



Essays on Entrepreneurship in Emerging Markets: Financial Technology, Institutions and Venture Capital

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for Jennifer

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List of Abbreviations

AUM	Assets under management
CATA	Computer-aided text analysis
csQCA	Crisp-set qualitative comparative analysis
DFI	Development finance institution
EAC	East African Community
ESG	Environmental, social and governance
Fintech	Financial technology
fsQCA	Fuzzy-set qualitative comparative analysis
GP	General partner
GSMA	GSM Association
GDP	Gross domestic product
IMF	International Monetary Fund
IPO	Initial public offering
LP	Limited partner
MNE	Multinational enterprise
MNO	Mobile network operator
MSME	Micro, small and medium enterprise
NFC	Near-field communication
NGO	Non-governmental organization
OLS	Ordinary least squares
PPP	Purchasing power parity
PRI	Proportional reduction in inconsistency
P2P	Peer-to-peer
QCA	Qualitative comparative analysis
RIR	Robustness of inference to replacement
SDG	Sustainable Development Goals
SEVO	Social and environmental value orientation
VC	Venture capital
WBES	World Bank Enterprise Survey

1. Introduction

1.1 Definitions, Relevance and Background

A variety of definitions have been proposed for the term entrepreneurship. Classical economists like Say (1880) and Cantillon (1755) associate the concept with individuals who take risk by orchestrating resources in the economy. This emphasis on risk-taking is also mirrored by later researchers (Hull et al., 1980; Stevenson & Jarillo, 1990). Perhaps most influential for the field, Schumpeter (1949) stressed entrepreneurs' ability to innovate and their role in disrupting established markets. Closely related, a growing literature associates entrepreneurship with firms that exhibit particularly fast growth and are financed by venture capital (Gompers & Lerner, 2001; McKelvie & Wiklund, 2010). In contrast, some researchers view entrepreneurship merely as the act of creating and owning a business venture (Gartner, 1988 ;Low & MacMillan, 1988).

In an attempt to narrow down the literature, Shane and Venkataraman (2000) offer one of the most prominent definitions. They argue that entrepreneurship is “concerned with the discovery and exploitation of profitable opportunities” (Shane & Venkataraman, 2000, p. 217). Thus, entrepreneurship as an academic field encompasses a multitude of perspectives. Most views share a focus on the individuals who create and run business ventures, the act of creation, the ventures' performance, or their environment. However, a precise definition remains elusive. Against this background, Audretsch et al. (2015) identify three major strands in the entrepreneurship literature: organizational status (e.g., age, size or ownership), entrepreneurial behavior (e.g., opportunity recognition and exploitation), and entrepreneurial performance (e.g., growth, innovation or social impact).

Audretsch et al. (2015) argue that any attempt to constrain the entrepreneurship concept into a single narrow view would not do justice to the multifaceted nature of the phenomenon. Thus, they propose an “eclectic paradigm” (Audretsch et al., 2015, p. 706) that combines

all three of the aforementioned dimensions as the most promising avenues for future scholarly work. Furthermore, they suggest that applying this paradigm to the context of less developed countries seems particularly fruitful, given the latter receive scant attention so far. The present dissertation follows this eclectic paradigm. As I lay out in the next subsection and as can be seen in Figure 1, all of the essays in this dissertation contribute to one or more of the aforementioned strands. Furthermore, they all focus on entrepreneurship in emerging markets.

Against this background, it is crucial to understand what the emerging market concept entails and which literature it ties into. The term emerging markets was originally coined by World Bank economist Antoine Van Agtmael in 1981 to make less developed countries more attractive to Western investors (The Economist, 2017). Since then, the concept has been added to the canon of management and entrepreneurship literature. Emerging markets are often characterized as economies with underdeveloped market institutions, but a dynamic pace of change and high rates of economic growth (Hoskisson et al., 2000; Gao et al., 2017). The term tends to refer to countries in Asia, Latin America, Africa and the Middle East.

Today, emerging markets and developing countries account for almost 60% of global gross domestic product (GDP) and 86% of the world population (IMF, 2023). Countries like China, India, Brazil and Mexico are among the largest and most populous economies in the world. This represents a dramatic shift in the global economic order within the last decades (Hopewell, 2017; Nölke et al., 2015; O'Neill, 2001). Entrepreneurial activity plays an important role in emerging markets' economic transformation (Bruton et al., 2008; Coulibaly et al., 2018; Urbano et al., 2020). Multinational enterprises (MNEs) from emerging markets make up a growing share of the Fortune Global 500 (Moghaddam et al., 2014). Furthermore,

emerging markets represent progressively important revenue sources for MNEs from advanced economies (WEF, 2023).

