions about gender and work (Ibid). The subjects of Clark's ethnography were market women traders based in the Kumasi Central Market, which in 1994 was the largest single market in Ghana and perhaps the largest in West Africa with a daily trading population estimated at 15 – 20,000 (Ibid, 1). Most of the traders (70%) were women.

Building on Clark's work, Laurien Bowles (2013) focused on an emergent category of Ghanaian women traders who are mostly educated abroad and engage in global commerce, where they acquire consumer goods such as art and cloth overseas and import them to Ghana to sell to local consumers. As Bowles describes them in the

following terms: “this new Ghanaian market woman earns a lucrative income using their cultural capital garnered through highly prized Western diplomas, the social history of women as formidable traders in Ghana, and the economic start-up funds garnered from transnational job opportunities and global family networks” (208). Bowles (2013) examines how these young Ghanaian businesswomen “successfully navigate international networks in ways that rely on hyper-mobilised movement garnered through dual citizenship, affluent economic status stabilised by educational experiences abroad, and social ties fostered within and across nation-states” which results in “economic successes that are often unparalleled among their peers in Ghana” (208). In my research, the tech chemaas I encountered in many ways resemble Bowles’s market queens and businesswomen who navigate similar challenges to those research subjects because of the offline nature of e-commerce.

The business literature heralds e-commerce as a great “equaliser” in terms of creating an even platform for women to compete in the marketplace, where their gender is supposedly unknown. For example, Turkey’s leading e-commerce platform, Hepsiburada, in offering free virtual stores to 1,000 women entrepreneurs highlighted the “transformation” that e-commerce could offer these women entrepreneurs and the “access to a market of over 18 million monthly online shoppers” (PR Newswire, 2017). In *Women, Work, and the Web: How the Web Creates Entrepreneurial Opportunities*, Carol Smallwood (2014) trumpets the possibilities of “this bold new world of the Internet [which] creates opportunities that we never had even five or ten years ago. Women with young children have the ability to create their own business online and run it from home.” (19). Smallwood sets up e-commerce as a liberation tool for women which allows them “to

follow their dreams of owning their own businesses, to spend more time with their families, to set their own schedules [and] to use their creativity and artistic talents.” She describes the simplicity of running an e-commerce business, claiming that “online shops can easily be created out of the home, started up without breaking the bank, and sellers can start earning profits right away...with the click of a mouse, a storefront can be set up in a few hours.”

As one of the interlocutors in Freedman (2016)’s study said:

Digitising the e-commerce structure has helped break down barriers confronting women entrepreneurs...We operate in a patriarchal society where men are dominant and there are still stereotypes that women don’t understand technology...Digitising means clients never have to know your gender. It’s levelled the playing field and reduced patriarchy in business. We’re now able to operate in areas where there is less discrimination towards women...As long as you have a skill set you just have to make yourself visible online, provide a proper platform to engage clients wherever they are and voila, you create a job for yourself (24).

E-commerce has been highlighted as a tool for gender empowerment in developing countries, though it requires training, gender analysis, planning and proper monitoring to ensure its effectiveness (Parnami & Bisawa, 2015). Many development agencies have championed the role of e-commerce in socio-economic development especially with respect to gender (Boateng et al., 2008, 566). Boateng et al. (2008) argue that the rise of innovative enterprises that are focused on exporting or selling “cultural capital” (craft products, arts, festivals, etc.) – are areas where women entrepreneurs typically dominate as entrepreneurs or knowledgeable resources in the decision-making process (582). Ndonga (2012) notes that e-commerce can promote socio-cultural development through the empowerment of women and the expansion of education opportunities. “E-commerce generally stimulates entrepreneurship which creates



avenues for women, especially in developing countries, to apply their skills and be able to contribute to household income.” (Ibid). This, of course, entails normative assumptions about the goals of women entrepreneurs and does not reflect the reality that not all market women have access to e-commerce infrastructure.

Many scholars have posited that digital entrepreneurship may act as a ‘great leveller’ due to low barriers to entry and the absence of any identifying markers online (no one knows your race or gender or other feature online) and thus the internet serves as a great enabler of entrepreneurial potential (LeBlanc, 2015; Schmidt, 2011). Dy et al. (2016) critically assess these postulations with analytical frameworks offered by intersectionality (Crenshaw, 1991) and positionality (Anthias, 2013). They argue that the digital world reproduces socially constructed inequalities. For example, most female respondents in one study created new ventures in sectors considered ‘feminine’ including health and beauty, apparel, and marketing services (Dy et al., 2016, 295). In Ghana, I observed a similar trend. Most of the women digital traders created their ventures in feminised sectors selling products such as clothing, jewellery, cosmetics, food, and accessories, reflecting and reproducing offline gendered labour divisions. Other scholars have noted that a significant number of founders create start-ups in sectors linked to their past employment, a phenomenon that reproduces gendered inequalities within the wider labour economy (Storey & Greene, 2010). However, none of the digital traders I met in Ghana started their ventures in sectors related to their past employment. Class also matters. All the digital traders I encountered possessed significant class privilege (see chapter 3).

Some scholars have concluded that there is no reasonable evidence to support the statement that gender plays a role in attitudes about e-commerce (Dehkordi et al., 2011; Harris & Davison, 2009). Participation in e-commerce requires access to a financial institution and access to the internet. Recent research in Ghana by Osabuohien and Karakara (2018) suggests that there is no gender disparity when it comes to ownership of a bank account, and more women are using mobile money as a savings tool than men (4). They also found a higher percentage of mobile phone ownership among women as compared to men. These are more encouraging statistics than the World Bank study that found that the financial inclusion gender gap in Sub-Saharan Africa is on average 11.3% and is 8% in Ghana (Chamboko et al., 2018, 3). The study also noted that even though women are more likely than men to use mobile money to receive money and to store value, men are more likely to use mobile money to transfer funds and to make purchases (Ibid, 13).

Yet, other scholars disagree and have expressed scepticism over the notion that e-commerce will lead to gender empowerment. Pahl (1999) finds that men make more use of new forms of money and dominate the use of new technologies, which is further excluding women. This matters because, as Singh (2000) notes, the exclusion of women and those of lower education levels from electronic money “gains greater social significance as electronic commerce becomes increasingly important and an idiom of the new economy” (paragraph 3.19). Financial exclusion often results in social exclusion (Kempson & Whyley, 1999). E-commerce has also brought on novel challenges for women entrepreneurs including “protecting goods, services and trademarks; sharing knowledge about how payments are made; reassuring clients about security; and proving

expertise to foreign markets... 'Competition is stiff - you always have to be on top of your game, make sure your systems are working flawlessly and that they're easy to use. A great deal of work goes into maintaining an e-commerce business.'" (Freedman, 2016, 24, quoting Sarah Murugi, chief executive officer of Nairobi-based SawaSawa which offers custom software development and infrastructure).

Some of the differences in the various studies can be attributed to class and education differences. All the digital traders I met in Accra had received elite education with at least a bachelor's degree, with some like Freda having a master's degree from elite universities like Sciences Po. Whereas "many uneducated traders...chose to trade because their lack of schooling disqualified them for other jobs" (Clark, 1994, 307) and Okoli and Mabarika (2003) suggest that many women venture into entrepreneurship because they are encouraged to do work that is more practical in a male-dominated society, the female digital traders I met elected to trade to pursue entrepreneurial opportunities on their own accord and not for lack of employment opportunities. Freda, for example, had several high paying jobs with the EU and USAID, and Priscilla had worked for many multinational firms including British American Tobacco and Nestle. Yet, when confronted with the offline challenges of e-commerce, these highly educated cosmopolitan digital traders resorted to practices that have been observed among the market traders in Ghana. As Ndongo (2012) highlights, "the success of m-commerce has set a trend for the adoption of simple e-commerce facilities in low-income countries and customised simple e-commerce facilities that fit into Africa's socio-economic conditions

and needs.”<sup>50</sup> The digital traders I met adapted their e-commerce strategies to fit Ghana’s socio-economic and infrastructural conditions, which I discuss next.

#### 4.6 Infrastructure and offline market networks in Ghana

To understand how e-commerce works in Ghana for digital traders, it is important to understand the infrastructural conditions for e-commerce in Ghana as well as the offline market networks that the digital traders rely on to sell their goods and services. As Anderson et al. (2003) note “for countries or regions hoping to experience economic growth through e-commerce, some combination of adequate bandwidth, human capital, innovative culture and supportive financial, logistical and government institutions is needed” (421). I assess the state of Ghana’s infrastructural conditions for e-commerce using Travica (2002)’s framework for infrastructure layers and diffusion conditions (summarised in Table 4.1 below).

Travica (2002) notes six infrastructure layers that are key for e-commerce: (1) customer e-commerce propensity; (2) e-payment infrastructure; (3) software industry to support applications; (4) telecommunications infrastructure; (5) delivery system infrastructure and (6) transportation. For customer e-commerce propensity, the necessary diffusion conditions are adoption of email, remote ordering, and quality assurance. In Ghana, while e-mail is widespread and there are capabilities for remote ordering, payment, and support over web, I find that customers more commonly use WhatsApp. They may even use a website to select products but would transact over WhatsApp, as Priscilla described in the chapter’s opening.

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<sup>50</sup> Mobile commerce, also known as m-commerce, is a sub-set of e-commerce which involves using wireless handheld devices like cellphones and tablets to conduct commercial transactions online

The e-payment infrastructure requires capabilities and adoption of non-cash payment and support for electronic payments both in terms of software, security, and consumer trust in the institutions. In Ghana, credit cards are not widespread, but mobile money is more widely available and used. The most recent report from the Bank of Ghana showed that for the first quarter of 2019, interbank settlements were 536 billion cedis, direct debit was 30 million cedis and E-zwich transactions (biometric card payments) amounted to 1.2 billion cedis. Mobile money accounts which reached 29.6 million cumulative registered accounts as of the end of March 2019 and 12.7 million active accounts (defined as accounts with at least 1 transaction in the period 90 days prior to March ending) contributed a total of 66 billion cedis in transaction value (Bank of Ghana, 2019). According to Banahene (2018), the bank failures in Ghana in 2018, caused by many factors including regulatory lapses and ineffective corporate governance, has resulted in an erosion of public trust and confidence in the financial system.

There are several emerging local tech companies that provide payment solutions for merchants. These include companies like Flutterwave, Paystack, Hubtel and expressPay. Founded in 2012, expressPay is an official Visa Payment Technology Provider (PTP) and supports mobile money payments and all major international card networks including Visa, MasterCard, American Express and Discover. expressPay has all the relevant international security standards and is Payment Card Industry Data Security Standard (PCI DSS) certified. Founded in 2016, Flutterwave's mission is to simplify payments by making it possible for African merchants to make and accept payments anywhere, across Africa and around the world. Flutterwave has developed one single application programming interface (API) for payments across Africa. Non-cash

payments made in Africa are estimated at \$380 billion every year with only 1% of that made by credit or debit cards. Payments in Africa are highly fragmented with over 500 banks, over 276 mobile wallets, 12 card networks and more than 20 payment providers (Flutterwave, 2017). Flutterwave replaces all these multiple payment integrations with one API that allows for processing of any kind of payment – mobile money, credit/debit card, Unstructured Supplementary Service Data (USSD), bank account or cash tokens – anywhere across Africa. Founded in 2015, Paystack is like Flutterwave in offering APIs for payment solutions for businesses that operate across Africa. Hubtel, based in Ghana, also provides payment solutions, however, it currently only accepts payments via mobile money or credit/debit cards that are locally issued (they are still working on adding international cards and other payment methods). expressPay allows for payment solutions via mobile money, credit/debit cards (both local and international) and bank accounts.

Many scholars have documented the impact of these financial technology solutions on African societies and economies. Breckenridge (2010) did a case study of Ghana's attempt to create the world's first biometric money. Ozili (2021) has observed how FinTech has helped increase the level of financial inclusion in several African countries, albeit from a very low base. Cornelli Giulio et al. (2021) have shown how FinTech is contributing to strong growth in credit in Africa from 2014 – 2019, with Kenya for example growing from \$100 million to over \$1 billion over that period. Yermack (2018) found greater adoption of FinTech applications in countries like Ghana with a common law legal heritage (as compared to civil law). VanZyl (2020)'s research in South Africa underscores the importance of regulation and financial literacy in the adoption rates of FinTech

platforms by consumers. Tut (2020) found that in Kenya the Covid-19 pandemic has accelerated the adoption of FinTech platforms in payments, with an increase of 54% in mobile banking transactions. I found a similar trajectory in Ghana, with the pandemic forcing most people to adopt electronic payments.

For Freda and Priscilla (and many of the digital traders I interviewed), electronic payments have been a significant pain point for them. Freda notes that “in Ghana, I use mobile money and it works really well. I also use local banks and accept cash.” For her international customers, however, who now comprise 35% of her business, she faces challenges. “The ones that have PayPal, I use PayPal to accept payment with no problem. However, the ones without PayPal are the problem. I have used Flutterwave and now I am using Paystack, and they both have challenges with different international markets.” Freda has considered global solutions such as Square in the United States “but it requires setting up a U.S. corporate entity in order to get a U.S. bank account to even qualify.” For Priscilla, payments are one of her greatest challenges. “It’s a nightmare. I can’t use PayPal because I do not have a U.S. bank account. I am forced to use Western Union, which is very strange to many of my customers.” Priscilla serves her customers in Ghana using mobile money, cash on delivery and expressPay.

The software layer requires a software industry that develops and supports applications for e-commerce. Several local software solutions have emerged. For example, StoreFoundry is a Ghana-based online platform that allows sellers or merchants to establish an online store. It is free to set up the store and StoreFoundry takes care of payment processing, order fulfilment, products promotion, customer service management and delivery handling. All these services are provided at no cost to the merchant.

StoreFoundry takes a 6% commission fee on each order placed. International shipping is outsourced using DHL and payments are processed through expressPay. Flutterwave has also created Flutterwave Store, a free e-commerce application for merchants. Flutterwave handles everything from the setup to payments to delivery (which is outsourced). All a merchant needs to do is to create a Flutterwave account online and create a store, add products and specifications, including images and take the store online and it is done.

I tried it out myself. It took about 5 minutes to set up a Flutterwave account and go through all the compliance checks which involved putting your bank account details and uploading proof of identification (either a driver's license or a national passport or ID). It took me another 6 minutes to set up a store online and upload products and I was ready to sell online and receive payments. Like Flutterwave, Hubtel also offers a free webstore to its customers to sell their product or service online. Another option for merchants is Tonaton.com which is a classifieds online marketplace that sells everything from used cars to mobile phones to properties for sale in Ghana. However, Tonaton only connects you to communicate directly with the seller and does not provide fulfilment services, payment services or delivery services.

The telecommunication infrastructure is another key factor with diffusion conditions including availability and cost of internet access and deregulation of the market (see Chapter 2). As discussed in chapter 2, Ghana does not have affordable internet with 1GB of data costing 3% of GNI per capita (The World Bank, 2019).

The delivery system infrastructure includes having dependable post services and alternative delivery services. It also requires an addressing system to allow for deliveries.



Ghana Post Company is a state-owned enterprise with legal monopoly over the provision of universal postal services. They provide postal and courier services. However, many of the entrepreneurs I met preferred to use private courier services for deliveries within Accra and inter-regional bus services for pan-Ghana deliveries. Ghana has many private courier services including DHL, United Parcel Service (UPS), Eagle Express, Swift Courier, and National Express Ghana. In the last several years, some start-ups have emerged focused on deliveries using motorbikes such as Okada Ghana which has an app on Apple and Android that can be used to order deliveries. The government launched its digital addressing system in 2018 to help improve on deliveries. However, delivery can be expensive for some of the digital traders. For example, for Priscilla, exports pose a problem because of the high costs of transportation. “DHL costs \$25 and my product costs \$12, unless you are buying in bulk, it doesn’t make economic sense.” Many entrepreneurs (and consumers) also encounter the challenge of drivers not knowing how to use the GPS or not having mobile data to power it; so, the drivers end up calling the consumer for directions.

Finally, the transportation infrastructure is also critical to enable e-commerce. The transport sector in Ghana is made up of road transport, maritime transport, civil aviation, and rail. However, road transport is the most dominant medium and is responsible for 96% of freight and passenger traffic (GIPC). The road transport infrastructure comprises 68,067 km of road network linking the entire country (Ibid). Buses are the main mode of road transport and account for 60% of passenger movement. There are 23 public transport operators which belong to one union, the Ghana Road Transport Coordinating Council (GRTCC). They provide intercity, intra-city and long-distance services with 30 to

70-seater buses (Ibid). While the Ghanaian government touts the country’s road network as an attractive feature to promote foreign direct investment, its citizens disagree. An Afrobarometer survey from 2019 indicated that Ghanaians were most concerned about the deficit of infrastructure and roads, with 59% of Ghanaian surveyed citing infrastructure and roads as the first problem they want the government to tackle in 2020 (Afrobarometer, 2019). This is the first time since 2002 that infrastructure and roads has topped the list of citizens’ priorities, over unemployment, education, and health (Ibid).

*Table 4. 1: Framework for infrastructure layers and diffusion conditions in e-commerce*

<i>Infrastructure layer (Travica, 2002)</i>	<i>Diffusion condition (Travica, 2002)</i>	<i>Ghana’s condition</i>
Customer e-commerce propensity (cultural layer)	<ul style="list-style-type: none"> <li>• Remote ordering, payment, and customer support</li> <li>• Standard quality assurance</li> <li>• Adoption of email</li> </ul>	<ul style="list-style-type: none"> <li>• Still early stages: customers use online platform to select products, but transact over WhatsApp or phone</li> <li>• Email is widespread; WhatsApp is more commonly used</li> </ul>
E-payment infrastructure	<ul style="list-style-type: none"> <li>• Capabilities for and adoption of non-cash payment</li> <li>• Credit card culture</li> <li>• Secure telecommunications</li> <li>• Software industry support</li> <li>• Customer trust in financial institutions</li> </ul>	<ul style="list-style-type: none"> <li>• Credit cards not widespread</li> <li>• Mobile money widely available and used</li> <li>• Emerging tech companies e.g., Flutterwave, Paystack, Hubtel, ExpressPay which provide payment solutions for merchants</li> <li>• Trust eroding in financial institutions following collapse of several banks and financial institutions in 2018 and 2019</li> </ul>
Software industry to develop and support the necessary internet applications	<ul style="list-style-type: none"> <li>• Support to diverse foreign and own software products for e-commerce</li> </ul>	<ul style="list-style-type: none"> <li>• Majority of e-commerce sites hosted locally</li> <li>• Growing local software products for e-commerce including Flutterwave</li> </ul>

		Store, Hubtel Mall, StoreFoundry,
Telecommunications infrastructure	<ul style="list-style-type: none"> <li>• Broad availability of telephone and Internet access</li> <li>• Faster and secure internet lines</li> <li>• Deregulation and privatisation</li> <li>• Affordable internet access</li> </ul>	<ul style="list-style-type: none"> <li>• Broad availability of mobile/ cellular access</li> <li>• Mobile subscription rate is greater than 100%</li> <li>• Internet access/data very expensive for population</li> <li>• Sector is largely deregulated and privatised</li> </ul>
Delivery system infrastructure	<ul style="list-style-type: none"> <li>• Dependable post service</li> <li>• Alternative delivery services</li> <li>• Addressing system</li> </ul>	<ul style="list-style-type: none"> <li>• Postal services are unreliable</li> <li>• Courier services are widely available but expensive</li> <li>• Ghana Post/Digital addressing system was launched in 2018</li> </ul>
Transportation	<ul style="list-style-type: none"> <li>• Diverse safe means</li> <li>• Functionality catering to delivery needs (reach, volume, patterns)</li> </ul>	<ul style="list-style-type: none"> <li>• Dominated by road transport (96% of passenger traffic)</li> <li>• National road network</li> <li>• Poor road infrastructure</li> </ul>

Ghana’s infrastructure layers for e-commerce are uneven and, in some cases, limited, which makes it important to draw on the insights from offline market trade and the norms and social arrangements through which trade is conducted, which I discuss next.

4.7 Navigating (e)Commerce Infrastructure Challenges

In both market trading and e-commerce, geography matters. As Clark (1994) explains, “geography emerges prominently in everyday commercial identity and practice...traders’ identification with named locations corresponds directly to the commercial roles they practice and perceive as options” (35). While digital trading occurs

online and geography may not seem to matter, the offline nature of e-commerce makes it just as important. As Anderson et al. (2003) note so long as goods must be physically delivered to customers, “e-commerce...will not make geography irrelevant” (415). For example, Freda sources her shea butter from Northern Ghana, which is approximately 600 km from Accra. Park & Taylor (2004) further add that “e-commerce activity needs to be seen as being situated within a particular social and geographic context, enabling services that complement a firm’s physical location, work in concert with other modes of interaction and exchange, and emphasise pre-existing exchange partners” (287). Thus, infrastructure is critical for any e-commerce operation. E-commerce requires the development of several infrastructure layers to enable businesses to flourish in a virtual environment. Hence Freda’s argument that no business in Ghana can be fully digital, though as previously discussed, this applies to all e-commerce businesses globally.

For market traders, geography mattered mostly to highlight and influence the value of goods (Clark, 1994, 36). Market traders would highlight the origins of certain goods e.g., cassava from Axim to attract a premium in value and as a customer acquisition tool (Ibid). The digital traders I met employed the same strategy. For example, Freda marketed the fact that her shea butter came from Northern Ghana, which is known for having some of the highest quality shea butter in the world. Other digital traders went as far as even filming their procurement from these sources to prove authenticity. As one of my interlocutors put it, “for my goods, the origin stories sell...they tell a story of authenticity, and my consumers love it.”

Clark (1994) noted the impact of infrastructure on market trading techniques: “Limits set by crop seasonality and perishability are not linked directly to biological givens

but operate through the infrastructure of transport and storage facilities.” (127). For market traders, transportation was so important that often they would escort their goods themselves or arrange for others to transport their goods to ensure that they receive their consignment on time (Ibid, 149). With these infrastructural and transportation challenges, “one obvious evidence of power in a marketplace system is large stocks of accumulated goods. Storage is the most straightforward way in which traders or others can control the overall level of supplies in a commodity, an essential factor in manipulating prices” (Ibid). For traders who could not afford to store commodities in large quantities, they resorted to smaller quantities to help mitigate against disruptions in supply and price. Thus, storage capability became an important and critical source of power within the marketplace system that impacts the economic situation of the market women.

Some of the digital traders faced the same challenges and employed similar strategies with transportation and storage. Freda produces her Kaeme products in a makeshift manufacturing facility in her house at Labone, a wealthy residential area in Accra. Unlike the market traders, she outsources the delivery of goods to customers through a third-party courier company. However, just like the market traders, she is dependent on the transportation of her raw material, such as shea butter, to her facility. She sources the shea butter from cooperatives in Tamale (618km from Accra) and Wa (685km from Accra) in the northern regions of Ghana. “I order my shea butter from the coop on WhatsApp, and it arrives by bus in 3 days, and I pick it up at the bus station...the fulfilment rate is usually 90% in 3 days...it’s very effective...I inspect the goods to meet my quality standards before I pay usually via bank transfer.”

Like Clark's market traders, Freda constantly worries about running out of stock so she too orders in bulk and stores them, even though it ties up her working capital and requires significant investment in both money and storage space. She also imports packaging from the USA and stores enough inventory to last her operations for several months to prevent any situation where she runs out of stock and cannot fulfil demand. Like the market traders who noticed "limits set by crop seasonality and perishability" (Clark, 1994, 127), Freda also observed a seasonality in shea butter pricing. "Shea takes twenty years to mature and when it matures, it yields fruits for only half the year, so half the year prices are normal and the other half is peak season, when prices are very high, so we buy in bulk when the prices are cheaper and store it." For Freda, the existential threat to shea butter supply comes from foreign competitors. "The biggest problem is coming from foreigners like Body Shop and other global players who have a lot of money. They are buying out the coops and investing heavily to secure supply. I used to have five suppliers, but now I have just two. The other three had to commit 100% of their produce to these foreign buyers. It makes it tough for local people like me to compete and I fear we may lose access to shea butter supply in the future."

Like Freda, Priscilla also works at home and produces her beads in the house. Her raw materials are mostly glass. "I get the glass waste for free and turn them into beads. I have a guy in Koforidua who makes the beads from glass for me." Koforidua is a town in the Eastern region of Ghana that is an 83km drive from Accra. She also uses her house to store her raw materials. "I send the glass to him in Koforidua every six months using a pick-up owned by my business partner, and he makes the beads and sends them to me by *tro-tro* (local buses) and I get them same-day."

Storage mattered not just for seasonality and perishability reasons, but also to manage currency devaluation. Clark's market traders had to navigate "foreign exchange shortage [and] devaluation" (Clark, 1994, 127). Over thirty years later, digital traders are still forced to also navigate currency devaluation. For Freda "Foreign exchange (FX) has been a catastrophe...I lose so much money in FX because we only raise prices once a year, so we are not able to pass on the prices to the consumer as easily." Priscilla also imports some of her raw materials. "Some of the metal parts and the finishing, even though we are made in Ghana, to keep the quality global, we have to import some of these things because they are not available locally." She shared that 70% of her costs are in cedis and 30% are in dollars to pay for the imports. "I have factored in and anticipated movements in currency, so when the cedi moves, I eat the cost. I have never had to raise pricing. I already price above market to factor in those shocks." In both cases, storage enables the market traders and the digital traders to stock up on goods.

In the wake of the COVID-19 global pandemic, the government of Ghana instituted a lockdown in the Greater Accra and Greater Kumasi Metropolitan areas for three weeks on March 28<sup>t</sup>, 2020. As part of the lockdown measures, inter-city travel for private and commercial purposes was suspended except for essential goods and services. Markets were closed. The only workers exempted from the lockdown restrictions and allowed to move around the city were employees in the following industries: food, pharmaceuticals, packaging, sanitation, road and railway construction, security agencies, fuel stations, utility, telecommunications and e-commerce and digital service providers. E-commerce businesses were exempt. During the period of the lockdown, many businesses that were not exempt saw their sales plummet to \$0.

The government's exemption of e-commerce betrayed a complete misunderstanding of the offline nature of e-commerce. There was a sense in which they assumed that these digital businesses could continue to deliver and flourish in a virtual environment, unperturbed by the lockdown restrictions. Yet the ban on inter-city travels also meant that the typical means through which Freda was able to obtain supply of her shea butter, using the passenger buses from the Northern regions to Accra, were no longer available. Unsurprisingly, Kaeme witnessed a drop in 95% of its sales during the lockdown period and was forced to suspend its operations. So even though market traders were prevented from working due to the lockdown restrictions, and digital traders were permitted to operate, the restrictions on transportation and the offline infrastructure that powers both business models effectively achieved the same outcome: neither the market traders nor the digital traders could generate any sales during the lockdown.

#### 4.8 Navigating Offline Relationships

Both the market traders and the digital traders have also benefited from membership in various groups that protect their interests. Market traders formed formal or informal groups with colleagues to “help members manage information and credit requirements and allow risk reduction and sharing on a group basis” (Clark, 1994, 219). This came with benefits because “being known as a group member carries significant commercial advantages. Colleagues can trust each other to conform to bargaining etiquette, thus streamlining transactions. They know the others will reciprocate favours and pass on helpful information, thus reducing risk” (Ibid, 220).