Thus, expanding scholarly attention to entrepreneurship in emerging markets is an imperative to accurately capture the economic reality most entrepreneurs and businesses face. However, as various systematic literature reviews show, the majority of entrepreneurship papers still focus on advanced economies (Bruton et al., 2008; Cao & Shi, 2021; Kiss et al., 2012). Furthermore, existent entrepreneurship research in emerging markets primarily considers geographic locations like China and India, while regions like Africa are still neglected (Inkizhinov et al., 2021). In their systematic literature review Kolk and Rivera-Santos (2018) note that Africa-focused research is almost entirely absent from top entrepreneurship journals in the period considered. There are numerous calls for research on Africa by prestigious outlets in the management field (e.g., George, Corbishley et al., 2016; Walsh, 2015).

Scholars have stressed the importance of context for theory development (Tsui, 2007; Zahra et al., 2014). Theories suitable for developed economies may not necessarily translate to emerging market settings (Bruton, Filatotchev et al., 2013; Shirokova et al., 2022). Thus, empirically exploring emerging markets may allow to test and adapt existing theories to better explain local phenomena, or extend and develop new theories that could be universally applicable (Bruton et al., 2022; Filatotchev et al., 2022). Africa-specific research could “serve as the basis for new theories and perspectives” (Barnard et al., 2017 , p. 468), given its unique institutional context.

Emerging markets are often associated with institutional challenges. Institutions are the “humanly devised constraints that structure political, economic and social interaction” (North, 1991, p. 97). Emerging markets are subject to institutional voids, that is, fewer market-enabling institutions such as the lack of intermediaries or legal enforcement

mechanisms (Khanna & Palepu, 1997; Khanna et al., 2005; Webb et al., 2010). As a consequence, they tend to have higher transaction costs than advanced economies, complicating business operations (Khanna & Palepu, 2000). Therefore, institutional theory often appears suitable to explain entrepreneurial activities in emerging markets (Bruton et al., 2008; Puffer et al., 2010). Simultaneously, empirical studies on emerging markets are well placed to enrich institutional theory with context-specific insights (Tsui, 2007). This also raises the relevance for strategies that businesses use to navigate these institutional conditions. Thus, adjacent theories like the literature on network ties (Khavul et al., 2009; Puffer et al., 2010) and signaling (Bellavitis et al., 2019; Connelly et al., 2011) are also relevant.

While earlier work on institutional voids primarily views them as impediments that businesses need to overcome (e.g., Khanna & Palepu, 1997), later research acknowledges the business opportunities they can create (Mair & Marti, 2009; Mair et al., 2012). Entrepreneurs could exploit institutional voids by establishing their own solution as a commonly accepted standard (Tracey & Phillips, 2011). This ambiguous effect of institutional voids on entrepreneurial activity is explored throughout most essays in this dissertation.

Mobile money in Kenya is one prominent example of institutional voids as an opportunity (Onsongo, 2019). Mobile money allows users to send, receive and save money via simple feature phones (Suri, 2017). Providers of such financial technology (fintech) solutions exploit the fact that many people in Africa are unbanked, a void in local capital markets (Onsongo, 2019). Today, mobile money has become ubiquitous in Kenya as it is used by 96% of households and has lifted about 2% of households out of extreme poverty (Suri & Jack, 2016). This success has spawned a dynamic entrepreneurial ecosystem of fintech startups in Africa and has attracted significant investor interest (Molla & Biru, 2023). The mobile

money revolution and its impact on innovative entrepreneurship in Africa has motivated most essays in this dissertation.

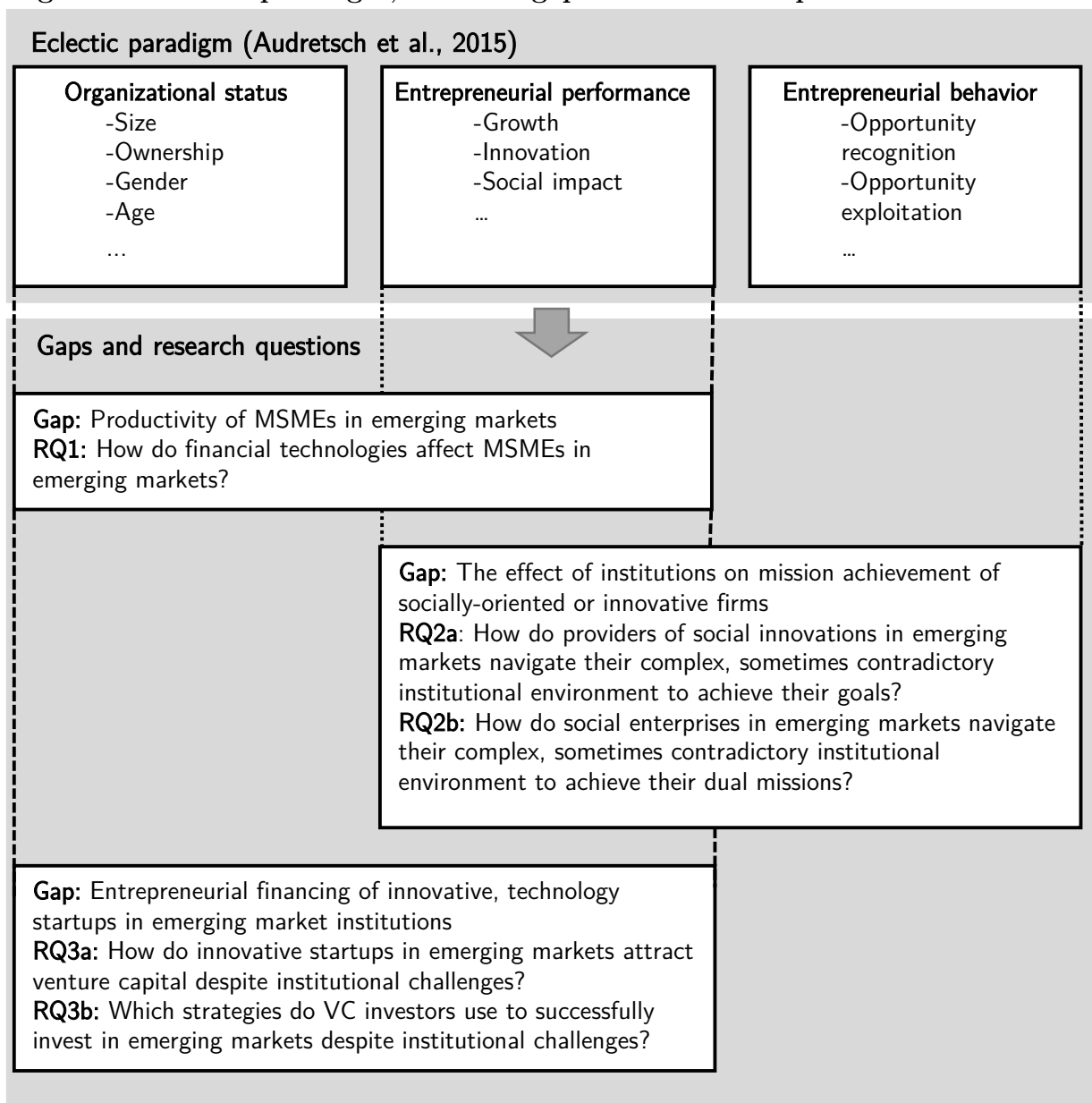
This ties directly into the general discussion around the interaction between entrepreneurship in emerging markets and technologies. Much of the entrepreneurship research in emerging markets seems to revolve around small and medium enterprises (Khavul et al., 2009; Khayesi et al., 2014), the strategies of large Western MNEs (Ma & Delios, 2010; Rathert, 2016), or strategies of local business groups (Ayyagari et al., 2015; Khanna & Palepu, 2000). Recently, a literature on frugal innovation has emerged, that is, technological solutions suited for resource-constrained environments that are cheap and targeted towards underserved consumers (Hossain et al., 2016). However, frugal innovations are frequently perceived as stripped-down versions of technology in advanced markets (Dabić et al., 2022). The possibility of cutting-edge technology solutions developed by startups from emerging markets are barely considered. Some researchers have therefore proposed the term ‘social innovation’ as it is less focused on the technological nature of the innovation and rather on its benefits for disenfranchised populations (George et al., 2012). This raises the question how the interaction between entrepreneurship and such innovations contributes to overall sustainable development in emerging markets (Acs et al., 2008).