John Kuada (2009) in his exploratory study on gender-based differences in the motives underlying entrepreneurial activities in Ghana observed that women tend to rely



more on their social network for moral and emotional support during the early stages of their business. For the male respondents in his study, they highlighted the pressure they receive from close ties to provide employment and/or financial support, so they respond by “de-linking” themselves during the early stages of their businesses and only re-link when the business has grown significantly and can sustain the financial demands (Ibid, 95).

Freda shared that she is a part of an informal group of digital traders who provide support to one another, both emotional, moral, and otherwise. Unlike the groups in Clark’s ethnography which operated in physical spaces at the Kumasi Central Market, Freda and her colleagues operate virtually in a WhatsApp group called *Ghana to the World*. “We are a support group, and we share things like international trade fairs, how to get Food and Drugs Authority (FDA) approval, how to share contacts, for example, I helped someone with establishing trade partners in China.” She is also a member of another group that is mostly comprised of artisans (who are non-digital). “That group is more organised and political. It used to be headed by the wife of the current Minister of Trade, Alan Kyeremanten. There are membership fees, meetings and a lot of lobbying with the government to get certain policies passed.” Through a connection in that group, Freda was invited to give a speech at the United Nations about SMEs. “After my UN speech, someone in the government saw it and I was invited for a meeting and told I would be supported with a loan which I have applied for, but I am yet to receive it. Hopefully, it materialises.” Most of the digital traders I interviewed were part of various networks that provided different types of business and personal support; they mostly knew one another.

Another important role of these groups for market traders is in governing social conventions, especially with respect to customer acquisition and competition. When it comes to social conventions around relations with customers, unlike the Kumasi Central Market with its social mores which traders adhere to, the digital marketplace has no such rules. As Freda explained it, “online and social media is survival of the fittest. People will steal your customers with sponsored ads, they will steal your influencers and poach your customers.” However, Freda does not find this behaviour to be problematic. “Sometimes they even send ‘ghost’ customers to check on your prices and your customer service, but I’m not bothered because the market is big enough for all of us and it helps keep me on my toes and forces me to always improve my product and my service.”

Priscilla similarly shared that “you can’t control people’s preference in products, and you can’t really ‘steal’ someone’s customer. You need to focus on what you produce and your customer service interactions and what story you are telling, what makes you unique and make you stand out. I don’t see it as competition, there is enough business for all of us.” Of course, because these are higher end products where they are selling different things, and different brands, even where it's the same item, it creates a different competitive landscape as compared to the physical market where some traders are selling similar goods next to each other and are sometimes competing for the same customer.

#### 4.9 To So in a Digital Age

Yet despite the different social conventions around customer acquisition in the marketplace versus the virtual marketplace, both market traders and digital traders employed similar socio-cultural practices in engaging with customers. Bargaining with

customers is central to the lives of market traders (Clark, 1994, 128). Ndonga (2012) argues that socio-cultural influences limit the adoption of e-commerce in Africa, noting the propensity to transact over handshakes versus over digital platforms. Okoli and Mbarika (2003) note that the purchasing culture in many African societies involves going to a marketplace with dynamic pricing, where the consumer physically experiences the product and negotiates with the seller on pricing. They posit that the e-commerce model developed in the West does not consider variable pricing and therefore has limitations in its implementation in the African context (62). In Ghana, I found that socio-cultural practices, for example, those around bargaining, did not limit e-commerce adoption; on the contrary, the digital traders I met incorporated those socio-cultural practices into their digital businesses. For some of the digital traders, they employ sophisticated micro-targeting e-commerce tools which price-discriminate depending on the geography of a customer's internet protocol address. This means that for the same product, a consumer in New York may see a price of \$20 whereas a consumer in Ghana may see a price of \$12. This has been made possible by the advancements in autonomous intelligent agents discussed in the introductory paragraphs (Gopal et al., 2003).

Bargaining takes on different forms in the marketplace. There is bargaining on price where the quantity is fixed and the trader and the customer haggle over the price of the good. There is also the "to so" or add-on system which is a popular quantity bargaining style in Ghana. Here the buyer will purchase the product and would ask the seller to so *kakra* [add me small] (Clark, 1994, 131). For the digital traders who operate in a virtual market, bargaining is complex. Freda observes that "it is cultural, so much so that even the *obroni* (foreign) customers in Ghana have started to bargain." For Freda, however,

“we do not allow bargaining. We set our price at 45 cedis (\$9) and we won’t budge an inch. We market ourselves as Ghana-made but of the highest global standards and so our price is our price.” There is a sense in which Freda believes that bargaining on price will suggest an inferiority of her products. However, understanding the role that bargaining plays in the psyche of the Ghanaian consumer, Freda has had to incorporate it in her sales strategy for the Ghanaian market. She recognises that Ghanaian consumers like bargains and good deals and so “we send a discount code every Friday but only for our online customers and it has resulted in a significant increase in sales volumes every time we do it.” Outside the online discounts, “if you buy over 500 cedis (\$100) worth of products, I will take an executive decision and give you a discount of 5-10%.” While Freda attributes this to Ghanaian culture, the consumer behaviour and preference for bargains is very much a universal phenomenon and has been observed in several global markets, both offline and online (Jia et al., 2018; Campbell & Schau, 2019; Chong et al., 2017).

For Priscilla, she practices the *to so* system explaining that “if you buy more than five products, you get a free earring or a bracelet.” Sometimes she gives discounts, but only to select repeat customers. She also does not raise prices because she knows shoppers will react negatively to that. “I price at the beginning of the year with an added ‘premium’ [to account for any future fluctuations in input prices] and then I keep my prices constant.” This also raises interesting questions about scale. Unlike Amazon or Jumia, Priscilla and Freda operate more niche markets and are more like artisanal/boutique shops.

## 4.10 Conclusion

In this chapter, we have studied digital traders and their e-commerce businesses. We have seen how the e-commerce literature is mostly focused on the West, with comparatively little attention paid to Africa, and even less to the gendered nature of e-commerce in Africa. The literature that does focus on Africa tends to oversimplify and flatten the continent and treat it as a monolith. The infrastructure and offline networks required to power e-commerce businesses blur the lines between the digital traders and market traders. By bringing the literature on market traders into conversation with the literature on e-commerce, this chapter highlights novel insights into the offline experiences of digital traders. As discussed, e-commerce is not entirely anonymous or impervious to cultural phenomena and it cannot offer a “leapfrog” route because it is still closely connected with offline activity and with physical infrastructure. This is often missed in the rhetoric around digital inclusion yet is important to understand these experiences to design appropriate policies. In the absence of this, we risk failed policies such as the government of Ghana’s COVID-19 exemption that was purported to support e-commerce businesses but failed to address their reliance on offline infrastructure.

## Chapter 5: Digital Spaces - The Gendering of Tech Spaces in Ghana

### 5.1 Introduction

As referenced in the introduction of this thesis, entrepreneurship in Ghana dates to the pre-colonial era. Over the last decade, Ghana has emerged as one of the key sites of technology entrepreneurship hubs in Africa and this is reflected in the growth of incubators, accelerators, and tech hubs in the country. Yet, their success in stimulating viable businesses is limited, and this is even more so when the aspiring entrepreneurs are women. This chapter will first review the business literature on incubators and accelerators (majority of which is focused on the United States). Next, I will analyse the technology incubation scene in Ghana, mapping out the tech entrepreneurial ecosystem with respect to tech hubs, accelerators, and incubators – which I will group together and call growth enabling systems (GES) since in practice there are no firm boundaries between these hubs, accelerators, and incubators in Ghana. I will then focus on a case study of MEST, the flagship tech incubator in Ghana, as well as a case study of Ivy Barley, a tech entrepreneur who experienced five different incubators before finally launching her own, focused on women, called Developers in Vogue (DIV).

This chapter draws on my ethnographic research as well as results from an online survey I conducted among incubatees in Accra. This chapter ties together and contributes to the business literature on entrepreneurship, entrepreneurial ecosystems, and business incubators while addressing a substantial gendered research gap by highlighting female entrepreneurs. It also bridges the gaps and limitations of the business literature by engaging with feminist literature on technology and capitalism and incorporating insights

from my ethnographic field research in Ghana. It explores ways we can better understand capitalism and the making of the digital economy in Ghana through a feminist examination of these growth enabling systems. I suggest that adopting a gender-conscious approach to these growth enabling systems could improve the outcomes for women. Even though there is still a long way to go to reach gender parity in outcomes, Ghana's gendered outcomes are significantly better than the global average, and thus Ghana has a lot to teach Silicon Valley and the other global centres of technology entrepreneurship.

The entrepreneurial ecosystem literature highlights some specific ways in which incubators and accelerators contribute to entrepreneurship. Entrepreneurship ecosystems include various elements that contribute to the success and growth of entrepreneurship (Brush et al., 2018). These include, inter alia, a conducive culture, financial capital, human capital, education/training, new markets for products and services, regulatory framework, and relevant institutional and infrastructural support (Brush et al., 2018; Isenberg, 2011; World Economic Forum (WEF), 2013; Spigel, 2017). Entrepreneurship is fundamentally mediated within a local context (Brown & Mason, 2017). Autio et al. (2018, 73) argue that "the rapid global diffusion of the new venture accelerator concept even in sub-Saharan Africa is consistent with our argument that the adoption is driven by a globally operating mechanism – i.e., rapidly evolving digital infrastructures." They argue that to understand modern entrepreneurial ecosystems, it is critical to first understand the role of digitalisation in shaping the creation, distribution, and capture of value in the economy and society. The entrepreneurial ecosystem literature recognises the importance of spatial mechanisms on economic growth, productivity, and innovation (Ibid).

Accelerators also known as 'start-up factories' are designed to support growth-oriented ventures with coaching, funding, and peer mentoring (Brown & Mason, 2017). Famous examples include Y-Combinator in Silicon Valley, TechStars in London, and Rocket Internet in Berlin. Business incubators help start-ups with infrastructure, business support and mediation (Robinson & Stubberud, 2009). Infrastructure includes physical facilities, office equipment, etc. Business support refers to training, advice, and education. Mediation relates to assistance with networking and connections to external resources.

In a slight contrast to accelerators, incubators are an economic development tool that can accelerate the growth and success of start-ups, with many services including reduced rental rates, business support services, mentoring and access to networks (Treanor & Henry, 2010). Marlow and McAdam (2015) define the incubator as a site where entrepreneurs and external actors embedded within the entrepreneurial ecosystem (e.g., investors, mentors, etc.) interact. Hackett and Dilts (2004) describe business incubators as "a shared space facility that seeks to provide incubatees with a strategic, value-added intervention system of monitoring and business assistance. This system controls and links resources and employees, local universities and university community members, industry contacts and professional service providers such as lawyers, accountants, consultants, market specialists, venture capitalists, angel investors, and volunteers" (cited in Smilor & Gill, 1986, 1). Thus, the business incubator serves as a vehicle to "effectively link talent, technology, capital and know-how in order to leverage entrepreneurial talent and to accelerate the development of new companies" (Ibid).

Technology business incubation is widely emerging as a tool to promote economic growth, competitiveness, and innovation (Lamine et al., 2016). Incubators are sites where



science, technology, education, knowledge, human capital, and financial capital converge, with the incubator providing the critical links in the entrepreneurial value chain (Mian et al., 2016; Phan et al., 2005; Link & Siegel, 2007). Technology-focused business incubators and accelerators are sites which provide important financial, social, and intellectual provisions and services to their occupants and provide the resource-munificent context that improves the likelihood of business survival (Muntean & Ozkazanc-Pan, 2014; Hansen et al., 2000; Amezcua et al., 2013). Research from the National Business Incubation Association (NBIA) in the United States showed a significantly higher survival rate for incubated businesses as compared to the national average. Incubators also confer additional benefits on new firms, such as a stamp of credibility with stakeholders (including suppliers or new employees). Incubator firms also benefit from sharing resources within the ecosystem, building networks both within and with external stakeholders (McAdam & Marlow, 2009).

There is no consistent definition of incubators as an organisational form (Friederici, 2016, 62). The metrics of success of an incubator is also highly dependent on the agenda of its funders with a variety of different goals such as economic development, employment, technology commercialisation, product development or social impact (Ibid). In addition, incubation as a process has been proposed as distinctly different from incubators as an organisation (Ibid, 63). Universal features in the literature include firms as clients (vs. individuals), focus on venture creation, the existence of a selection process, the provision of support services, and the facilitation of networks with external partners (Ibid, 75). There is also a growing narrative around technology hubs which are “imagined to effectively and cogently create the kinds of support structures for technology

entrepreneurs that are missing in African contexts” and in the process, create the foundation of digital economies (Ibid, 20).

For this chapter, I adopt a critical feminist perspective and both qualitative and quantitative methods to understand how gender and gender relations impact tech GES in Ghana. I also recognise that Ghana is a country that has a different context from the global northern context that is dominant in the business literature. Within the northern context, entrepreneurship is dominated by men, unlike in Ghana where female entrepreneurs outnumber their male counterparts (Global Entrepreneurship Monitor, 2012). Moreover, the significance of female entrepreneurship is underreported, partly because the literature on Africa tends to be broad and oversimplified, treating the continent as a monolith. For example, Taura et al. (2019) in their book *Digital Entrepreneurship in Sub-Saharan Africa*, make the case that socio-cultural perceptions and stereotypes play a role in the under-representation of women in senior roles citing a study from the Global System for Mobile Communications Association (GSMA) that showed that women worldwide are 20% less likely to hold a senior leadership position in the mobile communications industry.

Ghana has had greater progress (compared to global average) of women in senior leadership positions in the last decade. In 2014, for example, two out of the four telecommunication companies were led by female chief executive officers - Lucy Quist, CEO of Airtel; and Roshi Motma, CEO of Tigo. Currently, there is one woman CEO out of the three main telcos, Patricia Obo-Nai, the current CEO of Vodafone. In addition to the telecommunication industry, women are also highly represented in leadership positions within the broader technology industry including inter alia, Angela Kyerematen-

Jimoh, the Managing Director of IBM Ghana; Estelle Akofio-Sowah, the Country Head of Google Ghana; Funlola Abe, the Country Head of Jumia Ghana; and Yvette Adonuvo Atekpe, the Managing Director of IS Internet Solutions.

With the aim of addressing the dearth of research on female leadership and entrepreneurship in Ghana, I highlight the trajectories of female entrepreneurs. In addition to life history interviews and participant observation with female tech entrepreneurs in Ghana from 2016 to 2020, I also immersed myself in Ghana's tech ecosystem to better understand how it works and how it impacts and is in turn impacted by gender and gender relations.

In Ghana, I observed that there is a lot of fluidity between incubators, accelerators, and hubs; their definitional borders are porous and overlapping. The ecosystem is relatively virgin, ad-hoc, and early in its development. For my research, I grouped all the organisations focused on supporting tech start-ups under the umbrella of *growth enabling systems*. Given that a lot of these growth enabling systems and their models were imported from overseas, it raises the question of whether the different context of Ghana matters for the applicability and usefulness of these systems in supporting start-ups.

## 5.2 Is the Africa context different?

My research suggests that these growth enabling systems, which are largely products of Silicon Valley, in their current configuration, may not be best suited for the African entrepreneurial context. Most of the business literature is focused on large European and North American cities, where technology entrepreneurs have abundant access to growth enabling systems; universities provide technology transfer services and have valuable alumni networks in the technology industry; and early-stage investors

organise several opportunities for start-ups to pitch their ideas in the form of demo days (Friederici, 2016, 15). These support structures have a significant impact on entrepreneurial opportunities. Scholars of economic geography, innovation, and entrepreneurship (e.g., Saxenian, 2006; Benner, 2008; Feldman et al., 2005; Storper et al., 2015; Thornton & Flynn, 2003) have demonstrated the role of favourable informal and formal social structures in enhancing opportunities for technology entrepreneurs in a given geographical context (Friederici, 2016, 16).

Friederici (2016) argues that for technology entrepreneurs in Africa, such favourable informal and formal social structures that enhance entrepreneurial opportunity are limited. He notes that “multinationals in the digital economy mostly locate creativity-based and knowledge-intensive value creation in economic centres of the Global North (Malecki & Moriset, 2007), while technology industries in African countries rarely consist of more than a handful of Internet service providers, two or three national mobile operators and a dozen software and application development companies” (16). In Ghana, the formal and informal entrepreneurship landscape is burgeoning, as multi-national companies such as Google and Twitter have begun locating knowledge-intensive value creation in-country. While I discuss the details of Ghana’s technological landscape further within this chapter, suffice to say that the technology landscape has reached a point of inflection.

Some leaders in the African technology space have critiqued African hubs for their failure to create wildly successful ventures. Mark Essien (2015), founder of hotels.ng and an outspoken Nigerian tech entrepreneur made this assertion in a blog post: “of the 9 biggest software start-ups in Nigeria, none was built by an incubator...of the 15 next biggest software start-ups...only one used to operate from [a hub]. Incubators just do not

work, otherwise they would have produced more successful start-ups in Nigeria. Even Kenya and Ghana that have a stronger incubator scene have produced nothing of note.”

In one of my interviews with an incubator in Ghana, who specifically asked to anonymise this feedback, the head said this bluntly: “truthfully, the incubator model is not very successful here...I can’t say this publicly so [anonymise this quote] but it is a weak model because it was not designed for emerging markets. Incubators make sense when you have proximity to stakeholders. In emerging markets, there is simply not enough proximity to the stakeholders.”

In summary, the oft accepted standard structures for entrepreneurial growth-enabling systems are less successful within the Ghanaian context. In addition, my research suggests that the limitations and shortcomings of these growth enabling systems are not felt equally by all participants.

### 5.3 The gendering of growth enabling systems

Gender matters. Albort-Morant and Oghazi (2016) in examining the utility of incubators for new entrepreneurs concluded that the entrepreneurs who find support from incubators most useful happen to be young people with university qualification, professional experience, and a family history of entrepreneurship. Bollingtoft and Ulhoi (2005, 266) highlight that “scholars have noted that the importance of the environment and of the structural and positional characteristics of the entrepreneurs themselves (e.g., gender and race, as well as the entrepreneur’s social network) are surprisingly understudied in the context of entrepreneurship and regional development policy.” A World Bank study revealed that of the over 6,000 business incubators around the world, very few are focused on women with little knowledge about women business incubation

and women entrepreneurs at large (Akbagysheva et al., 2009). At Y-Combinator, considered as one of the most prestigious incubators in the world, the percentage of female founders has averaged 4% since 2005 (Livingston, 2011).

While research on women's entrepreneurship is growing, it is lacking when it comes to women-led start-ups in the global South and from a feminist perspective (Kuschel, 2019; Bullough, 2013; Marlow & McAdam, 2015). A literature review on start-ups and gender revealed that majority of the research is focused on the US with limited studies on start-ups in Europe, emerging economies and developing countries (Kuschel & Lepeley, 2016). For example, Berger and Kuckertz (2016) acknowledge many of the studies analysing female entrepreneurship rely on data from the Global Entrepreneurship Monitor, which shows a level of female entrepreneurship which is significantly lower than for male entrepreneurship globally. However, the GEM also indicates that in Ghana, female entrepreneurship rates are *higher* than male entrepreneurship rates.

Moreover, most of these studies did not incorporate the perspectives of women entrepreneurs in technology (Kuschel, 2019). This omission is significant because the dominant business literature promotes the idea of technology and innovation as non-gendered sites (Ibid). However, many feminist scholars (Kuschel, 2019; Marlow & McAdam, 2015, Landstrom, 2007; Wacjman, 2004) argue that the ethos of technology resides in the domain of masculinity, a phenomenon which ends up marginalising women. Thus, science and technology symbolise hegemonic masculinity, with women comprising a minority of technology entrepreneurs and of owners of patents globally. We have also seen this promotion of technology as a non-gendered site in the case of artificial intelligence (AI). Many advocates of AI have touted the technology as a force for non-

discrimination because machines presumably treat all individuals the same way. Some further argue that algorithms promote equity by eliminating human biases through a purported transparent calculated algorithmic process of decision making (Sunstein et al., 2019). However, as Ghanaian-American computer scientist Joy Buolamwini pointed out in her ground-breaking research “Coded Bias,” any skewing or biases which impact the input data upon which the algorithm run become embedded within the decision-making processes of AI systems (Buolamwini, 2019).<sup>51</sup> Even Sunstein et al. (2019) acknowledge that the Achilles’ heel of all algorithms is the humans who build them and the choices they make about outcomes, candidate predictors for the algorithm to consider, and the training sample.

Machine learning systems process large volumes of historical training data and “learn” from these data sets to predict decisions. Human beings programme the predictive algorithms behind many AI tools, sometimes infecting their code with their biases and values. Scoring systems use datasets, some of which contain wrong data and others which are unrepresentative of the general population. Thus, all machine learning algorithms reproduce some level of statistical bias and can entrench discriminatory outcomes. Training data, algorithms, and other design choices that shape AI systems may reflect and amplify existing cultural prejudices and inequalities (Whittaker et al., 2018). We already have evidence of these problems, from “voice recognition that doesn’t

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<sup>51</sup> “We often assume machines are neutral, but they aren’t. My research uncovered large gender and racial bias in AI systems sold by tech giants like IBM, Microsoft, and [Amazon](#). Given the task of guessing the gender of a face, all companies performed substantially better on male faces than female faces. The companies I evaluated had error rates of no more than 1% for lighter-skinned men. For darker-skinned women, the [errors soared](#) to 35%. AI systems from leading companies have [failed to correctly classify](#) the faces of Oprah Winfrey, Michelle Obama, and Serena Williams. When technology denigrates even these iconic women, it is time to re-examine how these systems are built and who they truly serve.” (Buolamwini, 2019)

'hear' women, to Siri giving inadequate instructions to women's health services, to natural language models that use stereotypical associations like 'woman' with 'receptionist', to Google's automated photo tagging system describing African Americans as gorillas." (Ibid, 6). As Safiya Noble (2018, 10), author of *Algorithms of Oppression*, warns, "artificial intelligence is often constructed from grossly biased and decontextualised information and ideas that can be harmful to the public when turned into automated decision-making systems."

Amazon was using an AI algorithm for hiring but was forced to abandon it when it was observed that the programme was systematically excluding female applicants. It was trained to vet applicants by observing patterns in resumes over the past ten years. However, the data itself was beneficial to men given male dominance in technology, and the effect was an algorithm that penalised resumes that included the word "women" (Dastin, 2018). Like algorithms, growth enabling systems are not gender neutral. If they too are not designed to overcome bias and discrimination, they may further reinforce and reproduce gendered inequalities in their outcomes.

In focusing on women entrepreneurs in technology in Ghana and vocalising their perspectives, my research hopes to deepen our understanding of their gendered experiences. This matters for policy making because female founders of technology businesses experience gender bias and face significant barriers to growth given unequal access to venture capital financing, bank loans, and critical social networks (Mitchell, 2011; Coleman & Robb, 2010; Robb & Coleman, 2009; Marlow & Patton, 2005, Brush et al., 2001; Treanor & Henry, 2010; Carter & Shaw, 2006; Bruni et al., 2004). Yet despite



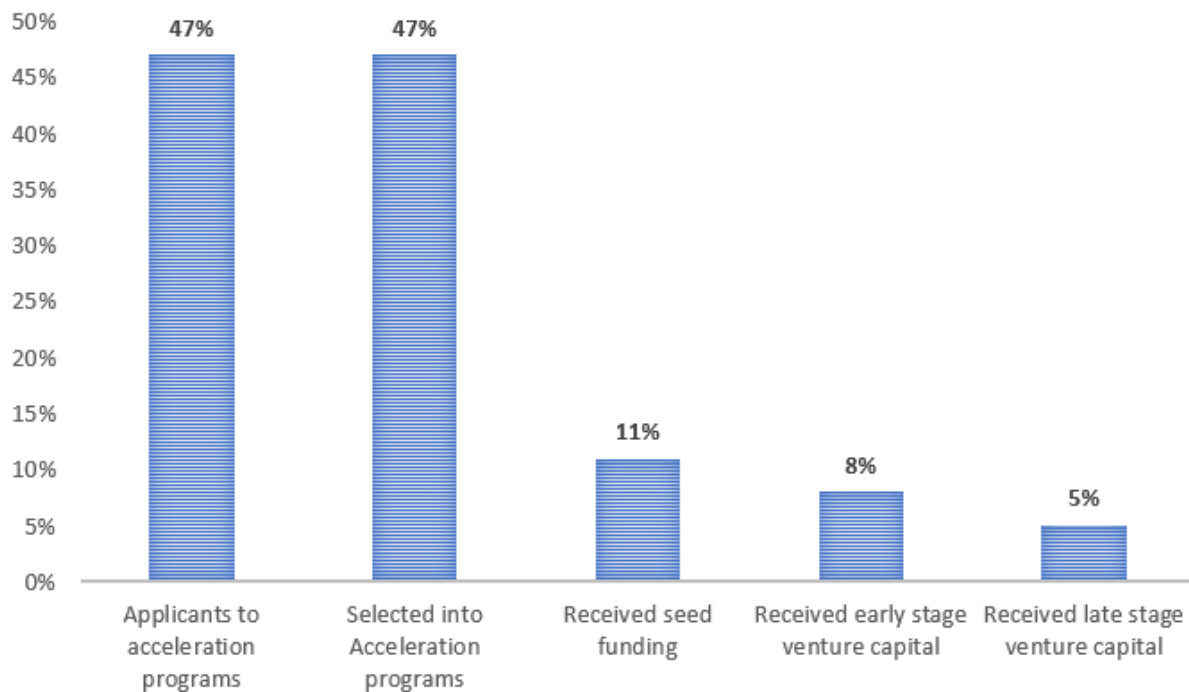
these impediments, many policies to support entrepreneurship are designed as gender neutral without paying attention to the gendered impact of those policies.

This has implications for the experiences of women entrepreneurs in incubators. The dominant assumption in the literature on incubators portrays a social and physical space where all interactions among founders, incubation staff, investors and advisers occur in a “neutral” manner. Marlow and McAdam (2013: 807) argue that such a view is narrow and limiting and that the technology incubator must be understood “as a social arena which is specifically gendered as masculine and as such, requires female tenants to undertake particular forms of identity work if they are to be recognised as legitimate within this environment.” Marlow and McAdam (2013) note that “although there is a well-developed literature exploring the processes and benefits of incubation, there is very little acknowledgement of the gendered presumptions and environment shaping this importance source of business support for growth-oriented firms” (807).

Underlying most entrepreneurship ecosystem frameworks is the assumption that all entrepreneurs have equal access to resources and support, yet there is substantial evidence that there are gendered inequalities with respect to participation, access to resources and outcomes in these ecosystems (Brush et al., 2018). While chapter 3 presented evidence for the classist nature of entrepreneurship, this present section further argues that entrepreneurship is not a gender-neutral field – beginning with examples from the growth enabling systems in this chapter and the subsequent chapter’s discussion on the gendered dynamics of venture capital. Gendered inequalities – within the organisation structure and culture of accelerators, incubators, and other intermediaries – tend to support men and inhibit women, respectively (Brush et al., 2018).

However unintentional, these tech spaces may have gendered norms for behaviours and interactions (Ibid).

Does this have an impact on the performance of female entrepreneurs? Globally only 5-6% of high technology entrepreneurs are women and only about 3-5% of incubated and accelerated projects are led by women (Kuschel, 2019). Start-Up Chile, an accelerator in Chile, is a notable outlier, with 20% women founders and 8.9% women-led start-ups (Kuschel & Labra, 2018). One of the venture capitalists I interviewed in Accra shared some statistics from an International Finance Corporation (IFC) study (reproduced in the graph below) that revealed that even though women comprised approximately half of the applicants and graduates of acceleration programmes in emerging markets, only 11% received seed funding (Sonneborn & Burns, 2020). This gendered inequality only worsened over the lifecycle of the company as only 5% of the female entrepreneurs who were selected into these accelerating programmes received late-stage venture capital (Ibid).