In this sub-chapter, I have laid out my definitions of the concepts investigated in this dissertation. I define entrepreneurship as a process that involves one or more of the three dimensions proposed by Audretsch et al. (2015). Throughout the essays in this dissertation the terms enterprise, business, startup or firm are used interchangeably, depending on the particular nature of the investigated entities and the exchange with reviewers. Meanwhile, entrepreneurs refer to the individuals who found or run those enterprises as owner-managers.

I also demonstrate various streams and gaps in the management and entrepreneurship literature to which the present dissertation strives to contribute. All essays fit into the

eclectic paradigm of entrepreneurship laid out above. The dissertation will focus on entrepreneurship in emerging markets with a particular (yet not exclusive) regional focus on Africa. Furthermore, the interaction between entrepreneurship and innovation and its potential contribution to sustainable development in emerging markets will receive particular attention. Figure 1 visualizes the framework used in this dissertation by mapping the eclectic paradigm to other gaps in the literature to which this dissertation seeks to

Figure 1: Eclectic paradigm, research gaps and research questions



contribute. In the subsequent sub-section, I will derive the dissertation's overarching research questions and demonstrate how they contribute to the discussions reviewed above.

1.2 Research Questions

Micro, small and medium enterprises (MSMEs) play a particularly important role in emerging markets (Jamali et al., 2017; World Bank, 2023). In Africa, informal family firms are estimated to account for up to 65% of the economy (Medina et al., 2017). Such informal firms are typically small and unproductive, significantly dragging down their owners' economic prospects (La Porta & Shleifer, 2014). This productivity drag on MSMEs is primarily related to the challenging institutional environments in emerging markets (Harrison et al., 2014; Webb et al., 2010). As a consequence, MSMEs in emerging markets are more affected by transaction costs than their counterparts in advanced economies (Gao et al., 2017; Khanna & Palepu, 2000; Hoskisson et al., 2000).

Prior research finds that social innovations have reduced transaction costs for individual consumers. For example, agricultural information systems have reduced transaction costs for farmers in Africa (Howell et al., 2018). Furthermore, affordable mobile phones and related fintech innovations have reduced transaction costs that consumers in emerging markets are exposed to (Aker & Mbiti, 2010; Jack & Suri, 2014). Thus, such innovations may also have the potential to reduce transaction costs for MSMEs, and therefore a sizeable fragment of firms in emerging markets, and boost their performance and ultimately productivity (Islam, A. et al., 2018). In this context, firm productivity denotes the efficiency with which a firm can generate sales or value-add. Hence, it is typically measured in sales or value-add per worker (Islam, Palacios Lopez, & Amin, 2019). Against this background, this dissertation poses the following overarching research question:

RQ1: How do financial technologies affect MSMEs in emerging markets?

This question is concerned with organizational status (i.e., firm size) and organizational performance (e.g., transaction costs and productivity) from Audretsch et al. (2015). Therefore, it combines various of the important elements of entrepreneurship mentioned above.

Closely related, entrepreneurship is increasingly viewed as a solution to poverty in emerging markets (Bruton, Ketchen, & Ireland, 2013). This underlines the role of social entrepreneurs, who provide solutions to environmental or social issues while simultaneously pursuing commercial goals (Zahra et al., 2009). Thus, a growing number of social entrepreneurs seek to make a positive impact by tackling institutional voids (El Ebrashi & Darrag, 2017). Therefore, institutional voids are increasingly viewed as business opportunities rather than impediments, as they allow enterprises to establish their own institutional solutions as commonly accepted standards (Tracey & Phillips, 2011). This includes the providers of some of the aforementioned fintech innovations like mobile money, which rely on institutional voids for their business model (Onsongo, 2019). Prior research on mobile money mostly considered its effect on consumers (Suri & Jack, 2016), while its effect on firms and the success factors for providers remain underexplored (Islam, A. et al., 2018; Suri, 2017).

However, the effect of institutional voids on social enterprises in emerging markets remains inconclusive. The institutional void perspective suggests that the latter are beneficial for social enterprises (e.g., Estrin et al., 2013; Mair & Marti, 2009). Meanwhile, the institutional support perspective proposes that a supportive institutional environment is crucial for social enterprises to succeed (Beule et al., 2020; Stephan et al., 2015). Exploring social enterprises in emerging markets or providers of technological innovations that strive to span institutional voids is ideally suited to shed further light on these opposing effects. These investigations touch upon multiple dimensions of the eclectic paradigm by Audretsch et al.'s (2015), in particular on performance (innovation and social impact) and entrepreneurial

behavior (opportunity recognition and exploitation). Hence, the dissertation poses the following two interrelated research questions:

RQ2a: How do providers of social innovations in emerging markets navigate their complex, sometimes contradictory institutional environment to achieve their goals?

RQ2b: How do social enterprises in emerging markets navigate their complex, sometimes contradictory institutional environment to achieve their dual missions?

One of the largest challenges posed by institutional voids is access to finance. Capital market voids are a major business impediments in emerging markets (Khanna & Palepu, 2000). Well-functioning market systems typically possess specialized intermediaries and contract enforcing mechanisms that reduce transaction costs and encourage investment (Coase, 1937; Khanna et al., 2005; North, 1991). In emerging markets the absence of credible exchange commissions or sufficiently enforced accounting standards create informational asymmetries between enterprises and investors (Khanna et al., 2005). As a result, investors may be reluctant to invest and enterprises may struggle to raise funds, which is why many emerging markets have narrow capital markets, especially for smaller enterprises (Webb et al., 2010).

Capital market voids are even more challenging for innovative startups such as fintech providers. Even in advanced economies, innovative technology startups often struggle with raising funds through conventional sources like banks (Gompers & Lerner, 2001). As a result, they rely on venture capital (VC) funding. However, in emerging markets, and Africa in particular, access to bank financing is even more difficult (Beck & Demirgüç-Kunt, 2008; Fowowe, 2017; Harrison et al., 2014). Therefore, fintech companies such as the providers of mobile money services are even more reliant on VC. Yet, local VC markets are still frequently underdeveloped (Bustamante et al., 2021; Groh & Wallmeroth, 2016). Therefore,

startups from emerging markets may be more dependent on raising funds from foreign investors (Hain et al., 2016.; Khurshed et al., 2020).

These capital market voids in emerging VC markets can be considered from two perspective. First, the strategies that startups can use to navigate their funding constraints and raise VC funding in emerging markets seem worth considering. There exists a surprisingly small amount of research on such strategies. Most such papers focus on signaling and leveraging networks ties to raise VC focus on advanced economies (e.g., Islam, M. et al., 2018; Plummer et al., 2016). While there exist a few notable exceptions that focus on VC fundraising by startups in emerging markets (e.g., Stuart & Wang, 2016), the topic remains underexplored and to the best of my knowledge hitherto no such papers focus on Africa. Given emerging markets' drastically different institutional environment further research on strategies for attracting VC seem salient.

The second perspective involves VC investors which operate in emerging markets. However, most such research involves quantitative assessments of investment strategies in emerging markets (e.g., Liu & Maula, 2021; Liu et al., 2021; Zheng & Xia, 2018) and essentially treat the actual decisions of VC investors as a black box. Prior qualitative work on such VC investor decisions go back to Ahlstrom and Bruton (2006). However, such work has barely been replicated since. Furthermore, most of the research on the perspective of VC investors in emerging markets focusses on Asia. Africa and other regions are barely explored (see Espinoza Trujano & Phiri, 2022 for an exception). These deliberations tie into angles based on performance (innovation, growth) and status (teams, young firms) according to the eclectic paradigm.

These previous paragraphs raise a two-fold, interrelated research question that considers both of the aforementioned perspectives of VC in emerging markets.

RQ3a: How do innovative startups in emerging markets attract venture capital despite institutional challenges?

RQ3b: Which strategies do VC investors use to successfully invest in emerging markets despite institutional challenges?

In summary, this dissertation’s goal is to investigate how enterprises and related actors (like venture investors) interact with their institutional environment in emerging markets, while paying particular attention to how enterprises leverage technologies. Figure 1 (p.6) links the topics discussed in the previous sub-section with the research questions that I have just presented. In the following sub-section I will introduce the structure of this dissertation and outline how each essay addresses the mentioned research questions.