*Figure 5. 1: Percentage of applicants and graduates of acceleration programmes and percentage receiving seed funding (Source: Sonneborn & Burns, 2020).*

The IFC in collaboration with Women Entrepreneurs Finance Initiative (We- Fi), Village Capital and the World Bank Gender Innovation Lab (GIL), conducted research to assess the role that accelerators can play in addressing the gender financing gap. The research was based on a quantitative analysis of a global dataset of more than 2,000 companies collected over a five-year period. The researchers evaluated the commercial performance of male-led start-ups and female-led start-ups prior to entering the accelerator and post-acceleration in emerging markets. Four key insights emerged. (Sonneborn & Burns, 2020, 7).

First, they discovered that acceleration exacerbates the gender financing gap in equity financing. They found that male-led start-ups, on average, increase the amount of

equity they raise post-acceleration by 2.6 times as much as female-led start-ups. Importantly, they noted that acceleration resulted in a significant increase in the amount of equity that male-led start-ups raised, whereas acceleration has little to no effect on equity raises for female-led start-ups (Ibid, 8).

Secondly, they found that while acceleration exacerbates the equity financing gap, it removes the financing disadvantage that female-led start-ups face when raising debt. Specifically, while acceleration had no impact on debt raising for male-led start-ups, for female-led start-ups that participated in acceleration, they increased the amount of debt they raised by nearly 2.5 times as much as female-led start-ups that did not participate in acceleration (Ibid).

Thirdly, the statistical analysis they ran showed that the persistent gender financing gap cannot be explained by any quantifiable differences in the characteristics of the start-ups (e.g., intellectual property, revenue generation, geography, etc.) or founder differences such as education level or business experience. Their analysis suggests that the gender makeup of the founding team is impacting the disparity in capital raised, suggesting investor bias or higher perception of risk for female-led start-ups (Ibid).

Finally, they could not find any design elements in the accelerator programmes that could overcome the gender financing gap. They hypothesised that “effective interventions will need to be more holistic, reaching beyond addressing start-up behaviours and focusing on influencing the behaviour of investors and that to more effectively address the gender gap, accelerators have a role to play in helping mitigate investors’ bias and risk perception” (Ibid, 9).

The limitations and shortcomings of the quantitative IFC / World Bank study in failing to effectively diagnose the variables responsible for the persistent gender financing gap underscores the need for not just a holistic intervention as the study authors demand, but also holistic and interdisciplinary research methodologies that incorporate qualitative and ethnographic approaches that may help explain the gender gap.

Berger and Kuckertz (2016), in a study of 20 top technology start-up ecosystems globally, located in 12 different countries, suggest that the most influential factors for increased female entrepreneurship in the technology sector are at the local level of the ecosystem and not at the national level. Their analysis also suggests that gender equality and a favourable microenvironment fosters female entrepreneurship. Muntean and Ozkazanc-Pan (2014) argue that institutionalised biases categorise men and women into different entrepreneurial ventures, with women generally relegated to microenterprise, limited scale, slow growth, and socially oriented ventures, as compared to men who typically are associated with rapid growth-oriented, scalable, and well-resourced firms.

While the literature on business incubators offers a gender-neutral backdrop, the reality is that “for women who wish to benefit from incubation, they must firstly navigate tacit presumptions regarding their credentials for entry but then, will encounter a masculinised culture not conducive for their support and advice needs.” (McAdam & Marlow, 2009). Muntean and Okzakanc-Pan (2014) argue that there may be gender differences in how cultural capital is accessed and utilised in an industry like technology that is dominated by one gender and that when male incubator gatekeepers exclude female founders from information and influence, social capital can suppress entrepreneurship (see also Sappleton, 2009; Light & Dana, 2013; Crow, 2004; Adler &

Kwon, 2002). Incubator administrators can convey or signal legitimacy of a start-up to other actors in the entrepreneurial ecosystem such as angel investors, venture capitalists or banks. Thus, incubation is a “system capable of reinforcing socially constructed norms, such as the value of social capital” (Khoury et al., 2013, 574).

Muntean and Okzakanc-Pan (2014) posit that the value of social capital and social networks in incubators may depend on the gender of the entrepreneur and the gender of the gatekeepers. The rarity of women in incubators itself is a factor for further exclusion; there are not enough women within the incubators to spread the word to potential female incubatees (Ibid). The selection process for incubators has also been criticised for lacking transparency; decision makers often draw on personal social networks which tend to reproduce homophily due to social similarity, peer attraction and other reasons (Guillaume & Pochic, 2009).

Kapinga et al. (2018) in a study of 52 women entrepreneurs in the food processing sector in Tanzania highlighted challenges including poor infrastructure and lack of access to working space. The role of incubators in the development of the business of women entrepreneurs has received very limited research attention (Kapinga et al., 2018). Yet, business incubators can help women entrepreneurs with skills development, identification of new customers and new markets, and with infrastructural facilities (Kapinga et al., 2018; Shahzad et al., 2012; Chijoriga, 2003). Incubators may also be useful in assisting women entrepreneurs in improving business networks and increasing chances of success (Robinson & Stubberud, 2009). Evidence from a survey of 34 incubators in Pakistan showed that female entrepreneurs in incubators had a positive experience and benefited from the services provided (Shahzad et al., 2012). There is also emerging data on the

effects of women on entrepreneurship ecosystems. For example, a study of participants in Goldman Sachs' 10,000 Women Project indicated that 90% of the 3,000 women entrepreneurs went on to mentor other women entrepreneurs in their communities (Brush et al., 2018).

Given the aforementioned statistics on the lower participation and success rates of women in incubators, it is important to explore why certain structured programmes work for some but not all women. There are several possibilities to consider. One of the factors is education level, so for example, in Kapinga et al. (2018)'s study, most of the respondents had not completed tertiary education, so they are likely to pick up more new skills in an incubator than women who enter with tertiary education. There are also methodological differences that are important to note, for example, the Pakistan survey relied on self-reporting, which could result in incubatees over emphasising the benefits of the incubator because they do not want to feel that they are wasting their own time. I also noticed and discuss further this bias from self-reporting in the survey I conducted in Ghana below.

While women are thought to benefit more from incubators in theory, the literature suggests that, in practice, they face challenges in accessing resources and may face a more difficult or hostile male-dominated environments, and consequently may benefit less than male entrepreneurs from incubation (McAdam & Marlow, 2008; Buche & Scillitoe, 2007). For example, evidence from research in Tanzania showed that even among incubatees in business incubators, women entrepreneurs (as compared to their male counterparts) faced greater difficulties accessing financial services, had more limited working space and more limited skills training (Kapinga et al., 2018). Albort-Morant and

Oghazi (2016) also found that men report a more positive assessment of their experience with incubators than women. The evidence in Ireland suggests that few women entrepreneurs take advantage of incubation facilities, even though they are most likely to benefit from the services offered (Treanor & Henry, 2010). Foss et al. (2019) in a 30-year review of research on women's entrepreneurship noted that "there are fewer women who access university incubation facilities or related supports or start businesses in technology or STEM-based sectors that typically avail of such supports" (411). Robinson and Stubberud (2009), in a questionnaire-based study of 287,837 entrepreneurs in Europe, further found that women most often used family and friends as the primary source of business advice as compared to men who were more likely to use professional acquaintances.

There is also the consideration of the gendering of the technology industry itself and its impact on incubation. Kuschel (2019) has questioned whether the "masculine" and "male-dominated" features of the high growth technology industry are welcoming to women, especially women who expect to become mothers. Women who participate in business incubator or start-up acceleration programmes often experience "tokenism" where they are used to illustrate diversity, with negative consequences for the women founders as it affects their "sense of fit" and distracts from their businesses (Ibid).

It is estimated that there are more than 7,000 accelerators globally. While most of them are male-dominated, with an estimated 22% women participants, there is a growing trend of female-focused accelerators demonstrating success (Brush et al., 2018). It is important to understand the different experiences of women entrepreneurs in female-focused accelerators and incubators as compared to the general male-dominated ones



and the factors that lead to greater success outcomes for women entrepreneurs. Examples of these gendered differences are explored in my case study of Ivy Barley and Developers in Vogue later in this chapter. However, to understand the intricacies within the case studies, it is necessary to map out the technology incubation context within which they operate.

#### 5.4 The Technology Incubation Scene in Ghana

Ghana is among the leading countries in Africa with an emerging tech scene. Eric Osiakwan, the Managing Partner of Chanzo Capital, a leading Ghanaian venture capitalist, speaks of the leaders of the tech scene in Africa as the “KINGS” of Africa, referring to Kenya, Ivory Coast, Nigeria, Ghana, and South Africa. Friederici (2016) notes that Ghana’s history of support structures for tech entrepreneurs dates to 2001, when Busy Internet was founded (164). Originally founded as an Internet café, Busy Internet evolved into a central hub for Accra’s technology scene during the early 2000s as it became one of the few places with high-speed Internet. It was also located at Ring Road in Kokomlemle, a central convenient node in Accra, increasing its appeal as a convening location. Today, Busy Internet operates as a premium internet service provider and is no longer as explicitly focused on supporting tech entrepreneurs. However, other organisations have filled up the vacuum (Ibid, 165).

In 2018, the GSMA Ecosystem Accelerator Programme published research estimating that Ghana has 24 of the 442 active tech hubs on the African continent (GSMA, 2018). Accra has the majority of these tech hubs including Base Camp Initiative, Developers in Vogue, Kukun, Ghana Climate Innovation Centre, Impact Hub Accra, iSpace Foundation, MEST, Soronko Academy, Workshed, Mobile Web Ghana and

SBIncubator. Kumasi, the second largest city in Ghana has a few hubs, notably Kumasi Hive and HapaSpace. Ho, a smaller city in the Volta Region of Ghana, has two known hubs, Ho Node and KK Hub. Tamale, the largest city in the Northern part of Ghana has Hopin Academy. Desta (2018) reports that many ICT hubs in Africa suffer from slow internet speeds, limited human capital, limited funding, infrastructural challenges, limited space and investment and a low ratio of women. Below, I describe some of these growth enabling systems to give the appropriate institutional context to understand and situate MEST, widely considered the most prestigious tech incubator in Ghana, which forms the subject of a detailed case study and one of the key sites of my ethnographic research. I also share results from a survey I administered entrepreneurs who have participated or have experience in the growth enabling systems in Ghana. I shared the survey with several incubators and accelerators and got full responses from 15 entrepreneurs. I disaggregate the survey results by gender.

## 5.5 Incubators and accelerators

Incubators and accelerators in Ghana support start-ups at the early stage of their lifecycle. They often focus on technology start-ups, though some of them are open to other sectors. Incubators in Ghana focus on providing physical office space and access to networks for early-stage start-ups, many of which are at the ideation stage and have not yet generated any revenues. Some incubators also provide funding for the start-ups, typically ranging from \$10,000 to \$30,000 in the form of either a grant (free money) or equity (in which case the incubator acquires shares in the start-up). Accelerators typically focus on early-stage companies that are post-ideation, have some traction and need support to grow and scale. This usually means that the start-up is already generating

revenues and has customers. Accelerators usually do not offer grants, and typically take equity in the start-up in exchange for the benefits their programme offers (mentorship, network, peer-to-peer learning, access to office space and facilities, etc.).

Both incubators and accelerators in Ghana usually have a defined period ranging from a few weeks to several months. The process to apply is competitive and often involves applications and interviews, where the start-up needs to pitch its business model, its financial performance to date and/or financial projections, the addressable market for its product and service, its competitive differentiation in the market and importantly, why the start-up and its team is best positioned to succeed. There has been growing interest from larger corporations in Ghana in the incubator and accelerator ecosystem. Many of these corporations, such as Kosmos and Stanbic Bank, have launched their own incubators and accelerators as part of their corporate social responsibility. They offer office space, mentoring and training sessions, integration into supply chains (where synergies exist) and some of them offer financial capital as well. Others such as MTN have launched app challenges. These incubators and accelerators play a critical role in facilitating and mediating access to capital. Yet, in Ghana, the results are not very encouraging, as my survey demonstrates.

## 5.6 Survey Results

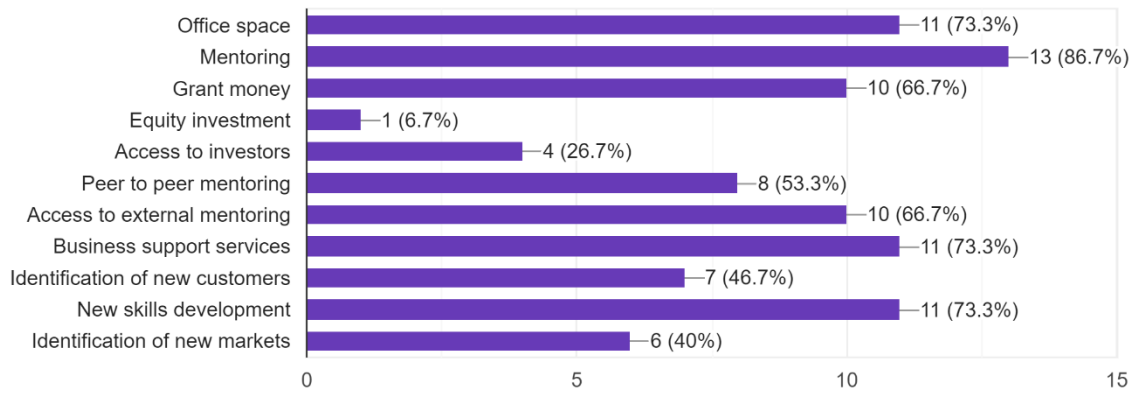
One of the key insights from the survey is that the access to equity funding which is widely touted in the business literature as a benefit from growth enabling systems is not reflected in the experiences of entrepreneurs. Almost all of the survey respondents (86.7%) reported that they have NOT raised any equity capital since joining the

accelerator or incubator. In addition, only one respondent highlighted equity investment as a benefit he/she has received from the accelerator/incubator.

Yet, despite this, about half of the respondents still rated their experience as a 5/5. This relates to my earlier point about the methodological challenges with self-reporting. It is difficult for incubatees to report that they had a bad experience because it is an admission that they have wasted their own time, and it may also make them feel less hopeful about the future. It is also possible that incubatees considered it a 'good' experience in the sense of it being friendly, interesting, and fun. All of these can shape a subjective feeling that an experience is 'good' even when that experience clearly does not bring one closer to the stated goal. It is also interesting that many of the respondents reported 'mentoring' as a benefit, even though the mentoring did not translate into investment for business growth. For many entrepreneurs I interviewed, they understand that incubators and accelerators do not actually guarantee or even strongly advance a start-up towards investment, but they believe that if they do not participate in some kind of incubation or acceleration programme, then they will have no chance at all at raising any capital. In other words, if incubator or accelerators only offer a 5% chance of success, 5% is still better than 0%. They also believe that these programmes offer them a 'credibility dividend' which is necessary but not sufficient for attracting investment capital.

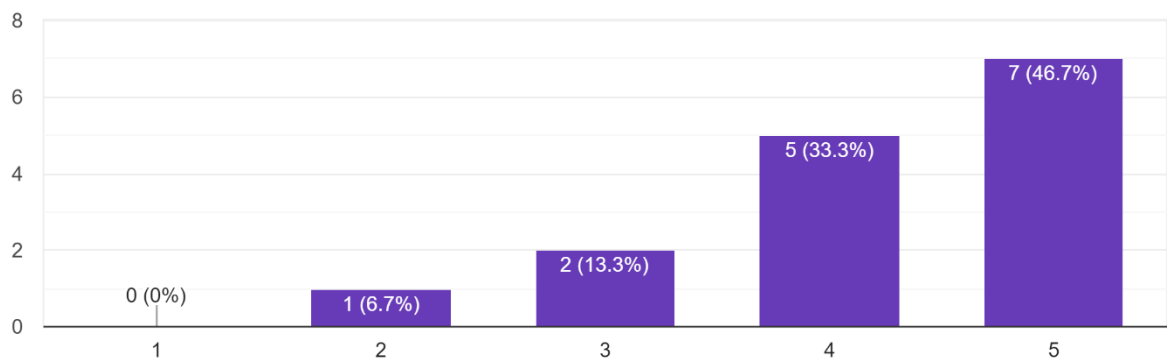
Please select from below, any of the benefits you have received from the accelerator / incubator?

15 responses



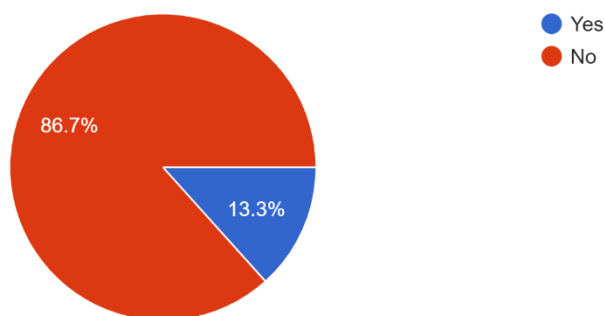
On a scale of 1 to 5 with 5 being best, how would you rate your experience in your accelerator / incubator?

15 responses



Have you raised any equity capital since joining the accelerator / incubator?

15 responses



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*Figure 5. 2, 3 & 4: Survey results on the benefits, experience, and equity capital using accelerator/incubator*

It is important to understand the diversity within the growth enabling systems scene in Ghana. There are several different players, some backed by development funding, others backed by corporate institutions and others that are backed by commercial interests. I profile a representative sampling of some of these institutions to set the context to better understand MEST and how it fits in the ecosystem in Ghana.

#### *iSpace Foundation*

iSpace provides support to start-ups from ideation stage to incubator stage and has supported 140 start-ups to date. Approximately fifty events are organised every year focused on networking and other activities for start-ups. iSpace claims it has helped its members raise a total of \$44,000 in funding. That seems like a very small number for an incubator that has supported 140 start-ups (an average of \$314 per start-up), suggesting challenges with fundraising. iSpace offers entrepreneurs working space and educational resources as well as access to the community of fellow entrepreneurs. It also connects

entrepreneurs to local and global resources. Members include both tech and non-tech companies. One of the tech companies currently at iSpace is MyDocGH, an online platform that connects health professionals/specialists and patients through its mobile platform.

### *INNOHUB Ghana*

Founded in 2015, Innohub is a Business Accelerator and Impact Investment platform which supports small and growing businesses to become sustainable, scalable and investment ready and matches businesses to capital. The first cohort in the accelerator had 8 start-ups in 2016 followed by 10 in 2017. Innohub also designed and managed the British Council Ready to Work programme. It also ran a lab incubator for 20 female-led tech small and growing businesses. Half of the leadership of Innohub Ghana are women. It invests anywhere from \$0 to \$50,000, structured as grants, equity, mezzanine debt or convertible debt.

### *Kosmos Innovation Centre (KIC)*

As previously discussed, some of the incubators are organised by corporations. For example, Kosmos Energy, a multi-billion-dollar energy company in Ghana, sponsors the Kosmos Innovation Centre (KIC) programme. Kosmos was founded in 2003 by a small group of explorers and is now one of the largest oil companies operating in Ghana. The Kosmos Innovation Centre programme designs business support programmes for start-ups featuring a mix of skills training, mentorship, and seed funding.

The KIC was established in Ghana in 2016 with a focus on innovation in agriculture. As of May 2020, over 400 aspiring entrepreneurs have participated resulting

in the creation of 11 start-ups that have received seed funding, additional business training and capital investment. KIC organises an annual AgriTech Challenge to inspire creation of new start-ups focused on the agriculture value chain. Average funding is \$50,000.

### *SBIncubator*

The Stanbic Bank Incubator (SBIncubator) is a third-generation business incubator and a corporate social initiative established by Stanbic Bank Ghana, one of the largest banks in the country, focused on the promotion of entrepreneurship among the youth and women in Africa. The incubator supports start-ups with access to resources and training, access to market and access to funding. The programme provides spaces, services, advice, mentoring, coaching and support for new start-ups. Membership criteria include that your business must be incorporated, you need at least 3 - 5 local employees and you must have a minimum viable product/service.

### *Ghana Climate Innovation Centre (GCIC)*

Founded in 2016 and funded by the World Bank, GCIC is hosted at Ashesi University and is a business incubator with a unique focus on developing SME ventures and entrepreneurs in Ghana's 'green economy' focusing on energy efficiency and renewable energy, solar power, climate smart agriculture, domestic waste management, water management and purification and other green businesses. GCIC offers its incubatees business advisory and mentoring services, technical support as well as funding. The average investment size is \$40,000 (Browne & Acquah, 2019, 104). Korlekour, which I discuss in chapter 4, was an incubatee of GCIC.



## *Impact Hub Accra*

Impact Hub is part of a global network of hubs all over the world spanning 5 continents. Its spaces are a hive for incubation and acceleration programmes, co-working space, and networking events. Impact Hub Accra describes itself as “a catalyst to foster social innovation. We are a global community, consultancy, and a creative space. We work at the intersection of innovation and society to collaboratively create impact with an entrepreneurial mindset.”

William Senyo, the Founder and CEO, told me that there are currently over 35 companies in the Hub, 35% of which are foreign and the rest local. “We don’t take complete foreign teams; you have to have a blend of local.” Admissions is partly based on impact. “Even if you are hardcore for-profit model, you have to have some metrics around empowerment for young people, skills transfer, or learning in our community...we also look at your carbon footprint...” It is also important that there is the potential for strong growth. Like Guillaume and Pochic (2009)’s findings, Impact Hub’s recruitment process is based mostly on references: “people we trust would [recommend companies to us].”

### 5.7 Case Study: MEST

Meltwater Foundation, the non-profit arm of Meltwater Group, a provider of Software as a Service (SaaS) companies, established the Meltwater Entrepreneurial School of Technology (MEST) in 2008 in Accra with a donation of \$20 million. MEST aims to provide African students with the entrepreneurial skills to establish global software companies to help stimulate local economies and create jobs. Returns generated from investing in the incubated companies cycle back into the non-profit programme, creating a sustainable model for enabling software entrepreneurs in Ghana. MEST is located in

two large houses in East Legon, about ten minutes' drive from the campus of the University of Ghana and a few minutes from Soronko Academy.

MEST opened its non-profit incubator in Accra in 2008. The incubator is the second stage of MEST's three-phase entrepreneurial programme designed to foster the growth of software companies in Africa. Phase one of MEST is a two-year programme where fully sponsored students, known as Entrepreneurs in Training (EITs), receive hands-on education in software development, basic business fundamentals and entrepreneurship. The fourth and last semester of the programme is dedicated to the incubator application, which consists of an investor pitch, a business plan, and a software prototype.

In phase 2, the incubator stage, the MEST entrepreneurs get seed funding and incorporate their companies. The focus in the incubator is partly to develop a commercially viable go-to-market strategy and partly to further develop their prototype, therefore enabling it for a commercial launch. Expected duration of this stage is one to two years. MEST invests equity in the companies, typically investing \$100,000 for a stake of 10-20% in the companies. For context, Y-Combinator, one of the most famous incubators in the world, based in the United States, invests \$125,000 for a 7% stake.

In phase 3, the MEST entrepreneur's primary focus is commercial deployment and scaling of their business. During this stage, the Meltwater Foundation continues to provide support through the recruitment of international mentors with relevant industry experience who serve as board members or company advisors.

In a press release, Jorn Lyseggen, CEO and founder of Meltwater said:

The progression of so many companies to the MEST Incubator stage is a testament to the entrepreneurial spirit of our students, and the remarkable business ideas that they've developed...the beauty of software is that all you need is a computer at the cost of a couple of

hundred bucks, and after that it is all up to yourself. Your success is a function of your drive, talent, and imagination. Following the MEST entrepreneurs from the start, I have seen that they have abundance of the latter.

His comments reflect the previously discussed assumption of technology entrepreneurship as a gender-neutral and class-neutral phenomenon and the methodological challenge of overcoming heroic narratives of success.

In my interview with Ashwin Ravichandran, the Managing Director of MEST, he shared that they receive over 5,000 applications and only accept the top 1%. Of that cohort, less than half typically apply for the incubator and are accepted. Currently, about 35% of MEST incubatees are companies led by women. Ashwin shared that “we are actively looking to empower women in tech because women have a clear advantage, and that advantage is empathy.” While speaking sincerely about the goals to empower women, the comments betray a gendering in his assessment of the entrepreneurs.

Ashwin insists that there is no discernible difference in the *quality* of applications between men and women, but the problem is that only a third of applicants to MEST are women, resulting in only 35% of the incubatees being women. He noted that many of the enterprises that women in MEST develop typically revolve around lifestyle, productivity and utility and have impact embedded in their business model. He pointed to Tress, a lifestyle app for women’s hair and argued “they don’t think of scale as men do, but their scale [in terms of impact] is greater than men.” While he was well-intentioned, his statements reflect embedded biases which Muntean and Ozkazanc-Pan (2014) described as institutionalised biases which categorise men and women into different entrepreneurial ventures, with woman generally relegated to microenterprise, limited

scale, slow growth, and socially-oriented ventures, as compared to men who typically are associated with rapid growth-oriented, scalable, and well-resourced firms.

In the 2017 cohort of incubatees, MEST invested \$100,000 each in 9 out of 14 start-ups, of which 3 of the 9 were companies founded by women. The 5 that did not receive funding died. MEST successfully exited 1 company. Of the remaining 8 companies, 3 are dead and 5 are still surviving. Of the surviving 5, 4 are led by men and 1 by a woman. In gender terms, 3 start-ups led by women were funded by MEST, of which 1 survived (33.3% survival rate) and 2 died. By contrast, 6 start-ups led by men were funded by MEST, of which 5 survived (83.3% survival rate) with 1 resulting in an exit, and 1 died. Two out of the 9 (22%) were able to raise additional funding apart from MEST's \$100,000. Those 2 were start-ups led by men.

Ashwin believes that "the incubator model is flawed from a gender perspective because it's too short term focused and is focused on quick execution...it also has a legacy bias, an institutional bias against women." He said MEST is focused on gender inclusion and on helping more women raise capital. This is reflected in more recent cohort data. For example, in the 2018 cohort, MEST funded 8 start-ups, of which 3 are currently in the process of raising capital. Of those 3, 2 are led by women.

MEST builds relationships with several local and global investors. Local investors include Golden Palm Investments, Injaro, 4DX Ventures, Victor Asemota (a Nigerian born, but Ghana based prolific angel investor), Future Africa, IFC Ventures and a group of wealthy Nigerian entrepreneurs who are actively involved in angel investments in Ghana. Global investors include Western World, Ingressive Capital, Y-Combinator, 500 Start-ups, TechStars, Timon Capital and some family offices in South Africa and Kenya.

However, Ashwin admits that “we are not ensuring they meet investors; we put the onus on the companies themselves to drive investor interactions.” MEST nonetheless organises a few events, including the Quarterly Guest Lecture Weekends where they bring global investors to Ghana and a mega annual event, the MEST Africa Summit which includes a pitch day and the sharing of materials on their portfolio companies.

There are implications for the broader ecosystem. For example, Impact Hub Accra, one of the leading business incubators in Ghana, targets MEST as a key source of incubatees. The CEO of Impact Hub Accra shared that the composition of their incubatees is about 30-40% women, which reflects the composition of women in the applicant pool. In this way, there is a gatekeeping effect that further exacerbates the gendered inequalities. Other larger funding organisations, e.g., GIZ or Kosmos, partner with Impact Hub to fund their various entrepreneurial programmes. Impact Hub becomes a ‘vetting’ gatekeeper in effect for those larger organisations. In this way, the applications to MEST, which are skewed towards male entrepreneurs, result in the MEST incubator having a minority of women, which in turn results in Impact Hub reproducing this minority, which leads to fewer women than men having access to funding partners. Given this gatekeeping phenomenon, it is important to understand how women in Ghana gain access to these incubators in the first place and their experiences building enterprises once they gain admission. The experience of Ivy Barley, one of my interlocutors, is instructive in this regard, which I feature in the next section.

### 5.8 Case Study: Ivy Barley

Ivy is a young Ghanaian woman, 28 years of age. Like many of the female tech entrepreneurs I interviewed, Ivy grew up with access to a computer and the Internet at

home and so was 'tech-savvy' from a young age. However, her interest in technology and programming really blossomed during her university education at the Kwame Nkrumah University of Science and Technology (KNUST) where she pursued a degree in Actuarial Science. Ivy shared that she attended several tech programmes such as Dev Congress and other meetings, conferences, and events. "I was always the only woman...it was very isolating...I kept asking where are the women? And the men would always tell me that women don't like tech."

After graduating from KNUST, she spent half a year as a teaching assistant at the African Science Academy, a leading specialist science and maths secondary school for gifted girls in Africa based in Accra. "It was at ASA that I was inspired to start Developers in Vogue...I kept being told that women do not like tech and do not like computers, but at ASA I saw exceptional girls with a strong interest in technology and coding and that gave me the inspiration behind DIV." Ivy's observations also matched what I witnessed at Ashesi University, one of Ghana's leading private universities. At the Ashesi 2019 graduation ceremony, even though women made up a minority (about a third) of the graduating Computer Science class, they constituted over 80% of all the honours awarded, including summa cum laude and magna cum laude, countering the notion that 'women don't like tech.'

Ivy shared that in 2017, Comic Relief, a non-profit organisation in the United Kingdom, sponsored an incubator programme called "Her Future Africa" in partnership with the Africa Technology Business Network, "a social enterprise working to harness technology for sustainable development in Africa" and Women in Tech Africa, a Pan-

African network of female tech entrepreneurs founded by Ethel Cofie, one of the subjects of my field research.

Her Future Africa comprises of an innovation bootcamp which brings together about 30 talented young women to develop high impact business ideas. Over 3 days, they are equipped with business skills and digital tools to develop their business ideas. They are then guided to conduct market research and collect customer feedback and market validation. This allows them to develop a more robust business proposal and to put together a pitch deck to present to potential investors or partners. The programme also matches participants with mentors from around the world. At the end of the programme, the participants submit their final project plans, and ten finalists are selected to pitch on Demo Day. The winner, selected by a panel of judges, receives support from an incubation partner for 6 months and some seed funding to launch their business. In Ghana, the incubation partner was iSpace.

Ivy learned about this programme online on a website that was featuring resources for female entrepreneurs. She confessed that “initially I wasn’t even selected for the initial 30 participants, but I pitched to the organisers to still participate, and they agreed.” Ivy shared that, in a direct contrast from the feeling of isolation she experienced at the all-male tech events, “this was a great experience...I had never interacted with that many women in the same space at once...hearing their perspectives was very helpful for me.” Ivy was selected as a finalist and emerged as 2<sup>nd</sup> overall in the pitch competition. As Stevenson and St-Onge (2005) note, women-focused incubators have the advantage of providing a safe and nurturing space for women that is tailored to the idiosyncratic needs and challenges of women entrepreneurs. It was also at this event that she met Maxwell

Cofie, a tech engineer who was a volunteer. He later joined as her co-founder in establishing DIV.

It was at this incubator programme that Ivy also learned about the second incubator programme she participated in, the Ghana Youth Social Entrepreneurship Competition, a programme organised by the Ghana Think Foundation, a social enterprise founded by Ato Ulzen-Appiah, a social tech entrepreneur. She also later saw information on this incubator on some tech WhatsApp groups. Ivy's experience supports the research findings of Muntean and Okzakanc-Pan (2014) about incubators playing roles as gatekeepers. The lack of women in incubators further exacerbates the inequality as those spaces become sites for the spread of valuable information such as information on other incubators or on funding opportunities. The same can also be said about these specialised WhatsApp groups. For example, I am a virtual participant observer on a WhatsApp group called "Ghana Techpreneurs Group" (Ivy is also a member). The group only has about 30% of women out of 254 members. A lot of valuable information is shared on this group including information about incubators and funding opportunities. In addition, this WhatsApp group also has several prominent government officials in it, including the Chief Executive Officer of the Ghana Investment Promotion Centre, and they often solicit input from this group on government policies related to technology and entrepreneurship; membership in this group offers opportunities to *shape* government policy. Thus, the gendered inequality in the composition of the group could contribute to gendered outcomes in the applications and access to these opportunities.

For the second incubator programme organised by Ghana Think, Ivy shared that it was a co-ed programme for 2 months with a mix of in-person training sessions as well



as online sessions. Hundreds of entrepreneurs applied and 20 were selected; 10 were men and 10 were women. However, the 6 finalists were 5 women and 1 man. The panel of four judges comprised three men (including William Senyo, the founder and CEO of Impact Hub Accra) and one woman. Ivy was effusive about her experience. “It was a very cool experience...it was more exciting than the first incubator because of the programme content, it was very, very good...and their support has been on-going, we still have an active WhatsApp group, and they keep sending us helpful information and keep checking on us.”

However, in line with Kuschel (2019)’s findings, Ivy also shared some reservations about ‘tokenism.’ She shared that “I noticed the women were being amplified more than the men...it was like for the same thing that a woman would do that a man had done, there would be more hype *because* she was a woman. It felt as if there was a lower standard being applied.” The final event was organised at Impact Hub Accra where she met William Senyo, its CEO and one of the panel judges.

I interviewed William, who shared with me that women only comprise about 30-40% of the Hub and shared that “the way this start-up play is built, unfortunately, it is more suited to men than women.” He added, “I think it is based on the old boy’s thing...people connect on a man-to-man level and the language used is still very masculine.” He also mentioned that one great challenge is the lack of female role models in the space.

Who are the leading female entrepreneurs? I think generally I can count about five lead entrepreneurs who are female in the space out of over 35 men. I do not know what accounts for it, but I just think men are more likely to start a company given how things operate in Ghana compared to women. At least in the kind of innovation community we have right now, it is more tilted to men over women. We haven’t been that intentional on the gender side because we are picking our battles for now, we are a small institution trying to optimise and gender hasn’t been one of the core foci for now so I

can't give ideas for what accounts for this. I just know off my head, given what it takes to raise money, it's been a lot easier for men than women and part of it is the valley culture seeping into ours in a certain way built on top of the local cultural reality as well.

Women in Ghana have always been entrepreneurs dating back to pre-colonial times. Yet, William believes that the tech ecosystem in Ghana, in its adoption and mirroring of Silicon Valley culture, may be reproducing the gendered inequalities prevalent in Silicon Valley. He believes that by holding the (mostly male) models in Silicon Valley as the signposts of success, Ghana's tech ecosystem similarly supports mostly male entrepreneurs. Yet, Ghana's tech ecosystem demonstrates outcomes for women, that while not at a level of parity, greatly surpass that of Silicon Valley. William's Impact Hub which averages 30-40% women per cohort *without a gender-conscious strategy* easily dwarfs Y-Combinator, one of the most prestigious incubators in the world, which had averaged 4% women since 2005 (Livingstone, 2011). This number has improved to 24% in 2019 after Y-Combinator took a gender-conscious approach to its recruitment strategy, including creating a Female Founder Conference in 2014 and supporting organisations such as Dev/Colour and Women Who Code (Teare, 2019).

Will told Ivy about an incubator programme Impact Hub was running in partnership with the German government focused on women. It came with an opportunity to win a cash prize of 15,000 euros. He invited her to participate. Again, Ivy only had this opportunity because she was already in the Ghana Think incubator, emphasising the ways in which these events and programmes act as 'gatekeepers' to valuable information and networks.

Hundreds of applicants applied to the Impact Hub incubator out of which 15 teams were selected, including Ivy's. She qualified into the finalist selection of 2 teams from Ghana to travel to Berlin to compete for the 15,000-euro prize. In Berlin, she joined a group of 10 teams from all over the world who were going through additional training before delivering their pitch on demo day. The programme, which was focused on women entrepreneurs, had only 2 men out of the 10 finalist teams; 4 of the 10 teams were African.

Ivy obtained significant benefits from the incubator in Berlin because it gave her credentials that signalled credibility to the market. As McAdam & Marlow (2009) have argued, incubators can play a huge role in conferring a stamp of credibility on incubatees. Ivy shared that she was invited to present her pitch to German Chancellor Merkel on the side-lines of the G-20 summit where there was a special session on women's empowerment. "We blew up after that...I got featured on BBC...lots of global media came in...it gave us huge credibility." Ivy ended up winning the top prize of 15,000 euros. This credibility dividend also helps explain why incubatees are generally positive in their evaluations of incubators per my research survey, even when they have not identified new customers or attracted new investment at the end of their incubation experience.

After that experience, she also participated in an incubator sponsored by the Dutch embassy in Accra to support social enterprises focused on women. It was a three-month programme. It was at this programme that she met Nelson Amo, the CEO of Inno Hub who became one of her greatest mentors. Finally, she participated in an incubator sponsored by the British Council and then decided that the content was repetitive, and she was starting to reach a point of incubator fatigue and diminishing marginal returns, so she did not apply to any programmes for two years.

Ivy's experience with incubators illustrates the gatekeeping phenomenon previously discussed. Yet, her narrative also suggests gendered experiences in these incubators. She had a very different experience from her male co-founder in Berlin. "I didn't really like the experience...I also found the content repetitive." However, her male co-founder Maxwell had a very different experience. "Maxwell had an amazing time and connected with everyone and found the Berlin incubator experience very rewarding." The divergence of their experiences raises the question of the design of these programmes and mirror the research findings of Albort-Morant and Oghazi (2015) who found that men had better experiences with incubators. Are these programmes, even the ones created for women, designed in ways that better appeal to male entrepreneurs?

Ivy designed a solution, which she is actively working on to combat the bottlenecks that prevent women from accessing opportunities in technology entrepreneurship. She created a female-focused accelerator called Developers in Vogue (DIV).

#### *Developers in Vogue (DIV)*

In November 2017, Ivy and her co-founder finally launched DIV with an initial cohort of 20 women. They created an application form on Google Forms and shared it on social media. "In two weeks, we had over 300 applications, but we only had space for 20 women, so we had to shut down the application portal; we were overwhelmed by the demand." The selection committee initially comprised of just 1 woman (Ivy) and 3 men for the initial cohort, but it is now all women mostly made up of graduates from prior cohorts.

For the selection Ivy shared that "I prioritised passion and commitment over a background in tech because I didn't want to create any barriers...and programming can be taught." The initial programme was a 2-month training programme comprising of both

remote online sessions and face-to-face/in-person sessions. However, based on user feedback from the women who participated in it, it's now in two modules, a 3-month option with 2 months online and 1 month in person sessions or a 6 month more flexible option with 4 months online and 2 months of in person sessions to cater to working mothers with more difficult schedules.

Ivy shared that in the initial market validation studies she conducted, many women shared that they preferred a women-focused incubator because they sometimes felt intimidated in the incubators that are dominated by men. In addition to the training, Ivy said “we also create a supportive community for them because the training is very challenging and takes a huge commitment.”

DIV has four pathways for women who go through their programme. The first is employment with tech companies. They train the women on coding and place them with local and global tech companies. For example, one of her graduates, Jemila, has been placed as a data engineer with Zipline, a San Francisco-based drone company operating in Ghana and Rwanda. Another graduate, Dorothy, is now a software engineer at Vodafone Ghana. One graduate has been employed by Microsoft in the U.S. and others have been hired by local tech firms. The second pathway is freelance work. DIV contracts several tech projects from firms locally and globally and hires its graduates on a temporary basis to execute these projects. This creates opportunities for the graduates to utilise their skills and earn income. The third pathway is supporting them to pursue further education. They already have some graduates who have received admissions into elite schools such as Columbia University and Dartmouth University in the United States. These schools are

increasingly seeing DIV as a signalling of the credentials they are looking for in prospective applicants.

The final pathway is entrepreneurship. DIV pursues this both internally and externally. Internally, they have started a small incubation programme that they intend to grow over time. They currently have 2 start-ups in their incubation programme focused on artificial intelligence and its applications in a variety of sectors. They have also partnered with external incubators, most notably MEST where they have already placed 5 graduates, 2 of whom obtained \$100,000 in seed funding. They have also partnered with Kosmos's KIC incubator. They have already placed 15 women with KIC. As previously discussed, KIC invests an average of \$50,000 in incubatees.

### *Funding Challenges*

Despite DIV's success in helping to solve the gatekeeping problem and democratizing access to technology for women, once these women get into incubators, their experiences validate the IFC/World Bank study when it is time to raise equity capital. Ivy herself has experienced this. She recently participated in an accelerator programme in September 2019 organised by Germany Vodafone in Berlin. It was a 2-month programme and they selected 5 start-ups from across the world. She did not have a great experience here. "It was not the right fit... and it failed to help with fundraising."

Whereas the business literature has pointed out the significant role that incubators and accelerators play in helping raise capital, and the IFC / World Bank Study has shown that incubators in emerging markets do not have a significant impact on the ability of

female entrepreneurs to raise equity capital, Ivy's experience suggests that perhaps the African identity of start-ups mediates that influence. "There is this perception when you are coming from Africa...all the investors they connected us to were European and they told us they had no interest in investing in start-ups in Africa and told us to we shouldn't be here, and we should rather be trying to raise local capital." She also shared a similar disappointment with the Dutch programme: "it didn't live up to its expectations; they promised to connect us to investors and investment opportunities, yet nothing has materialised." It also suggests a possible intersectionality of gender and race operating together to disadvantage women like Ivy who try to raise capital from European and American capital providers.

## 5.9 Conclusion

In this chapter, we have analysed Ghana's tech ecosystem, looking at the diverse range of growth enabling systems. We have seen how these system specific spaces are shaping access to the market for entrepreneurs. Through the literature review and the case study of MEST and Ivy, we have observed how women have worse outcomes in these incubators, accelerators, and tech hubs. Yet, the data also shows that Ghana's outcomes are significantly much better than that of most of the world. Even Start-Up Chile which has been lauded in the literature as an outlier with 20% women founders pales in comparison to Ghana's Impact Hub with 30-40% women and MEST with 35% women. Part of this is attributable to Ghana's entrepreneurial landscape which boasts a higher rate of female entrepreneurship than male entrepreneurship. Part of it is also by design, with some incubators increasingly taking a gender-conscious approach to recruitment.

Yet, despite this, Ivy's experiences, and her creation of DIV and its preliminary success suggests that a gender conscious approach in not just the recruitment but also in the design of activities of the incubator or accelerator or hub could lead to improved numbers of women participants and improved experiences. At the same time, Ivy herself has struggled to raise equity funding, suggesting limitations of even a gender-conscious approach and necessitating a deeper look at the venture funding ecosystem, which the next chapter analyses. Ultimately, while Ghana still has a long way to go in achieving equal outcomes for men and women that emerge out of its tech ecosystem, it has a lot to teach the rest of the world, which lags even farther behind.



## Chapter 6: Venture Capital and the Gender Gap

### 6.1 Introduction

*“Venture capital is clearly a man’s world ... when you are a woman, a black woman, an African black woman, an African-educated African black woman, it’s a fool’s errand.... why even bother wasting your time? I don’t” – one of my interlocutors*

*“We want to invest in women and black women especially, but there’s just no pipeline...” – US based venture capitalist*

Capital is not gender neutral. As Olarewaju and Fernando (2020) argue “female entrepreneurship may be a route to women’s socioeconomic advancement in developing countries, but this relies on the use of gender and context-sensitive measures to gauge success, as well as the presence of institutional support that facilitates women’s equitable access to the resources they need to start-up, grow and sustain their business ventures” (1). It is well established that financial capital is critical to the growth of start-ups and the success of a business (Brush et al., 2018; Farhat & Mijid, 2018; Bates et al., 2013; Banerjee & Duflo, 2008; Cooper et al., 1994). Lack of access to finance limits female entrepreneurship and constrains women’s economic activities (Aterido et al., 2013). In a study of the retail and services sector in the United States, Coleman (2007) found that human capital played a greater role in the success of female-owned firms whereas financial capital played a more important role in the success of male-owned firms. Even though there is the widespread perception that women’s businesses can succeed based on human capital, my research demonstrates that financial capital is an equally critical

factor, and female entrepreneurs develop innovative strategies to adapt to the various challenges they encounter in raising capital for their ventures.

Nineteen out of the 21 female tech entrepreneurs in my research opted to not raise venture capital.<sup>52</sup> Venture capital is largely a product of Silicon Valley culture. Most of the academic studies on venture capital in the United States are focused on men and there is very little understanding of the factors related to seeking and obtaining equity funding by women entrepreneurs (Carter et al., 2003, 3). The experience of female entrepreneurs seeking equity capital is impacted by a complex and dynamic set of factors, which must be situated and interpreted within particular regional, national, cultural, historical, and institutional frameworks in which these entrepreneurs operate, and which reinforce certain social mores, beliefs, practices and understandings (Jamali, 2009). However, very little of the academic literature is focused on the experiences of female entrepreneurs in Africa.<sup>53</sup>

In this chapter, I evaluate the existing literature on venture capital and the gender gap and make an original contribution in identifying two key issues. These are: the methodological and geographic limitations of prior studies and the extrapolation of their

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<sup>52</sup> Venture capital is a key form of financing for early-stage companies and start-ups and a key driver of growth for these companies (Balachandra, Briggs, Eddleston and Brush 2017, 116). In equity financing, venture capitalists (VC) will expect annual returns of between 15 to 30 percent and ownership of the business ranging from 20 to 75 percent (Greene et al., 2001). Patterns of venture capital funding: is gender a factor? *Venture Capital: An international journal of entrepreneurial finance*, 3(1), 63-83. , Brush, Hart and Saporito 2001, 72). Beyond just the provision of equity funding, VCs also provide expertise in business and finance and often serve as directors of the firm (Shava, 2018, p.1). Based on their research on 100 SMEs that had received venture financing in Kenya, Memba et al. (2012) found that venture capital investments in SMEs had a positive impact on SME growth as well as improving the livelihoods of people. Human capital and social capital play an important role in raising equity financing, with formal education and prior work experience being some of the most cited factors (Carter et al., 2003; Farhat & Mijid, 2017).

<sup>53</sup> We must also exercise caution when looking at some of these studies because as Aernoudt and San Jose (2020) point out, there is a lot of variation in the definition of women-led businesses. Many studies define women-led as having at least one woman as a founder or in the C-level executive team. As they highlight, that broad definition could mean that a firm with a male CEO, CTO, CFO, and a woman CMO would count as women-led, though, in reality, the key decisions are not being made by women. For my research, the businesses I look at are founded or co-founded by women, with the women being the key decision makers in the company.

findings to a global level; and the relative importance and the inter-relation of what are currently described as 'supply side' and 'demand side' reasons for a gender gap in investment.

To better understand how female technology entrepreneurs raise equity capital in Ghana, I will analyse the venture capital landscape in Ghana and across the African continent. I will then work through two case studies of investment companies in Ghana taking a critical look at their investment practices, screening processes and datasets. My research with these two companies cohered with the impact of 'herding' on investment decisions in the secondary literature, but the evidence on clear distinctions between supply side and demand side did not mirror the literature in other geographies. This chapter brings nuance to the extant literature by bringing in an interdisciplinary lens through four key themes.

First, as the literature review will show, women in white collar settings often must perform masculinity which entails additional labour. It also creates risks with the blowback of being perceived as a "bitch." This burden is exacerbated for black women who may then be perceived as angry, which leads to the second observation. The second theme is on intersectionality and its intricacies. My research shows the double bind that black women face, with case studies delving into/revealing the nexus of race/gender/class/geographic hierarchies/marginality. The third theme is transnational ties on both the supply and demand side which are essential because venture capital retains strong ties to its roots in Silicon Valley. The historisation of Venture Capital as an artefact out of Silicon Valley also helps us understand the observations on homophily, bias and the Harvard-Stanford-MIT ("HSM") effect, which I discuss later in this chapter.

The fourth theme is on co-construction of knowledge and practices (see Jasanoff, 2004; Hacking, 1999; Bijker & Pinch, 1987). My research suggests that the supply side and demand side are not cleanly separated but are co-constructed: how entrepreneurs perceive the investment companies influence the ways in which they engage with the investment companies; in turn, the behaviours, techniques, decision-making, and social practices of the investment companies, influence the perceptions that entrepreneurs have of them.

## 6.2 Is there a gender gap in venture capital?

The extant literature on venture capital suggests a significant gender gap in venture capital financing. Data from investment rounds show that women are underrepresented in both the formal and informal venture capital market (Aernoudt & San, Jose, 2020). Cross country studies have shown that women are less likely to get financing from a formal financial institution or are charged higher interest rates than men (Murayye et al., 2009) and raise less venture capital than men (Brush et al., 2014). Barriers to financial capital are a driver of the lack of women in technology entrepreneurship (Wheadon & Duval-Couetil, 2019; Avnimelech & Teubal, 2006; BarNir, 2012; Brooks et al., 2014; Brush et al., 2014; Gatewood et al., 2003; Holmquist & Wetter, 2010; Klotz et al., 2014; Menzies et al., 2004; Tinkler et al., 2015; Zimmerman & Zeitz, 2002). Female entrepreneurs are priced at a higher risk level than men by venture capitalists and are impacted by multiple cognitive biases (Wheadon & Duval-Couetil, 2019; Coleman & Robb, 2014; Gatewood et al., 2003; Orser et al., 2006). Female entrepreneurs are less likely to receive private equity funding compared to male entrepreneurs with comparable levels of experience. As a result, female entrepreneurs typically start new businesses with

smaller seed capital and are competitively disadvantaged relative to better-funded enterprises (Wheadon & Duval-Couetil, 2019; Avnimelech & Teubal, 2006; Coleman & Robb, 2014, Cohoon & Aspray, 2006; Robb & Coleman, 2009).<sup>54</sup>

Some of the research points to outperformance on the part of women-led businesses. For example, Abouzahr et al. (2018) in a study of 1,500 start-ups in Massachusetts found that enterprises founded by women outperformed enterprises founded by men in three important categories: they delivered higher revenue per dollar invested, they generated 10% more in total revenues over a five-year period, and they generated 78 cents for every dollar invested (compared to 31 cents for men), demonstrating a greater return on invested capital. Yet, despite this outperformance, Aernoudt and San Jose (2020, 129) find that women-led enterprises receive less funding than male-led enterprises in absolute and relative terms. Even though women comprise 30% of start-up founders, they represented only 1.7% of venture capital investments in 2018 in the USA and 1.4% in the UK. They also receive less funding: an average of \$935,000 compared to \$2.1 million for male-led start-ups in the USA (Ibid, 129; see also Brush et al., 2018).

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<sup>54</sup> A research firm, Plan Beyond, examined 6,045 companies with 11,672 founders globally that received venture funding in 2019 from seed funding to late-stage investments (Plan Beyond, 2020). Their key findings were:

- 73% of all venture backed founding teams are composed exclusively of men
- 60% of founding teams are exclusively white
- Only 5% of all founding teams include a Latinx founder and only 4% include a black founder
- Men-only teams receive three times more funding than women-only teams, independent of the company stage
- Founding teams made exclusively of white founders raise nearly 35% more money over their life than teams composed exclusively of non-white founders
- Companies with at least one black founder raise, on average, about 25% of what teams with at least one white founder raise
- Founding teams composed exclusively of women averaged 4.67 investors versus 6.17 investors for men-only teams
- Women-only teams are two times more likely than men-only teams to found companies with a social mission to improve society.

Even when equity capital raising occurs through technological platforms where there is no need for face-to-face interactions, the gender gap still persists. For example, Ewens and Townsend (2019) conducted an analysis of start-ups raising capital through AngelList, a popular online platform that connects investors with seed stage start-ups which allowed them to observe investor-founder interactions for a large sample of fundraising start-ups. They found that female-led start-ups experience significantly more difficulty getting interest from and raising capital from male investors compared to similar male-led start-ups (Ibid, 654). They also found that female-led start-ups are more successful than male-led start-ups with female investors (Ibid). They further discovered that male investors are less likely to share female-led start-ups with other investors, whereas female investors are more likely to share female led-start-ups. They also noted that the gender financing gap for female-led start-ups who raise capital from male investors decreases when they raise smaller amounts of capital or operate in female-dominated industries (this is not the case for male investors). Their data shows that male-led start-ups are more likely to be shared by investors (5% versus 3%), to receive an introduction request (19% versus 16%), or to receive a positive investment decision (2.5% versus 1.5%) (Ibid, 660).

As we will see in the case studies, intersectionality matters. A historic 21 women-led companies including Tala and Rent the Runway achieved unicorn status in 2019 with women-owned businesses raising a record \$6 billion (though paling in comparison to male-owned founders who raised \$195 billion). Yet not all women are benefiting from the increase in venture capital funding allocation to women. Less than 1% of global venture capital went to black women (Garrett, 2020).

While most of the research on venture capital and the gender gap has been focused on Europe and North America, there is some limited research on the African continent. Richardson et al. (2004) found that female entrepreneurs in Sub-Saharan Africa are more likely to rely on internal or informal financing when compared to male entrepreneurs. Aterido et al. (2013) analysed a sample covering in total 11,382 formal firms during 2005 to 2009 from 37 African countries and 2,406 informal enterprises from 25 African countries. Their research assessed gender differences in the use of financial services by enterprises and households across Sub-Saharan Africa. While they confirmed the existence of an unconditional gender gap, when controlled for firms and household characteristics, they found no additional evidence of a conditional gender gap either for enterprises or individuals.

Further, they found that enterprises with female ownership participation in Sub-Saharan Africa use as much external financing as enterprises without female ownership participation and female individuals are as likely to use formal financial services as male individuals. The key determinant for access to financing was the size of the firm, with women more likely to own smaller firms. They also found some limited support for the hypothesis of a “sectoral selection” as female ownership tended to be more prevalent in sectors that generally rely less on external financing. They posit that the gender financing gap is potentially more pressing in Sub-Saharan Africa than in other developing regions of the world given that over 80% of all households do not have access to formal financial services, though my research suggests that in Ghana this is not necessarily the case.

In a study of 53 female and 56 male entrepreneurs in South Africa with businesses of the same size, Shava (2018, 1) found that female-owned firms are more likely to terminate

operating activities within five years of operation due to limited access to financial resources including venture capital. Shava (2018) also found that gender has an influence and male entrepreneurs have better access to venture capital when compared to female entrepreneurs. The study suggested that female entrepreneurs were less likely to seek external equity in the form of venture capital and raised smaller amounts (Ibid, 6). It is also important to note that some scholars have not identified a gender gap in other geographies. For example, Bruhn (2009) did not find any evidence for a gender gap in finance in Latin America.