1.3 Dissertation Structure and Contributions

The present dissertation consists of seven chapters as outlined in Figure 2. The introduction is followed by five independent studies (essays), representing a chapter each, and a concluding discussion in Chapter 7. All studies are empirical and address at least one of the aforementioned research questions. Studies 1 to 4 have all gone through a scholarly peer review process, either as final publications in peer reviewed academic journals (Studies 1 and 2) or as accepted conference papers that are currently under review in peer reviewed academic journals (Studies 3 and 4). Study 5 is a single-authored working paper, while all other essays have been co-authored.

The first study is entitled “*Evaluating the Effect of Mobile Money on Firm Productivity in Africa: A Comparison of the Formal and Informal Sectors*”. It aims to address RQ1 by empirically investigating the effects of mobile money on African firms. Prior research suggests that mobile money increases firm investment (Islam, A. et al., 2018) and innovativeness (Lorenz & Pommet, 2020). However, the effect on firm productivity remains

inconclusive (Gosavi, 2018; Islam, A. et al., 2018). My co-author and I fill this gap by analyzing 1,499 informal and 994 formal MSMEs in Mozambique, Zambia and Zimbabwe.

Figure 2: Dissertation structure

Chapters	Title	Research Questions
1	Introduction	
2	Study 1: Evaluating the Effect of Mobile Money on Firm Productivity in Africa	RQ1: How do financial technologies affect MSMEs in emerging markets?
3	Study 2: Institutional and firm-level factors for mobile money adoption in emerging markets	RQ2a: How do entrepreneurs in emerging markets navigate their institutional environment to achieve their goals?
4	Study 3: Cutting a pathway through the jungle: social entrepreneurs' navigation in complex institutional environments	RQ2b: How do social enterprises in emerging markets navigate their complex, sometimes contradictory institutional environment to achieve their dual missions?
5	Study 4: Venture Capital Funding In The African Context – A Mixed Method Study Of Evolving Ecosystems And Financial Discrimination	RQ3a: How do innovative startups in emerging markets attract venture capital despite institutional challenges?
6	Study 5: Venture Capital in Africa: Bridging Clashing Institutions and Colonial Legacies	RQ3b: Which strategies do VC investors use to successfully invest in emerging markets despite institutional challenges?
7	Concluding discussion	

We do so by combining a multivariate regression analysis with a qualitative comparative analysis (QCA). This allows us to estimate the net effects of mobile money on firm productivity, while exploring under which combinations of firm, founder, and institutional conditions mobile money is associated with higher productivity.

We find a positive and statistically significant relationship between mobile money use and labor productivity of informal firms, while the effect disappears for formal firms, once all controls are accounted for. The effect is also stronger for female-led firms than for male ones. Our QCA further reveals that founders' education, firms' location, their sector, and their use of bank accounts are important criteria affecting potential benefits from mobile money. We make three contributions. First, we make a theoretical contribution by tying into the institutional literature as we explain which firms could benefit most from mobile money through the use of transaction cost theory (Jack & Suri, 2014; North, 1991). Second, we make an empirical contribution by demonstrating that the right use of technology can have productivity-enhancing effects on African firms, with potential benefits for economic development (Nguimkeu & Okou, 2021). Third, we join a number of studies which combine regression analysis and QCA (e.g., Meuer et al., 2015; Veríssimo, 2018) and highlight the additional insights that each method provides.

Study 2 is entitled “*Institutional and Firm-level Factors for Mobile Money Adoption in Emerging Markets—A Configurational Analysis*”. It considers the interaction between firms and mobile money from a different perspective than in Essay 1. It strives to address RQ2 by exploring how providers of mobile money services navigate their institutional environment to achieve high adoption rates. Mobile money's business opportunity fundamentally relies on institutional voids as 1.7 billion people globally remain unbanked (Demirgüç-Kunt et al., 2018; Evans & Pirchio, 2014; Onsongo, 2019). At the same time, prior research suggests that providers rely on institutional prerequisites like good network infrastructure (David-West et al., 2018; Muto & Yamano, 2009), appropriate regulation (Aron, 2017), and sufficient levels of education in local markets (Munyegera & Matsumoto, 2016). Therefore, the effect of institutions on adoption rates is ambiguous. Furthermore,

firm-level factors like firm type (Evans & Pirchio, 2014), agent coverage (Suri, 2017) and service scope (GSMA, 2019b) also appear relevant.