There are a number of important nuances to note about the literature. While gender is a key factor in seeking equity financing, the incidence of asking for financing among female founders is exponentially increased when start-up helpers are involved (Kwapisz & Hechavarría, 2018). The presence of start-up coaches significantly increases the likelihood of seeking equity funding (Aernoudt & San Jose, 2020, 131). These start-up coaches are often available to start-ups through incubators, accelerators, and tech hubs. As we saw in chapter 5, the gender gap in these technology growth-enabling systems play a key role in the disparities we see in funding outcomes.

There is also a difference when the venture capitalists are women. According to the International Financial Corporation (2019), women are underrepresented among the investment decision makers at private equity and venture capital firms as well as the senior management teams of their portfolio companies (13).<sup>55</sup> Coleman and Robb (2009) found that women are significantly more likely to apply for funding when there are women investors. Sahil Raina (2016) found that that the performance of female-led ventures is

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<sup>55</sup> In Europe and North America, this number is 10%, but in Sub-Saharan Africa this number is 12% (IFC, 2019, 16)



markedly worse than male-led ventures unless they are financed by venture capitalists with female general partners. She posits that either those VCs with women general partners are better at selecting women-led projects or better at advising them or both.

### 6.3 Why is there a gender gap?

A key question in the literature is why venture capitalists overwhelmingly provide capital to start-ups led by men. Most researchers agree that there is a clear and undisputed gender gap in venture capital based on the investment data. But scholars disagree on the reasons behind the disparities. There is a tendency to over-extrapolate from some studies, assume that studies in different countries are comparing like-with-like and some methodological sloppiness with terms like 'women-led businesses' (as previously discussed). Unless we are super precise about what each study demonstrates, we will keep coming up with different explanations of what we believe is the same phenomena, when in fact we may be looking at different phenomena. Across the research, the broad range of reasons given generally fall into two categories: supply side factors (investor driven) and demand side factors (entrepreneur driven).

#### 6.3.1 Supply side factors

Some scholars posit that the gender gap in venture capital is due to bias on the side of investors who favour male entrepreneurs (Kanze et al., 2018; Balachandra et al., 2013). Successful entrepreneurs are often perceived to be male (Brush et al., 2018, 131). Tinkler et al. (2015) found that the effects of gender on the evaluation of entrepreneurs for potential investment by venture capitalists depended on the presence or absence of technical backgrounds. Women without technical backgrounds were considered less competent and as a result received significantly less capital investment when compared

to women with technical backgrounds, men with technical backgrounds and men without technical backgrounds (5).

Investor-driven explanations focus on biases that investors have when making investment decisions based on observable characteristics such as speech patterns, nonverbal gestures, social competence, physical attractiveness, gender, and race (Kanze et al., 2018, 587; Rubin, 2010). Another investor-driven explanation lies with the screening methodology of venture capital firms. Evaluations of venture capital potential investments include “screening in” and “screening out” criteria (Kanze et al., 2018, 589). The former focuses on criteria that ranks ventures based on the likelihood of success whereas the latter disqualifies start-ups based on probability of failure (Ibid). Likelihood of success criteria include size and growth potential, business opportunity, returns expectations and growth strategy (Ibid). In the absence of clear financial and operational performance metrics (which is typically the case with early-stage ventures), investors focus on signals such as trusted referrals and network ties, founder backgrounds, and degree of passion and preparedness (Ibid, 590). These signals are inevitably loaded with biases related to homophily, cognition, geography, and gender (Ibid). So, in some ways screening in or out is elimination by bias.

For example, Kanze et al. (2018) investigated the impact of investor bias on entrepreneur positioning. They examined whether investors communicate differently depending on the gender of the entrepreneur and the impact this had on the entrepreneur’s responses to the investor’s diligence questions. They found that VCs exhibit an implicit bias which is manifested in the ways in which they ask male entrepreneurs promotion-focused questions and female entrepreneurs prevention-

focused questions, which then induce corresponding responses which position male entrepreneurs as aggressive and high growth oriented and female entrepreneurs as not, creating a vicious cycle. This helps explain the disparities in funding outcomes.

Balachandra et al. (2017) examined how observed gender-stereotyped behaviours of masculinity and femininity displayed by entrepreneurs during their investment pitches to venture capitalists influence the investment decision-making. They find that investors are not biased against women per se but are biased against both men and women entrepreneurs who display feminine-stereotyped behaviours. Their study suggests that masculinity does not provide an advantage in venture capital decision making, but femininity creates a significant disadvantage (Ibid, 130). In opposition to gender role congruity theory, they found that women were not penalised for acting contrary to their gender stereotypes. I find their reasoning on the bias to be quite peculiar. It is like a company that tell its employees “We are not discriminating against women. We just don’t like employing people who go on maternity leave because it inconveniences our business activities.” The effect is coding of a ‘normal’ employee as someone who does not go on maternity leave. Since it is overwhelmingly female-born people who are likely to go on maternity leave, the discrimination is implicit, even where legal rights to maternity leave are observed.

In the investment seeking case here, the important point is that being a male does not always confer an advantage; one needs to be perceived as a “proper” type of man by the investor, with the behaviours they expect. But if “successful entrepreneur” behaviours are also generally perceived as masculine behaviours, then it is almost impossible to get away from the problem that women are going to have to work harder than men or act like

men to demonstrate those behaviours convincingly to a VC audience. It is not only that women may need to overcome their own socialisation into “feminine” behaviours. Because even if they do so, and feel like hungry, ambitious, go-getting businesswomen, they cannot control the fact that the audience to whom they perform may not find the women’s self-perceptions as convincing as they would find those of a male candidate.

The structure of the venture capital industry itself, in which social networks (“old boys’ networks” or “tech bro networks”) are critical for deal flow, has also been cited as a contributor to the gender gap problem. Venture capitalists depend on deal flow which they develop through their networks of contacts. The overlap of the entrepreneur’s network and the venture capitalist’s network could be an important factor in determining the likelihood of a positive investment decision (Carter et al., 2003, 6). Gender homophily theory suggests that people tend to socialise and build networks with others who are demographically like them (Brush et al., 2018, 131). Thus, gender homophily may result in male venture capitalists being more likely to invest in male-led start-ups. Male investors rely on mostly male networks for information and due diligence on investments, thereby reinforcing the gender gap (Mohammadi & Shafi, 2018, 279). Further, Tinkler et al. (2015) found that having a social tie between the entrepreneur and the venture capitalist is more important for evaluations of women than for men. Women entrepreneurs, more so than their male counterparts, need connections to venture capitalists and technical backgrounds to achieve legitimacy and convince venture capitalists that they are worthy of investment (Ibid).

For deal flow, referrals play a key role; pitch decks received through referrals while they comprise 39% of the total decks received by investors, represent 82% of positive

funding decisions (Aernoudt & San Jose, 2020, 130). Thus, the under-representation of women in technology and in the venture capital industry may impact referrals which in turn result in the gender gap in venture capital investments. To save time and resources, equity investors often rely on the decisions of other equity investors, a phenomenon known as “herding” (Mohammadi & Shafi, 2018, 279). My research uncovered a lot of this practice in the African venture capital ecosystem, especially with respect to partnerships between local VCs and international VCs.

### 6.3.2 Demand side factors

The entrepreneur-driven explanation posits that female entrepreneurs are more likely to found enterprises that require lower amounts of capital, have a lower tolerance for high-risk ventures and therefore have a lower appetite for venture capital funding which typically funds high growth ventures (Kanze et al., 2018; Croson & Gneezy, 2009; Eckel & Grossman, 2002). These explanations rest on the premise that some female entrepreneurs make a conscious choice to focus on “lifestyle” businesses using personal funds in low-growth sectors driven by a need to balance work and family life to fulfil familial role expectations (Kanze et al., 2018, 590).

The success of an entrepreneur in raising equity capital may depend on her amount of social capital, an importance source of which is the entrepreneur’s social network (Carter et al., 2003, 6). Social network theory posits that homophily plays a key role in the formation of social networks. So, women may be underrepresented in the venture capital social networks since majority of venture capitalists are men (Shava, 2018; Greene et al., 2001). Greene et al. (2001, 69-70) argue that venture capital, being a predominantly male industry, is an environment constructed by men that reflects male

beliefs and practices and women may not be socialised to negotiate, compete, and structure deals in accordance with the “male” institutional norms of the venture capital industry.

Social networking has been identified as a critical factor in entrepreneurship – providing “useful information on sources of finance, new skills, knowledge, advice, social legitimacy, reputation and credibility” (Ssendi, 2013; Hmieleski & Corbett, 2006; Singh, 2000; Davidsson & Honig, 2003; DeClercq & Arenius, 2006). Further, “people who are involved in networks containing entrepreneurs will tend to be more entrepreneurial” (Ssendi, 2013; Klyver et al., 2008). Ssendi (2013, 48) notes that “western-based models assume that the entrepreneurial career is chosen, but this is not true for Africa, as most entrepreneurs are forced into it by the need to earn a living.” However, tech entrepreneurship, by nature of how it works out, cannot be necessity based. As we saw in chapter 3, for most of my interlocutors, the choice to pursue entrepreneurship is a choice not borne out of necessity but out of desire and ambition.

Research on gender differences in networking practices in tech entrepreneurship have found mixed results (Wheadon & Duval-Couetil, 2019). Women tech entrepreneurs have been described as forming professional relationships differently than men (Ibid, Dabic et al., 2012; Gatewood et al., 2009; Marlow & Carter, 2004) with a higher likelihood of forming bonds with other women which hurts their progress in a male-dominated field of tech (Wheadon & Duval-Couetil, 2019; BarNir, 2012; Lounsbury & Glynn, 2001; Navis & Glynn, 2011). Other studies have found that gender composition of networks have little bearing on the effectiveness of the network (Wheadon & Duval-Couetil, 2019, Tan, 2008; Baker et al., 1997). While Martin et al. (2015) attributes the success of female tech

entrepreneurs to “[accepting] the established male models of doing business [in order to] gain acceptance and credibility,” women and men are seen to behave similarly in how they create and leverage their networks (Wheadon & Duval-Couetil, 2019; Foss, 2010). Other studies have also seen similar network composition and quality (Wheadon & Duval-Couetil, 2019; Hampton et al., 2009; Rutashobya et al., 2009).

Not all researchers agree with the role of social capital. For example, Carter et al. (2003) found that only one type of human capital – graduate education – had an impact on women’s ability to raise equity capital. They did not find any significant effect of prior business or start-up experience or senior management experience on the odds of female entrepreneurs raising equity capital financing (Ibid, 22). They also found that social capital had no direct effect on increasing the odds of raising equity or debt financing for women entrepreneurs (Ibid).

Social learning theory also offers a complementary perspective. Social learning can occur through observing the behaviour of role models and emulating them. The prevalence and visibility of successful role models can offer social learning opportunities for entrepreneurs. Women’s success stories in VC are less prevalent and less visible, thus women from a social learning perspective, women find it more difficult to engage in equity financing due to the lack of role models (Greene et al., 2001, 72).

Perceptions also play a major role in influencing capital seeking behaviour. Women may be discouraged from seeking equity financing because they perceive higher barriers to entrepreneurship compared to male entrepreneurs (Sena et al., 2012). Drawing on survey data and using regression analysis, Naegels et al. (2018) explore how the problems women entrepreneurs in Tanzania experience in accessing finance are related

to perceptions of gendered cognitive and normative institutions. They find that it is the entrepreneurs' perceptions of institutions, more so than the institutions themselves, that drive their financing seeking behaviour.

Women entrepreneurs make deliberate decisions to grow at a slower rate, often because non-financial considerations outweigh economic considerations; this may make their businesses not an ideal target for venture capitalists who are generally looking for fast growing enterprises (Shava, 2018, 4). Manning and Swaffield (2008) found that female entrepreneurs exhibit a high aversion to risk and low esteem, which combined hamper their efforts to seek venture capital (See also Kong et al., 2016). Shava (2018) suggests that female entrepreneurs are more risk-averse and have a higher desire to retain full ownership of their businesses which could account for the gender gap observed in venture capital in South Africa (6). This raises questions about whether the risk-averseness observed in female entrepreneurs is related to the awareness of the frequency of business failure.

Some studies have shown different motivations and drivers of entrepreneurial journeys for male and female entrepreneurs, with men being focused on financial gains and women more focused on status, personal fulfilment, independence, and flexibility of work, and thus are less likely to focus on external equity and/or debt funding (Manolova et al., 2008; Manolova et al., 2012; Loscocco & Bird, 2012; Robb & Coleman, 2010; Coleman & Robb, 2009). Coleman and Robb (2009) found that women are more likely to avoid capital that would limit their control over their enterprises or force them to take on more risk (399).



Not all scholars agree that growing at a slow rate is a deliberate choice. For example, in a study of women entrepreneurs in South Africa, Derera, et al. (2014) found that women entrepreneurs often use their personal capital as a source of start-up capital for their business ventures. The personal capital comes from savings accrued from prior employment, family savings and gifts from family and friends. This funding is not sufficient and ends up forcing women entrepreneurs to “start small” and grow steadily (111).

In the United States, there is some evidence that female entrepreneurs are less likely to approach a venture capital fund compared to male entrepreneurs (Aernoudt & San Jose 2020, 130). In fact, the proportion of applications from female-led ventures to venture capital firms (5%) is approximately the same as the proportion of female-led ventures that are approved for funding (4%) (Aernoudt & San Jose, 2020, 131).

It is also important to highlight that the experiences of female entrepreneurs are not the same in all geographies. For example, Alakaleek and Cooper (2018) study how female technology entrepreneurs in Jordan raise financing for their start-up ventures. Whereas research from global North economies suggest a tendency for female entrepreneurs to depend on informal capital using their personal networks, their study shows Jordanian women entrepreneurs using formal sources of capital and formal networks. The Jordanian women entrepreneurs develop networks and business ties from formal events and networking platforms to establish financial network ties at very early stages of their business ventures, which they then utilise heavily over time to help secure funding. Thus, the Jordanian female entrepreneurs end up raising more funding from formal sources than their global North-based counterparts.

All these aforementioned studies highlight deeply ingrained gendered practices which emanate from gendered stereotypes that influence the entrepreneur's perceptions and expectations, and in turn impact the gender gap in financing. For us to better understand how female technology entrepreneurs raise equity capital in Ghana, we need to first understand the venture capital landscape in Ghana and across the African continent, because my research shows that for technology investments, virtually all the institutional investors invest on a Pan-African basis to diversify their investment risks (see Chapter 1). Several studies have examined female entrepreneurs and their use of different sources of financing. Prior research suggests that there are both supply side and demand side issues related to gender and venture capital financing. Supply side factors include the preferences of investors for industry sectors, firms, or entrepreneurs. Demand side factors include the preferences of the entrepreneur. I use case studies of both women entrepreneurs and venture capital firms investing in Ghana to understand both the demand and supply side considerations. I first start by looking at a case study of Golden Palm Investments Corporation.

#### 6.4 Case Study: Golden Palm Investments Corporation

Headquartered in East Legon, Accra, Ghana, Golden Palm Investments Corporation (GPI) is an investment holding company focused on venture capital investments in technology start-ups across Africa. While its physical office lies in Ghana, it is domiciled in the Cayman Islands with operating entities in Delaware and Ghana. GPI started investing in Africa in 2006 and started its technology venture capital investment arm in 2012. It has invested in 26 portfolio companies since 2012, with a portfolio valuation of \$60 million as of 2021, and its portfolio companies have raised over \$1.2 billion in venture

financing. Its venture capital activities are led by firm Partner, AJ Okereke, a triple Ivy-League educated (Cornell, Harvard, Wharton) Nigerian-American investor. AJ is supported by a deal team of four analysts including two women. Its Investment Committee, which makes final investment decisions include:

- Alexander Marlantes, a white American entrepreneur, and investor who is currently the CEO of Everlance, a start-up in San Francisco and has prior work experience with Valiant Capital Partners (\$4 billion assets under management (“aum”)) and Goldman Sachs (\$735 billion aum). Alexander has an undergraduate degree from University College of Los Angeles (UCLA) and a Master of Business Administration (MBA) from Stanford University.
- Lake Wang, a Chinese-American investment professional who is currently a Senior Investor at Tensile Capital Management (\$1.4 billion aum) with prior work experience at Valiant Capital Partners, Citadel (\$32 billion aum), King Street Capital (\$18 billion aum) and Morgan Stanley (\$552 billion aum). Lake has an undergraduate degree from Harvard University.
- Brandon Arrindell, an African-American investor who is currently a Principal at Southeastern Asset Management (\$14 billion aum) with prior work experience at Morgan Stanley. Brandon has an undergraduate degree from Harvard University.
- Dufie Addo, a Ghanaian executive who is currently the Chief Operating Officer of the Ghana Investment Promotion Centre, the government agency in charge of foreign direct investment. Dufie was previously the Chief Financial Officer (CFO) of mPharma for 5 years and has prior work experience at Washington State Investment Board, AngloGold Ashanti, the IFC and Lehman Brothers. She has an

undergraduate degree from Mount Holyoke College and a Master of Science (MSc) from Stanford University.

AJ said his investment process is in three stages. Stage one is a screening of potential investment opportunities: “I source deals through three main media 1) inbounds (start-ups that send us cold e-mails or ask for an introduction through someone who knows us), 2) recommendations from founders of our existing portfolio companies to other founders in their network, and 3) outbounds through relationships with other venture capital firms, and actively looking for start-ups through the news, media, conferences, and the like.” AJ shared that GPI typically gets about 1,000 ideas a year, of which they screen and typically focus on the best 100 ideas. AJ’s team of analysts which include two men and one woman then go through the company’s pitch deck and decide on whether the opportunity is interesting enough to warrant further diligence.

AJ shared that “of the inbounds I get, less than 5% are from female founders.” He believes that sourcing channels reproduce gendered inequalities. “Generally male founders recommend other male founders...Many of the accelerators and other programmes that we use to source deals reproduce these same gendered inequalities...Part of the problem is the gendered disparity in the access to technical training: there aren’t as many women in software development.”

Stage two involves deep dive diligence. For stage two, AJ and his investment team prepare a diligence report on each company. As Kanze et al. (2018) have noted the screening methodology of VCs is particularly prone to bias so I spent a lot of time studying their process, reviewing investment memos, shadowing diligence calls, and following the investment process from deal flow to post-investment for a year. For all companies at

stage two, AJ and his team present a company overview and need to understand the problem being solved and the solution being offered by the company. “We like to invest in companies that are solving problems and that can build business models with competitive moats around their unique solutions.” They then conduct several diligence calls with the entrepreneur and his or her team, run reference checks, speak to customers and suppliers and to industry experts. Kanze et al. (2018) found that VC investors communicated differently when speaking with female entrepreneurs versus male entrepreneurs. However, my research did not uncover any difference in communication during the diligence stage with GPI. This is largely because the firm follows a diligence template with a list of questions and metrics which creates a standardisation of the diligence process across all entrepreneurs, regardless of gender.

After diligence is completed, the investment team then scores each opportunity across ten metrics:

1. Total Addressable Market (TAM). They try to assess the size of the market opportunity to determine how attractive the market is. Generally, the larger the TAM, the more attractive the opportunity.
2. Capital efficiency. They analyse how much capital has been invested in the business and how much revenue has been generated from the invested capital. They prefer businesses with higher revenue to capital ratios.
3. Investor base. They score the investor base based on which other investors have already committed capital. An investment from a well-respected VC firm or angel investor increases the score and the likelihood of investment from GPI. In one of GPI’s investment memos for an investment that received a positive decision, the

investment recommendation from the investment team noted “We were first introduced to the [company] by our friends at 4DX Ventures who were among the first investors in [the company].” As previously noted, this phenomenon of herding is very common among equity investors (Mohammadi & Shafi, 2017, 279).

4. Competitive position. They analyse the market for competition and score the business based on its competitive positioning and the strength of its moat. “We like businesses that either have a high barrier to entry or some competitive moat, whether it is intellectual property, innovative technology, long-term contracts, something that makes it harder for the guy next door with capital to compete.”
5. Financial performance and growth. They look at current traction of the business and its historical as well as projected growth. “We like businesses that are on track to achieve \$1 million in annualised revenues and that are fast growing.” One of the investment memos I reviewed stated “[The company’s] revenues are growing at 70% MoM”. This is in line with previous research on VC’s preference for very fast-growing ventures (Shava, 2018).
6. Unit economics. “We like to invest in start-ups where we have a clear understanding of their unit economics. It simplifies the whole business and allows us to understand profitability on a unit basis. I want to understand for each customer the business attracts, what is the customer acquisition cost? What is the customer lifetime value? What’s the payback on that customer acquisition cost?”
7. Exit opportunities. “One of the big challenges with venture capital and private equity in Africa is around exits. All the returns on paper are great but do not mean anything until you can get your returns in cash. As the adage goes you can’t eat

IRR.”<sup>56</sup> AJ explained that this impacts the types of businesses they invest in. They typically look for businesses that can scale Pan-African to make it easier to be an acquisition target by a strategic or even an Initial Public Offering (IPO). “To be honest IPOs are a dime a dozen. We had Jumia, which was a mixed bag, and we may have Interswitch which will be great for the ecosystem.” AJ shared that GPI has already achieved several partial exits and one full exit through secondary sales. “The secondary market for high quality African tech companies is hot. That is why we focus so much on quality. I can walk out today and sell my mPharma or Flutterwave or Andela stock, they are quite liquid in the secondary market. But 95% of the opportunities we see are garbage and you would be stuck with illiquid assets, even with valuation increases, you don’t have any real exit.” This means that GPI is investing in businesses that have a higher likelihood of attracting global capital, which in turn creates secondary opportunities to sell. This means that AJ and his team are not just looking at start-ups from their own lens, but also necessarily through the lens of Silicon Valley VC investors, who typically are the target investors for follow-on rounds.

8. Management team. AJ shared that this is one of the most important metrics they score. “For early-stage companies, you don’t really have a lot of traction or years of data, so it ultimately is a bet on the founders and the management team.” As Kanze et al. (2018) have noted in the absence of concrete financial data, VCs often focus on trusted referrals, network ties, founder backgrounds and the passion of the team.

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<sup>56</sup> IRR means Internal Rate of Return. It is a metric used to determine return on investment capital. Generally, the higher the IRR, the more attractive the investment opportunity.

9. Valuation and potential returns. As Greene et al. (2001, 72) found, investors are looking for high returns. Their study of global North-based VCs noted that they had an annual return expectation of between 15 to 30 percent. For AJ, “Because we are involved so early, I typically like to aim for 10-20 times return over a 5 to 7-year period” representing annual return expectations of 30 to 60 percent.
10. GPI Strategic rationale. The final metric that AJ and his team score is on the strategic rationale for getting involved. “We don’t just want to invest in any business. We need to add value so it must be a business, a sector, something where we truly believe we can add value to the founder and the business. This is really important because founders also do reference checks on the VCs, they will call our portfolio company CEOs and ask them ‘has GPI been helpful to you?’ We want all our companies to say emphatically ‘hell yeah’ so if we don’t think we can add value, we are hesitant to invest.”

If the business gets a passing score across all ten metrics, it then proceeds to the final stage which is Investor Committee (IC) deliberations and vote.

We will put together an investment memo and send it to IC. IC is really tough. They will ask a lot of tough questions, so we [GPI] typically make sure we have done our homework really well before presenting any deal to IC....our IC also has a unanimity rule, which means that 100% of all IC members have to vote on a deal before it goes through....typically IC only approves about 2-3 deals a year...that’s why we have such a concentrated portfolio...our approach is concentrate on the winners and scale with them more so than spray and pray...and the proof is in the pudding...we have seen a 100x valuation increase in Flutterwave, 150x in mPharma, 70x in Andela... not to brag, but we probably have one of the best African tech portfolios in the world.

Out of the approximately 100 companies they look at, only about 10% make it to IC.



## *Herding and Networks*

One theme that emerged strongly in my study of GPI's investment process was the prevalence of networks and herding (Mohammadi & Shafi, 2017; Brush et al., 2018; Aernoudt & San Jose, 2020). Even though referrals made up less than 2% of deal flow, they represented 67% of GPI's portfolio. In line with previous research Brush et al. (2018), I found that GPI's network for referrals was heavily male. As AJ shared, "most of our referrals come from our male founders and other male VCs and they tend to recommend male-led companies." However, I did not find evidence for Tinkler et al. (2015)'s claim that social ties matter more for women than men. My analysis of GPI's investment memos and diligence reports showed that it mattered equally; although a smaller number of women were referred to GPI than men, within the whole group that had been referred, the chances of getting a positive investment decision were the same.

I observed that one of the most important factors to increase likelihood of a positive investment decision was the involvement of other VCs that GPI trusted. Similarly, once GPI invested in a start-up, their network of VCs will get involved. For example, I noted that Breyer Capital, one of the most successful VC firms in Silicon Valley, has a partnership with GPI in which they share deal flow and diligence materials. In the period I studied their investment process, Breyer followed GPI's lead into investing in mPharma, Jetstream, Sokowatch and Chaka. GPI also has a close relationship with 4DX Ventures. As I mentioned earlier, AJ had noted in one investment memo "our friends at 4DX." GPI and 4DX have overlapping portfolios sharing many companies including AHH, Andela, Flutterwave, FCG, Jetstream, mPharma, Sokowatch, Supermart, Tizeti, Autochek, and Chaka. AJ joked "4DX and GPI are like brother and sister...we are very close, and we

collaborate on deal sourcing and deal diligence...we are even located next to each other in the same office building.”

I noticed how powerful this was during several diligence sessions that I observed. There was one company that AJ was initially excited about. After a conversation with a partner at 4DX who was bearish on the opportunity, AJ dropped it. Similarly, 4DX was looking at a health tech opportunity that they were initially excited about. AJ and his team had already conducted diligence and felt it was a strong pass (rejection). After sharing those sentiments with 4DX, they passed on the company as well. Thus, an early denial from one VC could have a ripple effect and this could be linked to the gender investment gap we see in VC.

The other factor that stood out in my analysis for significantly increasing the likelihood of investment was the Harvard, Stanford, and MIT (HSM) factor. In one of the investment memos, under the investment recommendation section, it clearly stated “We like to back smart, technical Ivy-league educated founders.” When I pressed AJ on this, he responded:

The truth is that it’s a lot easier for an African founder from MIT or Harvard or Stanford to raise follow-on capital from global VC than it is from someone from the University of Ibadan or the University of Ghana. It sounds elitist, but it is really more about social ties and reference checks. When we invested in Chaka, I was able to diligence the founder by calling up people I trust from Wharton who knew him, and they vouched for him. I don’t know anyone in many of the local African universities, except maybe Ashesi...we also have a disproportionate amount of Harvard and Stanford folks in VC, so it does give a quite-frankly unfair advantage to alumni founders.

As described earlier, all members of GPI's IC have degrees from Harvard and Stanford. While founders with degrees from HSM are less than 2% of deal flow, they represent over 90% of referrals and 61% of the portfolio.

### *Gender gap in GPI's portfolio?*

In GPI's portfolio, I did not find any evidence of a gender gap at the investment decision-making level. While companies with women co-founders are 5% of deal flow, they disproportionately represent 28% of the portfolio. In addition, 39% of the portfolio have women at senior management/C-suite. This suggests the key problem lies with the pipeline: women are not applying for funding from GPI, and GPI's referral networks overwhelmingly send male-led companies to investment committee. GPI needs to be proactive in diversifying its pipeline. At the investment decision level, GPI's numbers are above global averages, suggesting that there are some lessons that Silicon Valley can probably learn from AJ and his team to improve the significant gender disparity evident in those markets.<sup>57</sup> However, it is important to also note that while GPI's approach slightly decreases the gender gap, other axes of bias (university attended, graduate status, class position, social networks) remain in place. One question remains: does the gender of the investor matter?

## 6.5 Is there a difference when the VC is a woman? Short case study of Ingressive Capital.

Some scholars have suggested that there is a difference when the VC is a woman and that leads to greater investments in women entrepreneurs (Raina, 2016; Coleman, &

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<sup>57</sup> See footnote 48 for global averages

Robb 2009). There are very few women-led VC firms operating in Africa. I met two of them: Ingressive Capital and Alithea Capital.

Ingressive Capital was founded in 2017 by Maya Famodu, a 29-year-old Nigerian American woman with a BA degree in environmental sciences from Pomona College. Originally raised as a \$5 million fund, it is now a \$10 million fund that focuses on pre-seed and seed stage tech-enabled businesses in Nigeria, Kenya, Ghana, and Egypt. It had invested in 24 start-up companies as of September 2020. Like GPI, Ingressive also gets a lot of inbound, which she estimates at between 1,500 to 2,000 every year. Her investment team of six has three men and three women (including Maya who is the Managing Partner/CEO). Maya estimates that about 20% of her deal flow are companies with female co-founders, significantly higher than that of GPI. Maya shared that “I didn’t go out trying to invest in women. But I hang out in women spaces. Sixty six per cent of my venture partners are women, so I get a lot of deal flow from women...it makes a big difference having women on your team...I see more women deal flow because I’m a woman that hangs out with women.” With 20% of deal flow, companies with women co-founders represent 33% of Ingressive’s portfolio, with 12.5% of the companies being led by women CEOs.

Maya was adamant that technology has changed the old network. “You don’t need a passport anymore; you have Twitter and the internet.... I respond 100% to all my Instagram, Twitter and LinkedIn messages...I built my network through cold e-mails and door-to-door visits at VC funds...anyone can build a legitimate network with technology.” Maya used her own experience to indicate that technology had opened new and democratic venues for individuals to make new contacts and expand their networks,

however, my research showed that the investment decision-making process at most VC firms still very much relied on referral networks and signals.

She blamed socio-cultural challenges on the disparities in women not pursuing VC. “The real issues we have are with cultural norms and misogyny, familial duties and male ego which hurts women from achieving...I’ve met women who tell me ‘I can’t make more than my husband’...all this hurts women from achieving.”

Validating Maya’s perspectives on socio-cultural factors, Walter Baddoo, the managing partner of 4DX Ventures told me in our interview that “Local cultural attitudes also play a negative role. Part of the investment process requires relationship building between investors and founders...this usually happens over drinks. For example, in New York, I can easily have drinks with female founders and build relationships with them...but in Accra, it’s not as easy or straightforward...there are social mores that women have to navigate around.”

Walter shared that less than 2% of deals that his firm receives are from women founders. “We source deals through leveraging the internet for companies mentioned at conferences, blog posts, news, publications, etc; through our networks; through partnerships with other entities e.g., incubators, accelerators and other VC firms; and through inbounds via cold-emails or through our website.” Eighteen percent of 4DX’s portfolio comprises companies founded by women. Walter argues that “it’s true that Africa has the highest rate of female entrepreneurship in the world, but most of it is informal...both my grandmothers were excellent traders...but the formalisation of the economy and the inability of formalised capital to invest in the informal economy marginalises women entrepreneurs.” While Walter has a valid point about the

overrepresentation of women in the informal economy and the challenges of formal capital to invest in the informal economy, this does not explain why women in the formal economy are staying away from external financing and venture capital, in particular. As previously mentioned, 19 out of the 21 female tech entrepreneurs in my research opted to *not* raise any external capital.

I will next look at some selected case studies from the demand side, though my research suggests that the literature dividing supply side and demand side factors is not sophisticated enough to fully encompass what is going on in Ghana. As I noted in the introduction, the supply side and demand side are co-constructed – how entrepreneurs perceive VCs influence their practices and engagement, and in turn the practices of the VCs influence the perceptions that entrepreneurs have of them. It is also convenient for VCs to emphasise the demand side factors because this means that they do not need to ask awkward questions about how their own practices feed negative perceptions or create subtle barriers.

## 6.6 Demand Side Case Studies

As observed in the data from GPI and from my own research, African women in technology are not applying for venture capital funding. Of the 21 female technology entrepreneurs I interviewed, only 2 opted to raise capital. To better understand entrepreneur-driven explanations in the Ghanaian tech ecosystem, I look at case studies of the two entrepreneurs that opted for venture capital: Priscilla Hazel and Miishe Addy.

For the women who opted to not raise venture capital, there were several reasons, some of which have been covered in prior research in other countries. Some of the women made a conscious choice to build lifestyle businesses (Kanze et al., 2018) and

others started small because of capital constraints (Derera et al., 2014). Perception (or misperception) about venture capital played a huge role for many of the female tech entrepreneurs (Sena et al., 2012; Naegels et al., 2018). One of them shared “I didn’t even think of venture capital because I only knew of male entrepreneurs getting funding...there was the feeling that they won’t support women entrepreneurs ... I think the media buzz about women not getting funding also influenced my decision... I didn’t want to waste my time, so I rather focused on grant funding.” Regina Honu believed that investors in Ghana would only fund start-ups for women in sectors that matched their gendered expectations of what type of entrepreneur a woman can be, providing support to my argument about the co-construction of demand side and supply side factors.

Many of these female technology entrepreneurs employed creative strategies to finance their business including bootstrapping. Freear et al. (1995) describe bootstrapping as “entrepreneurship in its purest form” where start-ups are financed through a “highly creative process” using personal savings, consumer debt, support from friends and family, and some private funding. Many of the female tech entrepreneurs also practiced lean start-up, an approach which focuses on experimentation, customer feedback and iterative design (Ensign & Woods, 2016, 115). They developed highly creative methods to bootstrap and scale. For example, Betty Kumahor acquired a distressed business and used “sweat equity” (her technical skills) to service the clients and used the cash generated from client payments to fund the business (see chapter 3). Regina, on the other hand, completely changed her business model. Instead of hiring many developers for her software company, who are typically very expensive and hard to find in the labour market in Ghana, she started a programming school, mostly focused

on training female software developers. As part of their training, the students work on real client projects, giving Regina free developer labour, and the students real-world experience, a win-win for all parties involved.

Walter Baddoo at 4DX ventures believes there is a gendered approach to capital raising among African start-ups, which has significant implications for the ecosystem.

We find that male founders tend to be more aggressive in their pursuit of capital. They are more full of shit. Women founders tend to be more cautious. The men see capital as a path to prove and test out their ideas, whereas the women generally want to prove their idea first before raising capital. However, that delay sends a negative signal to the market and does not match market expectations for growth. If you take capital away and look at pure execution, we find that 9 out of 10 times, the women entrepreneurs execute better than the men. But, in the early years, capital is most important because it allows you to hire the right talent to scale the business.

His comments validate prior research which found that women are more conservative when they seek venture capital (Kanze et al., 2018; Croson & Gneezy, 2009; Carter et al., 2003; Sena et al., 2012). However, this raises new questions: why are the women more conservative? Is it because of socialisation? Is it that they do not understand the need to present their business as scalable? Is it that they understand the need to present their businesses in this way, but the VCs do not find it easy to set aside biases about what women are like and allow themselves to be convinced? Or do women understand the whole situation very well, but they have their own reasons for wanting to bootstrap so that they are in full control of the end results? And what are the experiences of female entrepreneurs who pursue VC funding? The next two case studies look at the divergent experiences of two entrepreneurs who pursued VC funding; their experiences together shed important light on the challenges women face in the VC market.



## 6.7 Where Ghanaian Privilege Fails: Priscilla Hazel's Struggles in Silicon Valley

Priscilla Hazel is the third of six children. She grew up in Cantonments, one of the most prestigious and most expensive neighbourhoods in Accra but recently moved to East Legon, another affluent neighbourhood. Her mother is a pharmacist, and her father is a reverend minister and the head pastor at Tesano Baptist Church. She attended Christ the King International School for primary school, Wesley Girls for secondary school and then the University of Ghana. She became interested in the tech industry when the iPad first came out and she had to teach her boss how to use it. "I loved using the iPad and I started to think about how apps are created? How does it operate or even work? That sparked my whole interest in this field."

She had heard about MEST and applied. "At the time I had also applied to schools in the UK to study International Business, but MEST was fully funded so I wouldn't pay anything to learn about tech...made up my mind and decided to go to MEST. I was there from 2014 to 2016 and that is where I met my co-founders and founded Tress."

Her start-up, Tress, is a mobile consumer app that she describes as "a fun, passionate community of black women from around the world sharing and discovering hairstyle inspiration." The black hair industry has been estimated at over \$2.5 billion (CNBC, 2018). This does not include hair accessories, wigs, e-commerce, styling tools and appliances. Taken altogether, the global black hair industry could be a potential \$500 billion industry (Huffpost, 2014). Tress app allows black women to discover new hairstyles for inspiration; get information about hairstyles including products used, pricing and salon information; share hairstyles and receive feedback and recommendations from the community; and follow 'fashion icons' and learn about their hair care secrets. Her two

women co-founders had very technical backgrounds; one had a degree in Computer Science and the other had a degree in Information Technology.

Priscilla and her two co-founders, Cassandra, and Esther, applied for MEST's incubator programmes and were successful, and so their start-up Tress was incubated in MEST and received \$50,000 in funding from MEST (MEST now funds \$100,000 per start-up in its incubator). However, Priscilla knew that they would need to raise capital. "We have this product; we are not even sure how it works, and we are still figuring out so many things. We know we won't make money from day one because it's a social product, but we figured if we could make it free and have so many people using it then we can probably monetise the user-base." But to get that level of scale, Priscilla knew that "there was no way we could survive because we are not going to make any money from Tress in the beginning so it's either we raise money, or we're done." She researched online for accelerator programmes. "I had heard they give you free money and advice." So, they applied to TechStars and Y-Combinator.

She was also hoping that MEST's VC fund will give them additional capital post-incubation. However, this did not happen. MEST declined to invest in them. Priscilla was very concerned about that because she believed it could send a negative signal to potential investors. "They would wonder why didn't MEST give you capital?" She was worried about herding hurting her chances. She then had to scramble to figure out alternatives. "I remembered there was a gentleman from Google who came to MEST to support the start-ups and he saw my first presentation and liked us, our charisma and energy and he told us that he wanted to invest but I had no idea what we wanted to do so I told him that I will get back to him when I need to raise money. I emailed him to ask

him ‘do you remember us in Ghana, those three girls who presented on hair?’” The Google employee ended up investing \$30,000 in July 2016.

Then, Priscilla got news that they had been successfully accepted into Y-Combinator the highly prestigious international incubator that gives start-ups \$120,000 (now \$150,000) for a 7% equity stake. She and her partner Esther moved to Silicon Valley in January 2017. Unfortunately, the third co-founder was denied a visa and could not join them.

Priscilla was excited about Y-Combinator and believed it would help them raise capital. “The reason why [any entrepreneur] goes to Y-Combinator is to be able to raise money...we pitched at demo-day, we did well, and a lot of people liked our pitches, we got a lot of press...but all that was just vanity... it didn’t translate into meaningful investment leads...”

Priscilla was also able to raise an additional \$10,000 from an angel investor woman in the Valley who loved their product. They had raised a total of \$210,000 in capital by that time in 2017 but had deployed most of it in getting the product to where it was and developing the apps. Tress was unsuccessful in raising any further capital beyond the existing angel investors, Y-Combinator and MEST. She was not able to raise any institutional capital from any venture capital firms. Priscilla strongly felt that being an African woman played a role in her experience trying to raise capital in Silicon Valley.

One thing I feel strongly, this is just me and my experiences trying to raise money, back in Y-Combinator, there was this kind of invisible tier for investment. Those who easily raise [in order of ease] are white males, white females, black males, black females and at the bottom of the pyramid to me is black females from Africa. Because I wonder why some of the products and some of the people who were able to raise money with the kind of products they had, with the level of traction they had achieved, it baffled me how they were able to raise money in the period of time they

did and the amount they were able to raise and why they were able to raise in that same period.

Priscilla also experienced a mismatch where Silicon Valley male investors did not understand her product and why it mattered to women, or they had different ideas about 'Africa' which shaped their views on what is an appropriate investable opportunity for the African continent. Her main angel investor from the USA who invested \$10,000 in her company was a black woman who intuitively understood black hair and the potential of the market. "One or two times I went for a meeting, I think the people didn't research about us before they accepted, I think somebody just said 'I think you should speak to these guys they are doing something on hair' so when you walk in, they actually realise it's some black ladies from Africa. And you can visibly see they are surprised we are the ones coming in for the meeting and the meeting is automatically cut short because they are like 'okay, I know I said we should have a meeting but I'm a little busy now so maybe another time'. We got this reaction one or two times and I felt that was very strange. One other thing I noticed happened not because we are women but because of the type of product we had, people thought because we are coming from Africa, we should not be working on something perceived as a want. We should be doing social impact stuff, there [are] so many things that Africa needs, we are still trying to figure out our health and our payment, so work on things that will help Africans. Why are you working on something like [hair]?"

Yet, Shruti Chandrasekhar, a Senior Investment Officer at the Venture Capital arm of the International Finance Corporation (IFC) shared in an online article that "Women-led companies are better positioned to understand female customers. And female customers influence 85 percent of consumer decisions globally — ranging from 93

percent of food and beverage choices to 66 percent of ICT purchases. For Africa, this translates into \$785 billion of annual spending that is controlled by women and that could be better served by women-run enterprises. Investing in women is, quite simply, sound business” (AppsAfrica, 2018). Arguably, this is another example of co-construction (perception influences practice and vice versa). Shruti here is basically arguing that women understand other women. This is fine, to the extent that it is supportive of women creating businesses that make products for women. It is highlighting a perceived strength of women in business. But the underlying logic is that men and women are different, and thus men will understand men better. Then when the women go to male VCs, they cannot get those men to understand their business ideas, because those businesses are focused on women consumers. Everyone is appealing to and thereby reproducing the idea of “innate” gender differences. But since men and women do not have 50% each of the investment funds, insistence on difference is likely to give rise to inequalities in opportunities, even though there are niches in which women can make a success.

Priscilla also believed that it was easier for the men in Y-Combinator to raise than it was for the women.

I don't like to generalise but looking back, speaking to a lot of my mates and teams from Y-Combinator it was much easier for the guys to raise. And the guys were always super confident and that helped a lot, even when they did not have much, they were very good at vocalising, being confident which is something that I had to learn. I had to practice how to speak up for my presentations, how to be clear, how to be direct, how to speak for everybody to listen. I won't say I'm timid but I'm very reserved and calm, I don't want to shout or speak on top of my voice and that was one thing that [the head of Y-Combinator] used to speak to us about all the time “if you don't learn how to lift, project your voice and seem overly confident, you are going to lose out because everybody around you is like that so you are going to be swallowed. You have to practise how to speak that way.

Priscilla also shared that her networks – which were mostly in Ghana – did not create any opportunities for her in Silicon Valley. She contrasted her experience with other founders in Y-Combinator who had extensive networks and were able to draw on those networks for introductions to venture capital firms. In Silicon Valley, an analysis of a data set of 900 VCs found that 40% of all investors attended either Stanford or Harvard (Fast Company, 2018). The study also revealed that the venture capital industry is 70% white, 82% male and only employed eight black women and two Latinx (Ibid). For Priscilla, a black African woman who had grown up with considerable privilege in Ghana, her social capital, which was concentrated in Ghana, did not yield any transnational dividends for her, and could not be converted to economic capital in Silicon Valley. The layered intersectionalities of the entrepreneurs interact with international hierarchies in Silicon Valley (white > black; US/Europe > Africa; men > women, etc.)

The inability of women entrepreneurs to raise institutional capital contributes to a vicious cycle. Priscilla divulged that “I don’t think I want to be in a position where I have to be dependent on investment to keep the business going all the time. We have to find a way to monetise as fast as we can as a little way of providing value and at the same time getting value back from the product.” To protect against the gendered inequalities inherent in the fundraising process, she has pivoted towards bootstrapping the business. This means that Priscilla will make decisions that would not optimise long term value creation for her business but will instead focus on survival and near term profit-making. This in-turn makes her business less investable for venture capital firms. This is another example of the co-construction phenomena I have previously described.

Whereas Priscilla failed to raise any venture capital funding, Miishe Addy, on the other hand, had a very different experience, successfully raising over \$3 million. Her case study shows how she was able to do this.

## 6.8 Killer resume and transglobal networks

### 6.8.1 How Miishe Addy raised millions of dollars from VC

Miishe Addy is the Founder and CEO of Jetstream, a tech-enabled logistics company. As the company describes itself “it acts as a vertical broker between the fragmented and often-hidden segments of cross-border supply chains in Africa. From instant pricing to cargo tracking and customs regulation transparency, Jetstream makes the process visible” and digital. It has apps in both the Apple and Google stores which allow customers to get price quotes, book, monitor and manage multiple shipments. The company has been featured in global media outlets such as Forbes, CNBC, and BBC.

A returnee with dual-citizenship (American and Ghanaian), educational credentials from Phillips Exeter Academy, Harvard College and Stanford Law School, extensive work experience in global firms like Bain & Company and the law firm Wachtell, Lipton, Rosen & Katz and start-up experience in Silicon Valley, Miishe was able to successfully raise over a million dollars in seed capital from venture capitalists in both Ghana and Silicon Valley and is currently working on a \$10 million Series A round. She shared that “the biggest factors in my decision to raise institutional capital were probably exposure and design. Before founding [my current start-up], I founded a start-up in the States. The experience exposed me to the standards and expectations of institutional investors and shaped how I developed [my start-up] years later. Since then, I have worked closely with investors and tech start-ups, as a teacher and a founder. Now, I understand the logic of

this ecosystem, so I am probably better positioned to navigate it.” Miishe, in some ways mirrors the young Ghanaian businesswomen that Bowles (2013) studied who “successfully navigate international networks in ways that rely on hyper-mobilised movement garnered through dual citizenship, affluent economic status stabilised by educational experiences abroad, and social ties fostered within and across nation-states” (209). The results, like Miishe’s seed round, “are incredible economic successes that are often unparalleled among their peers in Ghana” (Ibid).

The returnee factor is an important one that requires some understanding. A significant number of Ghanaians emigrated for other parts of Africa, Europe and North America following independence (Avle, 2014; Adepoju, 2005; Awumbila et al., 2008). The 2010 national census showed that the majority of Ghanaian emigrants (about 1% of the population) head to the North, with about 38% of them going to Europe, 24% to the United States and Canada, 36% across Africa, and the rest scattered across Asia and Oceania (Avle, 2014). Since then, Ghanaians have been progressively returning to resettle in Ghana (Ibid). Many of the emigrants left due to economic and political turbulence, and those who returned did so largely due to the return to economic and political stability in Ghana (Avle, 2014; Ammassari, 2004). In addition, life development (such as family and lifestyle) also impacts decisions to resettle in Ghana and are consistent with research on other South–North migration returns (Avle, 2014; Chacko, 2007; Yang, 2006; Zhou, 2008). The migrants that return tend to be of a higher socio-economic background with high levels of education and experience and are better equipped to capitalise on market dislocations (Avle, 2014; Gibson & McKenzie, 2011; Ammassari, 2004).



Returnees bring with them accumulated financial capital, skills acquired and developed overseas and an ability to reintegrate into the country (given understanding of the culture and local networks) (Avle, 2014; Black et al., 2003). The return of these skilled migrants helps offset the brain drain that has plagued the African continent in the last fifty years (Avle, 2014; Wickramasekara, 2002). A previous study of Ghanaian returnees “showed that even those who left Ghana unemployed were able to find employment on their return and others used their newly acquired experience (and new skills where applicable) to start their own enterprises” (Avle, 2014; see also Anarfi et al., 2005; Black et al., 2003; Bowditch, 1999). Because returnees maintain ties with their various communities abroad, they join the “digital diaspora,” and bring together “countries on their residential itinerary” (Zhou, 2008, 245, ctd in Avle, 2014). This allows them to leverage resources from a broader and global range of stakeholders and collaborate on a global scale (Avle, 2014). These sorts of networks, especially migrants who are connected to Silicon Valley and other tech hubs, are key to the development of high-tech industries in emerging markets (Avle, 2014; Saxenian, 2006). However, some studies suggest that returnees are “not major change makers in industry; rather, they merely return to take advantage of foundational work already done by local entrepreneurs and multinational corporations (MNCs) that play a larger role in skills transfer” (Avle, 2014, 3; see also Kenney et al., 2013). In this view, “returnees may not be pioneers but they may still be considered catalysts for growth as they tend to bring in capital and up-to-date technical information” (Avle, 2014, 3).

Avle (Ibid) notes that “while a number of returnees go back to work for established firms, a large percentage have entrepreneurial ambitions. Returning, then, becomes

about taking on risks as well as opportunities in a space that could use their particular expertise or capital.” (See also Kisfalvi, 2002; Parker & NetLibrary, 2005; Schumpeter, 1949). Returnees often demonstrate entrepreneurial ambitions and sometimes take on roles that extend beyond their training or previous jobs (Avle, 2014; Saxenian, 2002, 2006b; Wadhwa et al., 2009; Wadhwa et al., 2008). This may help explain the disproportionate representation of returnees among my interlocutors, with 68% of them falling in this category.<sup>58</sup>

Whereas other tech entrepreneurs like Regina or Jemila built their businesses to operate ‘small, small’, Miishe thought differently about her start-up. “Not every business needs, or can make a defensible case for, institutional capital, especially VC investment. I see a lot of women here and in the States building service-oriented businesses - businesses that are profitable but not scalable. The VC model sacrifices near-term profits and personal income for possible long-term gains. That type of investor is looking for a very specific type of business and product design. When I started [my current company], I decided we would design our business to scale – trusting and believing that capital would come eventually. In that sense, the decision to raise capital was wrapped up in how we were designing and building the business in the first place.”

For Miishe, whose business was built for scale, a bank loan is not the appropriate type of capital. She needed equity investments. Miishe leveraged her social capital (which transcended borders) effectively to help her get connected to equity investors. She was successful in converting her globalised social capital into economic capital in the form of equity investments.

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<sup>58</sup> I also acknowledge the impact of positionality here, given that I myself am a returnee from North America

In raising capital, I started by going to events and keeping my eyes open for opportunities, but at the very beginning the biggest catalyst was the MEST Africa network. Our first two angel investors came to us by applying online to funds indirectly connected to people in the MEST network. After we had defined the problem we were solving, and started gaining traction with customers, personal introductions were more productive. A friend and former colleague [from a law firm where I worked] in New York introduced me to Golden Palm Investments...another friend in Accra connected me to Ingressive Capital ...the Golden Palm team introduced me to Breyer Capital, 4DX Ventures, MSA Capital and NWL...I was able to successfully raise capital from all of them...Since then, I've been introduced to, or met at conferences, a few dozen investors who actively invest in African tech start-ups.

One Silicon Valley based investor put it bluntly “she has a killer resume!” AJ, who led Golden Palm’s investment in Miishe’s start-up, explained why he invested in her. “Her educational background – Harvard and Stanford – gave her strong credibility but in and of itself wasn’t dispositive of an investment decision. We were more impressed that she had founded a company before and had critical learnings from that experience...Our investment in her business sent a positive signal to the market and resulted in other VC firms based in Silicon Valley also investing...We were also able to leverage the Harvard network to introduce her to some firms in Silicon Valley and Southeast Asia that she is currently engaged with for potential investment.” AJ admitted that Miishe’s global network, which spanned Accra, New York, London, and Silicon Valley played a major role. “People I respected in the Harvard network, in the Silicon Valley and New York networks, all vouched for her...that was key.” As Carter et al. (2003) found in their research and is the case with Miishe, her graduate education played a role in increasing the likelihood of successfully raising venture capital funding. Trusted referrals and overlap of social networks also were key for Miishe, in line with prior research by Kanze et al. (2018).

However, Miishe also shared some of the gendered challenges that women entrepreneurs face in trying to build relationships with investors, who are mostly male. “There has been some weirdness in the process. One investor told me that he didn’t respond to my initial emails (after he was re-introduced to me by a friend) because he assumed I wanted to build an export service for women’s makeup companies and that’s a small market. Neither is true. Another investor invited me to follow him up to his room at night. Another put his hand on my leg and asked me to sleep over with him. To be honest, these things fall under the nuisance category. They are not really preventing me from doing anything. For me, the biggest thing to watch out for is the difference in how men investors (i.e., most investors) bond with other men versus women. Bonding and trust are essential in this industry. There is a lot of late-night partying and drinking that helps catalyse these bonds. When it is mixed gender (probably even when it is not), it’s hard to remove the sexual charge from all of that. I do not really have a full solution. But things get better, I think, when there are other business-minded women around. Numbers help set the tone.”

## 6.9 Conclusion

In this chapter, I have analysed the extant literature on venture capital and the gender gap and distinguished between the supply side (investor driven) and demand side (entrepreneur driven) factors that contribute to the disparity. I have shown how examples in Ghana suggest that we can better understand the supply side and demand side factors as being co-constructed and influencing each other, which is an original contribution of this thesis. I have also demonstrated how the Ghanaian and African venture capital landscape has evolved over time and the dominance and importance of American venture

capital in the ecosystem. Importantly, as discussed in this chapter and the previous chapter, the African venture capital ecosystem has less of a gender gap than its counterparts in Europe and North America. Through case studies of Golden Palm Investments and Ingressive Capital, I have shown how herding, and networks play a key role in the investment process. Through the case studies of Priscilla and Miishe, I have demonstrated the importance of intersectionality, transglobal social capital and networks, trusted referrals, herding and a 'killer resume' in successfully raising venture capital.

In the next chapter, I analyse how female technology entrepreneurs in Ghana navigate marriage, motherhood, and gendered expectations of them amidst growing their digital ventures.

## Chapter 7: Tech mothers - navigating marriage and motherhood in the digital age

### 7.1 Introduction

*“It’s like you’re expected to be a superstar entrepreneur during the day and then you get home in the evening and immediately transform into a rockstar mother and wife, cooking the best jollof, cleaning the house sparkling clean, and having enough energy to give your husband three rounds of mind-blowing sex.... All while being submissive and prayerful and doting over him, so another woman doesn’t steal him...it’s exhausting!”* – one of my interlocutors.

As evident in the quote above, my interlocutors, especially the married ones with children, in building and scaling their enterprises are confronted with prevailing local socio-cultural norms and expectations around marriage and motherhood that create conflict. They are faced with lots of expectations about how they need to perform and act. There are gendered expectations about how a mother and a wife should behave. These societal expectations are embedded in certain ideas about women which are influenced by religion and ethnic beliefs. How do they deal with this? My research is focused on understanding how female tech entrepreneurs navigate and attempt to fulfil expectations about women and motherhood as well as expectations of being a successful entrepreneur. I find that they end up either delaying motherhood or picking a man who is understanding and supportive. In this chapter, I analyse the tensions between being a rockstar entrepreneur and a wife/mother, using case studies to examine the various strategies that my interlocutors deploy to manage work-family conflict.<sup>59</sup> Work–family

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<sup>59</sup> Throughout this chapter, when I refer to family, I am speaking about the household unit.

conflict is defined as “a form of inter-role conflict arising because pressures emanating from one role are incompatible with those from another role” (Shelton, 2006, 288). As Bawa (2016) has noted, participant narratives provide insights into more nuanced understandings of empowerment since the experiences of participants are mediated by prevailing local norms, as well as by globally influenced socioeconomic ideals (120).