My co-author and I explore this setting through a QCA of 110 mobile money services in 46 emerging markets. We find four recipes associated with high adoption. Based on these findings we propose a model that allows providers of social innovations to assess their likelihood of achieving high adoption rates. They should ideally ensure the right institutional mix in their target markets of relatively underdeveloped financial markets and sufficiently enabling institutions like regulation, infrastructure, and education. We make an empirical contribution by unveiling paths to high mobile money adoption through a QCA of a larger number of providers with potential managerial implications. We theoretically contribute to the discussion around the effect of institutional voids on firm outcomes for providers of social innovations (Beule et al., 2020; Estrin et al., 2013; Stephan et al., 2015).

Study 3 contributes to a similar theoretical discussion and is entitled “*Cutting a Pathway Through the Jungle: Social Entrepreneurs’ Navigation in Complex Institutional Environments*”. Social entrepreneurs activities are influenced by their institutional environment (Hoogendoorn, 2016 ;Pache & Santos, 2010; Pache & Santos, 2013). Social entrepreneurs in emerging markets are exposed to formal institutional voids (Mair & Marti, 2009). Consequently, informal institutions are all the more important, potentially exposing social entrepreneurs to clashes between formal and informal institutional requirements (Bjerregaard & Luring, 2012; Mair et al., 2012). Therefore, social enterprises in emerging markets are exposed to significant institutional complexity (Cherrier et al., 2018). Furthermore, the aforementioned institutional voids (Estrin et al., 2013) and institutional support perspectives (Stephan et al., 2015) consider mainly the meso- and macro-level. Therefore, my co-authors and I follow calls for more research on the micro-foundations of entrepreneurs’ interaction with institutions (Harmon et al., 2019; Schilke, 2018).

We investigate how social entrepreneurs deal with their complex institutional environment through a qualitative, abductive analysis of 31 semi-structure interviews with social entrepreneurs in East Africa. We make a theoretical contribution as our findings transcend the duality of the discussion surrounding the institutional void vs institutional support perspective in the entrepreneurship literature. We argue that by taking on a micro lens research can move beyond an either-or perspective and illustrate how social enterprises navigate simultaneous, seemingly contradictory institutional effects on their mission.

Study 4 is entitled “*Venture Capital Funding In The African Context – A Mixed Method Study Of Evolving Ecosystems and Financial Discrimination*”. It was inspired by the results of Study 2 which suggested that mobile money providers with low adoption rates largely consisted of African fintech startups without the necessary financial means to scale. This raised the question how such fintech startups in Africa could raise funds to finance their growth. In recent years, international VC investors have recognized the potential of African technology startups, as aggregate VC investments on the continent have increased to almost US-\$ 5 billion (Partech, 2023). However, anecdotal evidence suggests that non-African founding teams are overrepresented among Africa-focused startups with large funding amounts (Madowo, 2020; Musse, 2020).

My co-author and I investigate this phenomenon by combining an inductive analysis of 37 semi-structured interviews with VC investors or startups and a QCA of 335 fintechs in Africa. We make an empirical contribution by demonstrating that in early stages, Africa’s VC market was indeed dominated by non-African teams, suggesting financial discrimination of African teams. However, as the market evolves, more paths to funding become available to Africans. We also make a theoretical contribution by combining institutional theory (e.g., Khanna & Palepu, 1997) with the literatures on configurational approaches to VC funding determinants (e.g., Bapna, 2019; Plummer et al., 2016) and investors’ homophily preferences

(Bengtsson & Hsu, 2015; Hegde & Tumlinson, 2014) to explain why the institutional conditions in Africa make inadvertent financial discrimination more likely.

Study 5 also revolves around the VC market and is entitled “*Venture Capital Investing in Africa: Bridging Clashing Institutions and Colonial Legacies*”. It addresses the perspective of VC investors who operate in Africa. As Study 4 suggests, investor biases are more likely to emerge in Africa’s particular institutional environment. Therefore, I posit that investigating the individual strategies that VC investors use to successfully operate in Africa is crucial. Prior research on strategies of VC investors in emerging markets overwhelmingly focus on Asia and use quantitative methods to evaluate the effect of investment approaches on successful exits (Bruton & Ahlstrom, 2003; Khavul & Deeds, 2016; Zheng & Xia, 2018). Meanwhile, concrete decisions and deliberations of VC investors in emerging markets often remain a black box. Furthermore, to the best of my knowledge there exist no prior, in-depth studies on strategies of VC investors in Africa.