This chapter will examine the importance of these socio-cultural factors, especially religion, in understanding work-family conflicts. To better understand how my interlocutors deal with work-family conflict, apart from the literature on work-family conflict itself, I will also review the literature on modernity, motherhood, and religion, to establish the socio-cultural context within which my interlocutors are embedded. I modify Hakim’s (2000) preference theory (which I explain later in this chapter) to extend it to partner selection and show how my interlocutors are negotiating work-family conflicts prior to marriage and will only agree to marry partners who support their lifestyle. Thus, this chapter contributes to the globalisation of the extant literature on work-family conflict, which has little coverage of Africa.

## 7.2 The Super Star Entrepreneur and Work-Family Conflict

As entrepreneurs building technology enterprises, my interlocutors emerge as icons of modernity, yet their lived experiences reveal a constant tension between the expectations of what it means to be a globalised cosmopolitan woman and how that is mediated by local norms and socio-cultural mores. Forson (2013) highlights the importance of understanding entrepreneurs through the lens of mixed embeddedness, which acknowledges the significance of culture at the individual and family levels but further requires that the wider economic, sectoral, and institutional context be

incorporated in any analysis. However, as Forson notes, neither the cultural nor the structural frameworks take into consideration the gendered underpinning of such cultures, institutions, and organisations (Ibid, 462).

Feminist scholars recommend engaging with the gendered context within which women become entrepreneurs. For example, Brush et al. (2009) point to the embeddedness of female businesses in a multi-dimensional, multi-layered gendered environment. Research on how women negotiate the boundaries of their roles at work and their roles at home has consistently highlighted the gendered nature of entrepreneurship, with societal expectations of women being the ones to fulfil domestic roles (Yousafzai et al., 2019; Ahl, 2006). As Yousafzai et al. (2019, 171) have noted “we know little about the negotiating actions taken by women in the contexts of both livelihood challenges and patriarchal contexts.” As Gerson (2004) has further noted, a sensitivity to gender allows researchers to replace stereotypes with more nuanced and accurate descriptions of the lives of people (164). In addition, a gender lens allows us to understand the broader social structures (which are gendered) in which a woman’s agency is enacted.

In addition, the female technology entrepreneurs in Ghana are operating in a global tech economy and thus, their trajectories are shaped not just by local phenomenon but by globalisation itself. Feminist scholars have offered diverse perspectives on globalisation. Rakowski (2010) and Marchand and Runyan (2000) have pointed to the expansion of opportunities and access to economic mobility under globalisation, which has resulted in greater decision-making among women. Others like Pyle and Ward (2003) have argued that power relations associated with globalisation are gendered and thus



globalisation creates and reproduces social and economic inequalities. Overa (2017) has argued that the current processes of globalisation have a gendered impact and affect women's agency in Ghana in greater ways than men's agency and that women's agency "may often be restricted by the cultural, social and economic constraints and contradictions that undermine its potential for enactment" (363). For Overa (2017), structural and normative limitations constrain the agency of female entrepreneurs, especially the ones that operate in male-dominated and globalised fields such as oil and gas (and technology). Research in Ghana suggests that globalisation and economic reform have led to an increase in poverty rates among women (Yeboah, 2003). The outcome (beneficial or adverse) of globalisation typically depends on spatial contexts, socio-cultural factors, and power dynamics in specific societies (Oberhauser, 2010).

Deborah Pellow (2015) in her research on Ghana speaks about the phenomenon of multiple modernities, which she describes as "the fusion of different colonial traditions with indigenous traditions and newer global forms, the continual reinterpretation of the cultural programme of modernity...and attempts by various groups and movements to reappropriate and redefine the discourse of modernity in their own terms." (58). By multiple modernities, Pellow means that "being modern" means different things in different places and to different people. She sees this most evident in the urban context with the African city being a space of "intercultural improvisation" (Ibid). She describes the cosmopolitans in Ghana – a group that is "intellectually and aesthetically open to divergent cultural experiences and able to make their way into other cultures" (60). In many ways, almost all the female tech entrepreneurs I met in my research would fall in that category. As discussed in Chapter 2, most of my interlocutors are returnees and

already represent multiple cultures from their international upbringing. I do not agree with this framing of modernity, and I share Fred Cooper (2001)'s critiques about these sweeping and often a-historical generalisations. However, I still find Pellow's perspectives to be useful because they mirror the ways and the language with which my interlocutors see and describe themselves. For example, one of my interlocutors described herself as such: "I'm a cosmopolitan woman... I'm modern, I'm global, I'm comfortable in New York or London or Tokyo, but I'm also very local... I spend time in my village, I know my culture very well and I combine the best of both worlds." Of course, it's a false dichotomy that has been constructed and one that implicitly devalues culture.

These cultural and social mores play a huge role in setting gendered expectations especially related to domestic duties. Global data reveals that women account for a higher share of unpaid work (4.8 hours a day on average) compared to men (1.5 hours); this includes domestic duties such as child-care, elderly-care, cooking and cleaning (Arraiz, 2018, 58). Social norms give women the primary responsibility for domestic work and childcare (Ibid, 59; Winn, 2004). However, the burden is being shared more equally in some countries like Sweden and the United States (Gupta & Phillips, 2019, 73). Women experience greater conflict between work and family roles than men with a more negative impact on their wellbeing (Shelton, 2006). Gender relations at the household level clearly affect access to resources. Beneria et al. (2016) show that women are disproportionately responsible for reproductive and domestic labour. In a review of household labour in Africa, Asia and Latin America, Elson (1995) concluded that women work longer hours than men when both unpaid domestic labour and paid work are considered.

However, some scholars argue that there are benefits to multiple roles. For example, Shelton (2006) notes that women entrepreneurs assuming multiple roles can create work–family enhancement, because time and energy synergies can be achieved across spheres of activity (288). Thus, both depletion and enrichment processes operate simultaneously for women who assume roles both as entrepreneurs and as wives/mothers. However, work–family balance must still be managed because the existence of enhancement does not translate to the absence of role conflict. (Ibid).

Forson (2013, 462) argues that women’s business practices are in fact conditioned by the imperative of maintaining dual roles at home and at work. Dawe and Fielden (2005) find that access to family support for entrepreneurial ventures is gendered. Using data from a longitudinal study in the United Kingdom, Rouse and Kitching (2006) echo those findings; their research shows mostly men entrepreneurs who generally get support from their wives and partners. My research in Ghana found that not only did women entrepreneurs rely on support from their husbands, but it was a deal breaker for them in their search for life partners.

Hakim (2000) makes the case that in contemporary, affluent global North societies, women have “never had it so good” and that women with a newly empowered femininity now have “genuine choice” (Ibid. 14). In her preference theory, she posits that women can make decisions between three options: (1) home-centred woman focused on family; (2) work-centred woman focused on market work and the public sphere; or (3) adaptive woman combining both work and family (she estimates majority of women fall in the latter category). According to Hakim, agency has a greater impact than social structure in determining individual behaviour. This has ignited a lot of debates with many scholars

emphasising the impact of structural constraints on women's agency (see Overa, 2017; Cornwall, 2005; Yeboah, 2003). While I do not subscribe to Hakim's broader arguments, I find the preference theory to be helpful in my analysis of Ghanaian female tech entrepreneurs and how they navigate work-family conflict.

During my research in Ghana, many women entrepreneurs and business leaders I met seemed to echo Hakim's ideas on preference theory. One influential woman executive in the banking industry said to me "everywhere I go, women are outperforming, many of the leading business executives are all women. In the schools, many of the top students are all girls. In Ghana, in business at least, women have a lot of power ... it's entirely up to them to decide what they want to do." Yet, I find that there is both a methodological and political component to this point. First, there is a sense in which interview-based research has an in-built tendency towards eliciting narratives of agency and success. Secondly, I find that some of my interlocutors are very aware of negative representations of poor oppressed African women – or other negative representations - that circulate in the global North and resist these representations partly through an insistence on agency. As I highlighted in the introduction to this thesis, many of my interlocutors feel some affinity with afro-optimist discourses.

However, as I learned from many of my interlocutors, these choices are not made in a vacuum; they are mediated by factors like class (as discussed in depth in Chapter 3; see also James, 2008), income (McRae, 2003) and labour-market constraints (as discussed in Chapter 1; see also Lane, 2004), and socio-cultural contexts (Welsh et al., 2017; Thornton et al., 2011; Urbano et al., 2014; Noguera et al., 2013; Pathak et al.,

2013). In Ghana, motherhood and religion are two important and interconnected themes that emerged from my research.

### 7.3 Religion and Motherhood

The motherhood decision is defined as the choice to forego, start, or enlarge a family (Kuschel, 2019). In a study of the fertility decision-making of one hundred Australian women, Maher and Saugeres (2007) found that fertility decision-making is often situational and affected by social expectations and employment conditions. The literature review indicates women from all over the world negotiate prevailing ideals of a “good mother” (See Kuschel, 2019; Knaak, 2010). Globally, “cultural discourses of femininity still highlight motherhood, which has been perceived as ‘natural’ for women.” (Kuschel, 2019, 4). Gillespie (2000) has noted the influence of Judaeo-Christian religious constructions of womanhood as “heterosexual, fertile, life-giving and fecund” with Mary being the gold standard of a perfect woman, exemplifying passiveness, and total obedience (224).

In a study of 18 female technology entrepreneurs from ten different countries (USA, UK, Chile, Venezuela, Argentina, Mexico, Estonia, Brazil, Pakistan, Morocco), Kuschel (2019) found that for the vast majority of the women, they prioritised their career first and postponed motherhood for as long as possible. Kuschel suggests that an identity-based perspective may help explain this decision-making process: the participants who created a start-up while young and childless behave in line with the socially constructed identity of a founder (as opposed to a woman founder or a potential mother). Drawing from social identity theory (see Rothbard and Edwards, 2003), Kuschel posits that individuals invest more of themselves in roles that are highly salient and thus a strong

work-role salience exists for women founders postponing maternity. My research found mixed evidence for this in Ghana, with other social and cultural factors playing important mediating roles in motherhood decisions by women founders.

Oberhauser (2010) argues that in Ghana and other developing countries, “women continue to be subjects of discipline or control by advanced capitalism and the postcolonial state. For example, women are disciplined and face subordination as sex workers (Beneria, 2003), as laborers in global corporations (Freeman, 2001), as porters in urban markets (Opare, 2003) and as wives and mothers (Alexander & Mohanty, 1997)” (234).

In Ghana and many African countries, a woman’s identity is culturally and normatively connected to her motherhood, her biological and social reproductive function (Bawa, 2016, 124). Several cultural practices, both local and imported, have reinforced the construction of a female identity that is intimately linked to biological, cultural, and social reproduction. There are several cultural practices that celebrate a girl’s passage into womanhood and her subsequent performance of womanhood in most of the ethnic groups in Ghana. These rites of passage, such as puberty rites, marriage, child-naming, and out-dooring, are critical for substantiating women’s identities and for legitimising social status. Motherhood, particularly, elevates a woman’s respect and status in Ghanaian society in fulfilling one of the normative expectations of marriage in Ghanaian traditional society. As Clark (1999, 718) explains it with reference to the Asante, Ghana’s largest ethnic group, “Motherhood is central to female gender ideals for the Asante, as in many cultural systems...In order to be a fully adult human being, a person must have descendants. Voluntarily refusing or neglecting to have children counts as a kind of

suicide, since it rules out the final stage of life, as an ancestor.” In Ghanaian traditional societies, the ohemaas of the old were incredibly important for birthing the future kings.

Motherhood has culturally defined biological, social, and spiritual aspects which has consequences for a woman’s work life. Thus, girls are raised and socialised to be mothers from a very young age: “from being taught cleanliness at an early age to cooking and taking care of siblings (something to which boys are not privy) to ‘sitting properly’ and hoarding food for lean seasons, girls are taught a craft that is expected ultimately to end in the glorification of being a mother in the near future” (Bawa, 2016, 125). Of course, while it is not an accurate depiction that boys in Ghana are never expected to take care of siblings, Bawa’s broader point about girls being socialised to become mothers is valid and resonated with all my interlocutors. During child-naming ceremonies, mothers are praised not just for giving birth to a baby and growing the community, but for also reincarnating ancestral spirits, in line with Ghanaian traditional beliefs (Ibid). Childbirth is also a way to honour the debt to one’s mother for the gift of life by paying it forward to one’s own children (Clark, 1999, 720). Ama Ata Aidoo expressed the significance of biological reproduction to women in Ghana most poignantly when she said: “In Ghanaian society, women themselves believe that only two types of their species suffer - the sterile, that is those incapable of bearing children - and the foolish. And by the foolish, they refer to the woman who depends solely on her husband for sustenance” (Aidoo, 1970, x, as cited in Clark, 1999, 722). Several of my interlocutors struggled with these expectations, as illustrated in the opening vignette of this chapter.

Anambane and Adom (2018) assert that in Ghana “some socio-cultural factors and structural situations continue to work against female entrepreneurs... they face many time

burdens... [and] are expected to play the role of caretakers of homes” (5). Yet, despite these constraints, they found that female entrepreneurs can succeed and thrive due to “their tenacity, resilience, commitment, passion, ingenuity, vision and exploits [which] are worth recognising and celebrating” (Ibid). The success of female entrepreneurs in Ghana has been attributed to their “customary independence in spite of the patriarchal ideology” and “structural transformation [of the economy which is] creating more freedom for women to decide things on their own” (Fuseini & Kalule-Sabiti, 2015, 1832). The experiences of my interlocutors suggest otherwise, and my research findings align more with Anambane and Adom (2018)’s observations than Fuseini and Kalule-Sabiti (2015).

As Denton (2004) has noted, many traditional ideals about gender roles have roots in religion. Both Christianity and Islam have extensive scripture that governs gender relations between a married couple (e.g., in the Bible, Ephesians 5:22 and in the Quran, Sura 4, Verse 34) (McQuillan, 2004). Thus, Christians and Muslims navigate their identities within religious prescriptions concerning appropriate gender relations (Bartkowski & Read, 2003). One cannot properly understand gender in Ghana without understanding the religious context of Ghana. As one of my interlocutors put it “nothing in Ghana will make sense unless you look at it through the lens of religion. Our politics, our values, our everything is shaped by our deep religiosity in this country.”

Most of my interlocutors are Christian. Kamil Fuseini and Ishmael Kalule-Sabiti (2015) have suggested that in Ghana culture and religion are intertwined and religion is often key in explaining social behaviour (see also Gyimah et al., 2008). A 2017 global poll on religion in the world which explores religious beliefs of over 66,000 people in 68 countries across the world revealed that the most religious countries (in terms of % of



respondents who consider themselves to be religious) in the world are Thailand (98%), Nigeria (97%) and Ghana (94%), compared to a global average of 62% (Gallup International, 2017). Respondents were also asked about their beliefs in the soul, God, heaven, hell, and life after death. Ghanaian respondents scored 95%+ in all categories with 100% for belief in God. Ghana is a very religious society.

Ghana is a predominantly Christian country (71%) with a sizable Muslim minority (about 18%) who mainly reside in the northern part of the country (Ghana Statistical Service, 2012). In Accra, where I conducted my research, Christians comprise almost 90% of the population (Ibid). The Europeans that landed on the shores of Ghana included Christian missionaries who laid the foundation for the development of Christianity in southern Ghana by establishing churches and schools (Fuseini & Kalule-Sabiti, 2015, 1833). Today, almost all major high schools in the country are mission or church related. Regina Honu, one of my interlocutors featured in the case study in this chapter (see also Chapter 3), attended Catholic school from kindergarten at Christ the King School through high school at Holy Child High School. Jemila Abdulai, another interlocutor also featured in this chapter attended a famous Methodist high school, Wesley Girls' High School.

In a study using a dataset of 1,424 women from the 2008 Ghana Demographic and Health Survey, Fuseini and Kalule-Sabiti (2015) sought to study the relationship between religion and women's autonomy in Ghana. Their findings suggest that in Ghana, a high proportion of women are autonomous in terms of economic decision-making, decisions over their own health care, freedom of physical movement and decisions on number of children to have; however, quite a reasonable proportion still do not participate at all in these decisions. In addition, women largely participate in household decision-

making as opposed to being the main decision makers across all domains. Importantly, they found that religion was not the driving force of women's autonomy in Ghana (Ibid, 1840). In fact, my research discovered the opposite: as the case studies will illustrate, religion has often been cited as a key contributor to constraining women's autonomy.

Stephanie Newell (2005) in her research on Christian publications in Ghana notes that majority of them are focused on marriage and relationships (307). Many of these publications offer readers strategies for resolving conflicts and achieving peace at home. Nearly all the writers define God-ascribed gender roles for husbands and wives, drawing from Scripture. As Newell notes, "counselling tends to be weighed against wives, backed by biblical quotations which are often interpreted literally to support female subordination" (Ibid, 308). She references a biblical quotation which came up in several of my conversations with my interlocutors, Ephesians 5:22-24: "wives, submit yourselves to your husbands as to the Lord, for a husband has authority over his wife just as Christ has authority over the Church.... And so, wives must submit themselves completely to their husbands just as the Church submits itself to Christ" (cited in Newell, 2005, 309). One of the Christian books enquired "Young man, how well do you know your girl? Have you had the opportunity to eat a meal she cooked?" (Ibid). Many of the African Christian writers blame wives for their husband's infidelities, calling on women to ensure that they stay at home to protect their men from immorality (Ibid).

Thus, Christian discourse in Ghana has "given male authors a vocabulary, a logic and an ideology with which to assert control over women in the home. Vindicated by select quotations from the Bible, they insist repeatedly on women's subordinate status in the nuclear family structure" (Ibid, 310). Of course, as Newell notes, "few real West African

wives will embody this behavioural ideal, which is divorced from the socio-economic realities of a world in which women will work and control their own money as a matter of course” (Ibid).

The studies here point to some contradictions between contexts in which women’s subordination is strongly endorsed and held to be a moral virtue, and those in which women’s independent economic activity is deemed to be necessary and even wise. Against this backdrop of gendered expectations of the role of a woman in Ghana in the house, shaped by religion and other socio-cultural factors, motherhood provides a bridge. At home, my interlocutors encounter challenges balancing work and family responsibilities.

#### 7.4 Regina Honu: Negotiating work-life balance

“In the beginning, I didn’t see myself being able to marry because I struggled to find a boyfriend who could even understand me.” With the heavy demands of running a tech start-up and a hectic travel schedule, Regina found it difficult to find a partner. “The choice of [a partner] was the first conflict for me personally because I had to find a man who was okay with my choices and lifestyle as a female tech entrepreneur.” What is that lifestyle? For Regina it meant “I couldn’t play the conventional [female partner] who will cook breakfast and supper and cook for the week on weekends...it also meant a lot of traveling so I would not always be around.” In addition to that, Regina believed she needed to find “a man who was secure in himself to celebrate my success and not feel overshadowed by my success.” She recalled one ex-boyfriend who would get upset over her popularity. “At events when people would come up to me and reference the work that I am doing, he would get upset about it.”

She initially struggled to find a compatible partner. One of her former boyfriends admonished her “when we get married, you will stop all these things you are doing, right?” Another ex said “Regina, you are too independent...as a man, we want to feel needed and with you, we don’t feel needed.” Regina believes that despite her many accomplishments, many of the men she dated had gendered expectations of her and the role they expected her to play as a “good wife.” She shared that “They want to come home and there is food on the table...one of my flaws that always comes up is cooking...I am not really a cook; I cook as and when....one guy told me that his father never went into the kitchen so he too cannot go into the kitchen.” It was very difficult trying to balance the competing demands of running a business and matching the expectations of these boyfriends. “They made me feel inadequate when I didn’t do all those things” she shared. “Even in our generation, in as much as the men want progressive women who can hold a conversation, they still have the expectations that once you marry you will ‘fall in line’ with the [gendered norms].”

When Regina met her now husband, the selling point for her about him as a potential partner was that he understood her lifestyle and did not expect her to conform to traditional stereotypes. She would not have married him otherwise. It took her time until she met him at age 31 and he met her expectations. Yet, even then, Regina still confessed that “when I got married, I still felt the weight of those societal expectations for myself...I tried to wake up early at 5am to cook breakfast, but I struggled, my mind would naturally want to focus on work...I had to find a balance and I just had to realise that I’m cut differently.” She did have to make certain adjustments. For example, in the past she could travel on the whim, but she now had to have those conversations with her husband. “I

was so used to getting up and going. One time I got an email about a conference in Norway, I replied yes and came home and informed him matter-of-factly and he wasn't happy...he told me we are now a partnership so we need to discuss these things, not to seek permission but so that he feels included in my plans...I even brought him along on one of my trips so he would feel more included in my world and understand what I go through when I travel to these conferences, it sounds glamorous but it's exhausting and not fun."

Being a tech entrepreneur has given Regina greater flexibility to balance work and family. "I can work from home; I can work from anywhere... I have more flexibility as a tech entrepreneur... I also have several tools that allow me to do what I need to do faster and easier...." However, to enable her to have more time with her family, she has invested in building a strong management team at her firm, Soronko Solutions. Yet, Regina's position as a working mother often gets critiqued by outsiders. People would tell her in-laws "We saw your daughter-in-law here and there." Some people told her husband "Are you not able to control her?" Someone called her a "traveling wife" and admonished her for not staying home to take care of her family.

For Regina, pregnancy was a difficult time to be an entrepreneur. "My productivity plummeted...I kept falling asleep and making so many errors... I was not as sharp as I used to be...there were so many mental and physical changes that my body was going through." For Regina, it is a real struggle to achieve balance: "I strive to be a good mother and good wife." She defends her decision to continue to work as a female tech entrepreneur, arguing that "it enriches our economic position...I also bring in money." Regina believes that this gives her greater decision-making power in the relationship.

“The dynamics are very different when the woman is bringing in money...I am in a positive economic position, so I can’t be controlled.” She shared a debate they had over the naming of her child. Regina’s husband is Ewe, and her family is Akan. The Akans are matrilineal whereas the Ewes are patrilineal. By custom, her husband would name the child and give the child an Ewe name. However, she really wanted her child to also have an Akan name to reflect her belonging to both ethnic groups. Ordinarily this would not be acceptable, but Regina believes that her husband’s family agreed to it because she has greater status (compared to other women) in the family because she is an economic provider.

“Raising my daughter is my biggest challenge now.” Regina is always feeling guilty when she must work. “I felt like I was a bad mother anytime I had to leave her.” Six weeks after giving birth, Regina had to travel to attend a conference organised by Microsoft which was very important to her work. “I was only gone for four days, but it messed up my breastfeeding flow.” Regina now has a rule that allows her to balance the competing demands of her business and her family. “I work during the week, but my weekends are totally dedicated to my daughter. I will decline anything over the weekend. I had to make peace with this solution as my new normal.”

Regina also shares responsibilities at home with her husband, though admittedly, COVID has been a difficult time. “Because we are both working from home now, I find that some of the traditional gender roles have come to play... I will be home working all day and my husband may not understand why the house isn’t clean.... Meanwhile for me, COVID was a huge opportunity to grow the business [given the acceleration of the digital adoption curve].”

Based on her experience with her first child, Regina is postponing the decision to have a second child. “It’s a conscious decision. When I got married, my business had reached a level where I felt comfortable becoming a mother... I had built a strong management team...with my child, it’s been a challenge because we decided not to get support staff at home, so it’s a team effort between myself, my husband, and my mother-in-law to raise my daughter. I am scared to go for number two because it will require so much sacrifice. I am at an inflection point of the business, so now is not a good time at all... there is so much stress and pressure from people asking when is number 2 coming? Even my daughter has started asking for siblings, but I am not ready. I am postponing the decision because of the business.”

Where do these norms about what a good wife and a good mother is come from? For Regina, part of it is what she saw growing up, the example modelled by her own mother who was a market trader at Makola (one of the largest markets in Accra) but who also fulfilled all the traditional gender roles of a mother/wife (cooking, cleaning, and taking care of the children). However, Regina believes one of the biggest drivers is religion. “My imaginations about marriage were all shaped by church. Church has a huge influence on your ideas on what a family unit is supposed to be like. A wife must be submissive. Ghana is very religious, so these messages affect your psyche.” Regina and her husband had to complete a Catholic marriage counselling course before they could get married in the Catholic Church. During my field research, I participated in the same course that Regina had to take. It met twice a week for 2-hour sessions, led by mostly older married women in the church. There were sessions on family planning, Canon Law, the meaning of marriage, finances, parenting and the roles of husband and wife. In the session on the

roles of husband and wife, the counsellors taught that it was important for wives to submit to their husbands, drawing on Scripture. They emphasised that the husband is the head of the household. At the same time, they also taught about the husband's need to love and sacrifice everything for the wife as Christ loved His Church.

Regina considers herself a feminist and is trying to raise her daughter differently. "My daughter isn't limited in any way...it is society that tries to limit the child...my daughter will pick a truck in the toy shop and my mother-in-law or someone else will make a negative comment, but I allow her to play with any toy she likes, there is no boy toy or girl toy...If my daughter is doing rough play, I never tell her 'be a lady', whatever that means...it's self-expression, she can jump and run and be boisterous...she can be a lady jumping and running...I am raising my daughter with no limits and no definitions of what her character is supposed to be...I am answering her questions and encouraging her to question everything...Ultimately, I want her to see me as an example: that I am living my life unapologetically and hopefully it gives her permission to do the same."

Even though some feminists have called for an end to taking the last name of men, Regina decided to take her husband's last name. "I always wanted to take my husband's last name so that I could have the same last name as my daughter. My father was adamant that I should keep my maiden name because it had become my brand, everyone knows me as Regina Agyare. But I chose to take my husband's last name, partly out of respect for my husband but more importantly to develop that name for my children. I want to build the Honu name for the benefit of my children, so that when my daughter grows up and says I am Genesis Honu, it will carry weight and people will say oh is your mother Regina Honu?"



## 7.5 Freda Obeng Disrupts Gender Norms

Like Regina, Freda also had her chronicles of dating life in Ghana in which she struggled to find compatible partners. “One of my exes in particular was just too condescending for me. He worked less than 1km from my house but would never visit me; he always expected me to be the one to visit. When I visit, he would play video games and expect me to cook for him and to cook extra for the rest of the week. Normally I don’t subscribe to those behaviours, but everyone was telling me that I am too professional and too focused on my career, and I need to make room for relationships, so I decided to try. Another time, he became upset that I visited him at the office, and I wasn’t wearing heels. He believes every woman should dress up in heels because you look sexier that way. When I told him, I was taking online courses, he said I was wasting my time. He didn’t believe in my business venture at all. He never believed in Kaeme. He wanted to become a pastor and told me that I should focus more on preparing myself to be a pastor’s wife, but have I ever seen a pastor’s wife running a business?” Another ex-boyfriend cheated on her while she had travelled for work and blamed Freda for it, saying it was her fault since she had neglected her duty to fulfil him sexually and therefore, he had to go elsewhere to search for fulfilment.

Freda got married at the “late” age of 34. Prior to getting married, she was getting a lot of pressure to get married. “My aunties kept telling me ‘You are not going to be beautiful forever’ and ‘your eggs will die ooo.’ Some of them told me ‘Just find anyone and marry.’ They will send you people’s numbers, unsolicited. They will invite you to events to introduce you to random guys. They kept telling me ‘you need to stop being picky about guys.’ I was even accused of being a lesbian. One auntie said, ‘you are

beautiful, you were educated abroad, you come from a good family, the only reason you are not married is you must be a lesbian.” Freda would shut those conversations down, but she did feel the pressure. However, she knew what she wanted and did not want to settle for less.

When Freda finally met Ade, her now-husband, she was excited about their compatibility. “We both are entrepreneurs so we both understand what it is like to be an entrepreneur...we are patient and understanding with each other.” Ade runs a software technology business serving telecommunication companies across Ghana, Nigeria, and Benin. Ade also does not subscribe to any of the gender norms. When they discussed expectations prior to their nuptials, he shared “I just want a peaceful home, I don’t need you to make food, I can cook my own food. If you cook that’s cool, but I was cooking before I married you...If we have kids, that’s fine, if we don’t, that’s fine too...all I want is a peaceful home, my work is stressful, and I just want to come home and be happy and peaceful.” For Freda, it was very important that Ade and she were aligned on expectations. “He does not have expectations that I can be an entrepreneur and a cook and a cleaner at the same time...he knows the struggle of running a business.”

Freda shared that she also equally does not have the typical expectations of a husband in Ghanaian society. “I don’t expect that he has to buy me a house or a car, I don’t put any financial pressures on him. We see ourselves as individuals but also as a team at the same time.” For Freda, Ade has been key to her ability to run her business and manage her family which includes their son KG. While shadowing Freda during field research, I spent some time at their home and observed that Ade would get involved in several domestic activities. As Freda shared and I can attest to, “Ade does all the house

activities. He feeds the baby, cleans the baby, washes dishes, irons, does laundry...if you are looking at traditional responsibilities, you would think that Ade is the woman of the house. He scrubs, he mops, he does the bed, he changes KG's diapers. He will play with KG all day and skip business meetings because of KG. His approach to childcare is that he is the primary childcare giver, and he wants to bond with the baby. That is how he was raised. Growing up, all the men in his family did the household chores and his mother was revered and would be chilling. In fact, the first time I visited his family, I hang out at the beach with his mom and sister while he and his father cooked for all of us."

Because they are both entrepreneurs, they made a conscious decision to hire support staff at home to help with cooking, cleaning and to help watch over KG. Freda said she never feels guilty about having to invest her time in her business or in other activities. "I have no guilt at all. I wake up and I have lots of stuff to do; I have Kaeme, I have KG, I have lots of stuff. I go ahead and do everything knowing I also have KG there. I don't feel guilty. It's not that I don't care, because I do care, but I feel like everything else is also my responsibility. And all these things were here before KG. Sometimes I leave the house at 6am and I don't get back until 9pm and so I won't be able to see KG, but I don't feel bad because I know Ade is there." Sometimes Freda takes KG to her meetings. "Three days after I gave birth to KG [in the United States], I attended a career fair with him...When he was 1 month old, I had a meeting with the EU Ambassador, and I showed up with KG...I try to make it work."

Freda believes religion is responsible for shaping her expectations of women as mothers and wives in Ghana. "You know Ghanaians, we are Christians from the day we are born... my mother says I am too giddy and too American...she said I need to submit

to my husband...if he wants sex five times a day, I need to oblige and that the husband is the head of the house and whatever he says is law...my mother was taught this by my grandmother who raised her in the Church...before I got married in my mid-30s, my mother thought she was a failure because I didn't turn into the "church model" of a woman...She used to say I would never get married because I am non-submissive ...for my mother my getting married was a big deal because it proved that she had raised a "marriable" woman...she would tell me, that I am too independent and I should act weak small....she even said that my SUV is too much for a woman and I should stop driving it otherwise potential suitors would be intimidated..." She added that "our culture blames the woman for anything that happens to her and also blames the woman for anything that happens to her husband."

Freda describes Ade as a non-practicing Catholic. "He was raised Catholic and believes in God, but he feels that organised religion is not his thing; he feels we use religion to oppress people. He will do good to people, and he will pray to God, but he is not into organised religion...I'm the one defending pastors at home but Ade won't go to church...he will pray at home though..."

For Freda, she is a Christian and a feminist and someone who upholds cultural traditions as well as new global ideas, a "cosmopolitan" as Powell (2005) would call her. As she ended our last interview, she said "I wish our parents would understand that our generation is different from their generation. We will take the positive parts of our traditions and complement them with new things and new ideas."

## 7.8 Jemila Abdulai Grapples with Local Misogyny

Jemila founded Circumspecte, a digital technology company back in October 2007, but only pursued it full time eight years later in October 2015, when she quit her job with the African Development Bank. Jemila grew up heavily exposed to technology because “my father is an I.T. person.” “He had this old Apple computer...and I started using it when I was about four or five years old...I was always at ease with computers.” Jemila recalled that she was the only person in junior secondary school who had an email address and used the Internet regularly. “I always knew exactly what was going to happen with the telenovelas because I had done the research on the Internet...that helped me to get some cool points in school.” Her father also encouraged Jemila and her siblings to take computer classes.

After Junior Secondary School, Jemila enrolled in a course at the University of Ghana, Legon, where her father worked in the Computer Science Department. “I learned how to use Microsoft Word, Excel, Outlook, Access.” Later, when her father set up the first Cisco training institute in West Africa, Jemila signed up for those classes as well. “I was the only female in that class.” Through the Cisco training, Jemila became interested in the architecture behind the internet. “I was obsessed with the internet and would use all my vacation days to go with my dad to work so I could use the Internet.” Jemila had also signed up for a software development course, but initially she “hated coding.”

At Wesley Girls’ Senior Secondary School, there was a computer lab, but it was not being utilised effectively. Jemila convinced the computer science teachers to allow her to run the lab as an internet café when classes are not in session. She recruited two other students to help her run this venture. After completing Wesley Girls’ in 2005, Jemila

moved to the United States to pursue her undergraduate education at Mt. Holyoke College where she studied Economics and French. During her third year, she did study abroad in France in Montpellier. There, she documented her travels in a blog she called “Circumspecte” which she created in October 2007. Even though she initially hated coding, she learned enough software development to be able to build her site. She initially built it for free using a Google blog service, but then later paid \$10 for a dedicated domain name. Her website became very popular and developed a loyal following.

Jemila worked on Circumspecte throughout college and beyond. She graduated from Mt. Holyoke and worked at Devex as an International Development correspondent and the African Women’s Millennium as a Project Coordinator. In 2011 she went to graduate school, pursuing a MA in International Economics and International Affairs at Johns Hopkins University in the United States until 2013. During this period, she also worked for the African Centre for Economic Transformation as a Communication Consultant. After graduation, she joined the African Development Bank working on operations across multiple African countries.

Throughout this period, Jemila was growing Circumspecte’s audience. She became worried about brand risk and wanted to separate her personal brand from the website brand, so she spent “a couple hundred dollars on the brand separation process in 2013...that is when we did the logo design.” She finally quit ADB in October 2015 to pursue Circumspecte full-time. Circumspecte “researches, writes and publishes informative, opinion and editorial articles on African issues” and “advises Africa-focused start-ups and projects on brand, communications, event planning and business development.” As a digital agency, it also “creates innovative digital campaigns for brands

and organisations” as well as “market and publicise initiatives with a social impact using digital and new medial tools.” Circumspecte also hosts and develops web-based video discussions on development, technology, and socio-economic issues.

Jemila shared her thoughts and struggles with encountering misogyny in Ghana in a powerful essay, which she posted on Circumspecte and shared with me. I will share excerpts.

As a girl, I never quite grasped the notion that ‘girls don’t do that.’ I was a tomboy through and through and if anything, telling me I couldn’t do something was a sure bet that I would try. It wasn’t until I got to JSS that the societal roles and expectations of girls crept up on me. It was a festive day, my aunt’s wedding and my sister and myself were quipping with some of my relatives. Relative: One day this will be you. My sister and I, excitedly: Really? Relative: Yes, one day you will leave your father’s house and move somewhere else. My sister and I looked at each other grimacing. Relative: Yes, everything you are working for? It won’t matter. Your brother will take charge of everything. I couldn’t have been more than 12 years old at the time, but I already knew I didn’t like what I was hearing...Our relative? He laughed it off and called us childish. If that exchange had happened today, many people would likely blame my “American education” for that thinking. But it wasn’t. At 12 years old, I was yet to be ‘corrupted’ by Anglo-Saxon ideologies on the worth of men and women. It wouldn’t be another seven years until my feet would touch American soil, and another ten until I would capture those societal expectations in a spoken word poem titled ‘Woman’. So, what could have been responsible for my lofty ideas about what a girl – or woman – could or couldn’t do? It’s simply, really: my father. Before women and girls in ICT became cause worthy, my father championed it. I started using computers at the age of four...after JSS, my father enrolled me in a CISCO networking course he was helping facilitate ... ICT is the future and young girls like yourself need to understand it, my father’s words (Abdulai, 2016)

During my research, I observed that there was some opposition to the idea of feminism in contemporary Accra society; it was branded as a foreign phenomenon that was being imposed on Ghana. As I heard a young man say at a bar in a discussion with his friends “this feminism and gay nonsense isn’t African; these white people are just imposing these things on us.” Yet as an unapologetic feminist, Jemila disagrees with that

assertion and locates the source of her feminism as rooted in her own local experiences in Ghana. She shared:

Many of us think mothers determine the women their girls will become. To a degree, that's true. Our mothers provide a framework for shaping our identities as young ladies and women; they show us the ropes and transmit the non-tangible elements of being a woman to us, they guide us through the confusing (?) transition into womanhood. But despite the fact that half the global population is female, it's still a man's world. And so, when it comes down to it, men and boys are very much a point of reference for the women we girls become. It's they who determine our sense of worth, our views and our expectations of society. Where mothers influence our identities as individuals, fathers shape our identities as social beings. They determine the relationships we build, keep, destroy, nurture, and inspire. I share these stories about my father to highlight an important point: there are men and boys who respect, invest in, and stand by women and girls. That said, they seem to be the minority, the exception to the rule (Abdulai, 2016)

In my discussions with her, Jemila believes that misogyny is deeply embedded in the fabric of Ghanaian society and how men are socialised. As she notes, "Day in and day out, women in Ghana and elsewhere are subjected to a constant diminishing; a never-ending struggle against being compressed, beaten down, balled up into the most simplistic versions of who they are. Why? Because every day a man or a boy somewhere is acting on a commandment handed down from generation to generation: women are to be seen, not heard."

She believes that the media has been complicit in the proliferation of misogyny in Ghana. "Ghana is the only country I've lived in where on a bi-weekly or monthly basis a vocal, visible or accomplished woman is reduced to her vagina or ability to suction money and favours from men (her father included). Where the media (both traditional and social) have no qualms about bashing her and destroying her character, and so-called leaders



religiously send out messages about her worth being confined to the institution of marriage or her ability to bear children.”

Jemila also shared that she has been a victim of gender violence in Ghana:

“The 2014 Child Protection Baseline report by UNICEF and Ghana’s Ministry of Gender, Children and Social Protection indicate Ghana’s rape and defilement statistics are so high we ‘rank in certain instances with countries that have a recent history of violent conflict.’ Specifically, Sierra Leone, DR Congo and some Middle Eastern countries which have a ‘poor record on women’s rights.’ Yes, you read right. Ghana also happens to be the only country where a man has actually attempted to lay his hands on me – not once, but twice. I know more than one Ghanaian woman who has suffered some level of violence or abuse. It’s probably happening to someone you know as you read this”.

Jemila believes that “as the needle swings from marriage and kids being women’s purported *raison d’être*, we will seek out men who allow and encourage us to express the full complexity of our being. As more of us women are educated and given a range of choices, we will strive to become not just career women, but the best we can be in the fullness of our individuality and the breadth of our experiences as citizens and members of a community, country, continent and world.”

## 7.9 Discussion

Despite the differences and individual trajectories, the lives and experiences of Freda, Regina and Jemila share a tension between being a rockstar entrepreneur and a ‘good’ mother/wife/woman in Ghanaian society. Drawing their case studies together, I observe four key strategies that my interlocutors deploy to help navigate this tension. These strategies are: (1) partner selection; (2) deferral strategies; (3) boundary management (creating and traversing boundaries between work and family domains) (Lambert, 1990, 247 - 250) and (4) delegation.

### 7.9.1 Partner Selection

My interlocutors are very deliberate when it comes to partner selection. For example, Regina had shared how she only married her husband because he understood her lifestyle and was supportive and agreed to not impose traditional stereotypes in their household. Similarly, Freda did not settle with any partner until she met Ade, who was the right partner to support her busy lifestyle as an entrepreneur and who did not subscribe to many of the traditional gendered mores. Jemila also maintains similar ideas and is not yet married until she meets the right partner who will be supportive of her career. In a sense, these women are reflecting Hakim (2000)'s empowered femininity in their preference choices for a partner. They choose partners that can support them. As many scholars have noted, spousal support, which includes material support, emotional support and sharing of childcare, is critical for the success of female entrepreneurs (Mordi et al., 2010; Welsh et al., 2014; Zamberi, 2011).

This emphasis on 'choosing the right partner' links to self-narrativisation and expressions of agency. My interlocutors don't claim to 'have it all.' They acknowledged and shared points of difficulty but they also positioned the problem as being partly about 'traditional' views on marriage, espoused by various others – and particularly by the older generation. The emphasis on finding the right partner for a more companionate marriage enabled them to feel and describe how they as individuals had navigated this. In this companionate marriage, there is an emphasis on being a team rather than a hierarchy. By selecting a partner who is prepared to forego the stereotypical demands of a 'traditional' husband, the women gain an ally. When the husband and wife both say that they subscribe to a more 'modern' form of companionate marriage, the woman is better

placed to stave off demands that often come as much from her own family as from 'societal norms' in general. Some anthropologists have noted that worldwide there is a shift towards 'companionate marriage' (see Hirsch & Wardlow, 2006). But like any global trend, there are always locally specific and class-inflected dimensions.

My interlocutors emphasised that they were cosmopolitan, but this did not mean that they did not know, understand, or care about their own culture. Rather, they could see a variety of possible ways of being married and finding solutions that worked for them as individuals in a new generation. As we see from their experiences, Christianity and companionate marriage have an ambiguous relationship. Scripture is often used to emphasise that the man is the head of the house. But then the dominance of the man should be tempered by love, according to the Christian marriage counsellors. This gives my interlocutors some leverage – if they choose the right kind of partner, who is compatible and understanding, then he will not be too domineering because he loves you, and it is difficult for disgruntled family members (who would prefer them to be more compliant wives) to argue with love. Indeed, love is seen as essential to a Christian marriage, which allows my interlocutors to reconcile their Christian beliefs with a less oppressive and more companionate kind of marriage.

### 7.9.2 Deferral strategies

I also observed that my interlocutors deployed deferral strategies around the timing of marriage. For example, Regina did not get married until she was 31. Freda similarly did not get married until she was 34 and Jemila remains unmarried at 36. They are marrying at much later ages than the median age for first marriage in Ghana, which is 19.8 for women and 25.9 for men (Ghana 2008 Demographic and Health Survey).

My interlocutors also defer timing around childbirth. For example, Regina has decided to postpone having a second child to focus on growing her business. Here we see another interesting example of Hakim's (2000) preference theory in action, with Regina exerting her agency and choosing to be an adaptive woman more focused on her business at this point in time.

### 7.9.3 Boundary management

My interlocutors also employ boundary management as a tool to manage work-family conflict, but they do so in different ways.<sup>60</sup> For example, Regina sets firm boundaries by allocating all her weekends to spend with her daughter. She will not participate in any event or do any work during weekends. That way she clearly separates her week where Monday to Friday is primarily focused on the business and Saturdays and Sundays she is exclusively focused on her family.

However, sometimes, my interlocutors blur the boundaries between work and family. For example, as she shared in the case study, Freda often takes KG to her meetings. During one of my participant observation studies with Regina, she had the baby cot in her office because for that day there was no one to look after her baby so she had to bring her to work. Often the literature on work-family conflict focuses on work intruding into the family domain, but here we see examples of the family domain also intruding into the work domain.

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<sup>60</sup> Boundary management is defined as methods of developing and navigating borders between work and family domains (Shelton, 2006, 287)

#### 7.9.4 Delegation

Delegation is another strategy that my interlocutors employ in managing work-family conflict. They do so primarily in two forms: delegation of business duties, and delegation of family/domestic duties. For business duties, they often delegate some aspects of their roles in the business by empowering their subordinates to be able to assume more responsibilities in the business. For example, Regina has built a management team that she relies on to run the day-to-day operations of the business, which gives her the flexibility to reduce her responsibilities when needed.

For domestic duties, my interlocutors either engage the help of family or they hire support staff to assist with childcare and domestic chores. Freda, as we observed in the case study, has both the strong support of Ade as well as full-time staff in her household. For Regina, she opted out of hiring support staff and has mostly relied on family.

However, it is important to recognise that delegation is made possible through partner support and adequate financial resources (Martins et al., 2002; Moen & Yu, 2000). An entrepreneur needs both the financial capital to hire employees to be able to delegate in business, as well as the financial means to hire support staff for domestic delegation.

#### 7.9.5 Navigating the tension

Yet despite all these strategies, my interlocutors are constantly navigating tension between being a rockstar entrepreneur and a good woman/mother/wife. For example, for Freda, her decision to delay marriage came with significant pushback from family members. Here, Freda's family's behaviour can be understood in the context of the meanings of marriage and motherhood in Ghana, which as discussed, have deep cultural significance, and relates to paying forward the debt owed to one's mother for life as well

as the reincarnation of the ancestral spirits, among others (see Clark, 1999; Bawa, 2016). Thus, for several of Freda's aunties, Freda's refusal to marry was interpreted as a refusal to pay forward the debt owed to her mother.

For Regina, even though she has deployed all the four strategies above, she still shared that she feels the weight of societal (gendered) expectations. Thus, there is a sense in which her agency is not as naked as Hakim (2000) contends. In Ghana, her preferences are not selected in a vacuum; she must contend with societal expectations of her role as a mother and a wife. As she shared, she often gets critiqued and called names such as "traveling wife." This is a tension that many of the male entrepreneurs I met and interviewed did not have to deal with.

## 7.10 Conclusion

In this chapter, I have reviewed the literature on work-family conflict. I have shown the importance of socio-cultural context and explored religion and meanings of motherhood in Ghana. Through case studies of Regina, Freda, and Jemila, I have shown how female technology entrepreneurs are using various coping strategies to manage work-family conflict. I have also extended Hakim's (2000) preference theory to partner selection to show how these women entrepreneurs are using their empowered femininities to only select partners who will support their adaptive lifestyles that combine both work and family. As icons of modernity in Accra, my interlocutors navigate this tension between being a rockstar tech entrepreneur and fulfilling gendered expectations of familial roles. As my interlocutor, Jemila, poignantly put it: "As our mothers and grandmothers have done before us, we will continue to juggle and embrace the spectrum of our roles in society. We have always been and will continue to be women, girls,

nurturers, homemakers, professionals, wives, mothers, leaders, innovators and so on. Sure, there are some of us who will opt to choose the traditional garbs society has handed us – and that is perfectly fine too – but at the rate things are going, the buttons will eventually pop”.

## Chapter 8: Conclusion

We began this thesis with Betty in her home in Cantonments, one of the wealthiest suburbs of Accra – and historically home to expats, the diplomatic corps, senior government officials and uber wealthy Ghanaians, and now a tech entrepreneur. African entrepreneurs have traditionally been characterised as necessity-based entrepreneurs (Delacroix et al., 2019; Viswanathan et al., 2014). However, as we have seen from my research, digital entrepreneurship is viewed differently. The digital imaginary presents digital entrepreneurship as an opportunity for young Africans to build enterprises that can scale quickly and achieve tremendous economic success, while contributing to the region’s economic development. Betty and my other interlocutors all believe passionately in the transformative possibilities of the digital economy. Yet, at the same time, they clearly recognised the myriad challenges around funding, market size, infrastructure, and regulation. My research was focused on trying to understand how entrepreneurs like Betty succeed in Ghana’s growing digital economy. Driven by this question, the ethnography led us to an examination of how success is produced and reproduced in the digital economy. Through studying this, I provided an examination of the possibilities of success that goes beyond the extant literature with its limited coverage of Africa and the digital economy, and with the limited literature mostly focused on female entrepreneurs in the informal economy. I demonstrated, through my research, how the digital economy while often understood as a virtual space, is embedded in social relations, and how these social relations are in some ways distinctively Ghanaian but are also part of and are affected by global flows.



This approach has offered an interesting analytical perspective from which we can examine how success in the digital economy is produced, navigated, and lived through. In chapter 2, I argued that digital entrepreneurship has become a space for imagined and achieved social mobility and success, partly because of the state's concern with digitalising the Ghanaian economy as part of the NPP government's 'Ghana Beyond Aid' economic agenda. I contended that the digital economy is a beneficiary of Ghana's macroeconomy, which since the implementation of structural adjustment, has been designed to position Ghana as a preferred choice for foreign direct investment. This has been enacted by liberalisation policies which often privilege foreign investors and foreign capital. Many of my interlocutors and tech entrepreneurs in Ghana broadly speaking also publicly participate in this Afro-optimist narrative that aims to promote Ghana (and the continent) as an exciting frontier for innovation and investment, even though privately they harbour many reservations and are deeply critical of the government, and the perceived gap between rhetoric and action. This rhetoric promotes the digital economy as a tool to democratise opportunity and to create a more inclusive economy that empowers everyone, even though my research revealed otherwise.

In chapter 3, I analysed the family life and class backgrounds of my interlocutors, which provided insights into the ways female entrepreneurs navigate the digital economy and challenged narratives of the digital economy as an open and inclusive space. Their experiences gave us insight into the different cleavages and articulation of social, cultural, and economic capital inhabiting the digital entrepreneurship space and the way class mediates entry into this space. I argued that their stories help us make sense of the tension between class as a narrative and class as an experience of inequalities. I used

Bourdieu's (1977) concepts of cultural, social, economic, and symbolic capital to understand the various ways that my interlocutors engage in mobilisation and conversion of capital as they build their digital enterprises in a sector that can sometimes be hostile to women. I found that even though my interlocutors presented themselves as icons of modernity and change and transformation, ironically, they represented and reproduced existing social inequalities as they overwhelmingly came from privilege. The pursuit of digital entrepreneurship in Ghana is mediated by class.

In chapter 4, I studied the relationship between gender and commerce, demonstrating how female digital traders are navigating infrastructure challenges and offline relationships in Ghana to sell their goods on their e-commerce platforms. I also showed how the digital traders are coming up with innovative solutions to local constraints. They are also focusing on small niche markets where local market knowledge is a competitive advantage. By connecting the e-commerce literature to existing anthropological studies on women traders in Ghana and to my ethnographic material, I contributed to the expanding research on digital entrepreneurship and e-commerce, showing how female digital traders navigate the infrastructural challenges and the idiosyncratic digital landscape in Ghana to sell goods and services online. Importantly, this chapter demonstrated that these e-commerce businesses are always embodied and are thus enabled and constrained by the economic, social, political, and environmental geographies around them.

In chapter 5, I examined the technology incubation scene in Ghana, mapping out the tech entrepreneurial ecosystem with respect to tech hubs, accelerators and incubators and analysing the gendering of these spaces and their roles in the success of

digital entrepreneurs. I contended that we can better understand capitalism and the making of the digital economy in Ghana through a feminist examination of these growth enabling systems. These growth enabling systems often (re)produce existing gendered inequalities as they serve as gatekeepers and signals to the broader ecosystem of investors and funders. I suggested that adopting a gender-conscious approach within growth enabling systems (incubators and accelerators) could improve the outcomes for women and recognised that even though there is still room for improvement, Ghana (with better gendered outcomes) has a lot to teach Silicon Valley and the other global centres of technology entrepreneurship.

In chapter 6, I analysed the venture capital landscape in Ghana and across the African continent and examined the gender gap in early-stage financing. I found that the supply side and demand side are not cleanly separated but are co-constructed: how entrepreneurs perceive the investment companies influences the ways in which they engage with the investment companies; in turn, the behaviours, techniques, decision-making, and social practices of the investment companies, influence the perceptions that entrepreneurs have of them. This contributes to the persistent gender gap in venture capital.

Finally, in chapter 7, I deepened our understanding of how female tech entrepreneurs navigate and attempt to fulfil expectations about women and motherhood as well as expectations of being a successful entrepreneur. In Ghana in particular, religious beliefs and social mores play a prominent role in shaping these expectations. I modified Hakim's (2000) preference theory to extend it to partner selection and showed how my interlocutors respond to these gendered expectations by negotiating work-family

conflicts prior to marriage and only agreeing to marry partners who support their lifestyle. They generally also delay marriage and motherhood until they find the right partner and the business is at the right stage.

Taken together, these chapters provided a grounded account, drawn from my ethnographic work, of the defining elements of digital entrepreneurship in Ghana and its intersection with gender. Each chapter challenged and nuanced themes in the public discourse on the digital economy. This thesis also contributes to the ethnography on women entrepreneurs in Ghana. Only recently have ethnographies by the likes of Bowles (2013) begun to expand the anthropological and ethnographic imagination of African studies beyond the traditional focus on women in the informal economy. Thus, this thesis aims to contribute to the efforts of these authors to renew anthropological studies of women in Ghana.

This thesis also makes more general contributions to the debate on the digital economy in Africa. My examination of the digital imaginary and the state not only draws on the broader debate on digital discourses but is also an attempt to understand the wider social, economic, and political processes involved in the transformation of the digital economy in Ghana. Ghana is an interesting case study because of its long-term experience with neo-liberalism (as Darkwah (2002) notes Ghana is a model student for the IMF). It has participated in the sale of Eurobonds, raising \$x in in the past decade. Thus, Ghana offers great relevance and value for our understanding of ongoing processes of globalisation and global-local restructuring in an increasingly digital age.

Unsurprisingly, the reconfiguration of the digital economy in Ghana has revealed that global financial flows are a fundamental aspect of the way the current development of the country is reconfiguring forms of social differentiation, the relations between the state and its citizens, and the way entrepreneurs are positioning themselves locally and globally. In this regard, my study of the digital economy and female technology entrepreneurs in Ghana can provide a point of comparison for future investigations of those other social and economic terrains that are contributing to the re-organisation of the economy of Ghana. Future research must pay close attention to the growth of the FinTech sector and the increasing expansion of the dominance of global venture capital firms on Africa's digital ecosystem.

Finally, as I write this conclusion, the African tech ecosystem is going through unprecedented growth with continued dominance of global VC firms. As of December 2021, a staggering \$4+ billion has been raised in venture capital by African start-ups year-to-date. Of this amount, female single founders and female-only founding teams raised less than 1%. For every \$1 raised by female single founders, male single founders raised \$17, and for every \$1 raised by female-only founding teams, male-only founding teams raised \$288. The stories of the tech chemaas in this thesis has deepened our understanding of the possibilities for success in the digital economy. But their privileged backgrounds also raise important questions about who benefits from this growth in the digital economy. Future research is needed to better understand the impact of the growth in the digital economy on socio-economic inequality. I worry that as the digital economy grows to become a larger share of national GDP, it will reproduce and exacerbate existing inequalities and pre-existing social asymmetries. Future research is also needed on the

less privileged actors in the digital economy, e.g., the participants in the government and NGO-sponsored digital skills upgrade workshops. Does it make a difference in their economic trajectory? This matters because the realisation of a more prosperous and inclusive economy in Ghana as Vice President Dr. Bawumia often touts, depends on whether or not stories about and from marginalised subjects are included in the narration and in the imagination of the past, present and (digital) future of the country.

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