I address this gap by extending Ahlstrom and Bruton’s (2006) qualitative approach for Asia to the African context. Following Timmermans and Tavory (2012), I use a qualitative, abductive analysis of 27 in-depth interviews with VC investors in Africa. I make an empirical contribution with practical implications by working out three institutional dimensions that complicate VC investors’ operations in Africa, and propose four strategies to remediate these challenges. I also make a theoretical contribution by enriching institutional theory (e.g., Khanna & Palepu, 1997; Puffer et al., 2010; Tracey & Phillips, 2011) with insights from post-colonial literature (Apata, 2019; Kvangraven et al., 2021; Nothias, 2020). As in Study 4, many of the institutional challenges faced by VC investors in Africa are rooted in persistence power imbalances stemming from Africa’s colonial legacy (Odijie, 2022). This combination increases the explanatory power of institutional theory in the African context.

The focus on entrepreneurial activity in emerging markets, their institutional context, and institutional theory as an explanatory approach runs as a common thread throughout all studies in this dissertation. Furthermore, most studies contain a fintech element, either as a use case (Study 1), by focusing on fintech providers (Studies 2 and 4), or firms who invest in fintech (Study 5). In addition, while the studies offer insights for emerging markets in general, all studies bar Study 2 have an overwhelming focus on the African context. Therefore, this dissertation sheds light on a frequently neglected context. In addition, all studies contribute to one or more of the dimensions of Audretsch et al.'s (2015) eclectic paradigm.

Throughout all studies, I employ methods that allow for an explorative approach, given the novelty of many of the questions reflected in this dissertation. A particular focus lies on QCA, a method that is increasingly used in entrepreneurship research, especially in institutionally complex contexts (e.g., Decker et al., 2020; Fiss, 2011). This allows us to harness both the explorative benefits of qualitative methods with the more structured application of concepts to large samples offered by quantitative analyses (Greckhamer et al., 2018). Table 1 gives another detailed overview of each study's publication status, co-authors, methods, data, and my relative contribution. The following chapters consist of the individual studies and will be followed by a concluding discussion in the end.

Table 1: Detailed overview of studies

Title	Co-author(s)	Relative contribution	Method	Status
Study 1 (Chapter 2): Evaluating the Effect of Mobile Money on Firm Productivity in Africa	Jakob Roessling	80%	QCA and regression analysis	Published as Kabengele, C. & Roessling, J. (2022). Evaluation the Effect of Mobile Money on Firm Productivity in Africa: A comparison of the Formal and Informal Sectors. <i>Journal of Developmental Entrepreneurship</i> , 27(2), 1-33
Study 2 (Chapter 3): Institutional and firm-level factors for mobile money adoption in emerging markets	Rüdiger Hahn	80%	QCA	Published as Kabengele, C. & Hahn, R. (2021). Institutional and Firm-level Factors for Mobile Money Adoption in Emerging Markets – A Configurational Analysis. <i>Technological Forecasting & Social Change</i> , 171, 120934
Study 3 (Chapter 4): Cutting a pathway through the jungle: social entrepreneurs' navigation in complex institutional environments	Felix Ostertag; Carolin Waldner; Emiel Eijdenberg	25%	Qualitative	Accepted and presented at EGOS 2021, accepted to AOM 2021
Study 4 (Chapter 5): Venture Capital Funding In The African Context – A Mixed Method Study Of Evolving Ecosystems And Financial Discrimination	Rüdiger Hahn	80%	QCA and qualitative	Accepted and presented at QCA paper development workshop 2020, WK Nama 2021, VHB Jahrestagung 2022, currently under review in <i>Journal of International Business Studies</i>
Study 5 (Chapter 6): Venture Capital in Africa: Bridging Clashing Institutions and Colonial Legacies	-	100%	Qualitative	Working paper

2. Evaluating the Effect of Mobile Money on Firm Productivity in Africa: A Comparison of the Formal and Informal Sectors¹

Co-authored with Jakob Roessling

Abstract

We explore the relationship between firms' mobile money use and their productivity using a sample of 994 formal and 1,499 informal, predominantly micro-, small- and medium firms from Zambia, Mozambique and Zimbabwe. Our findings reveal a positive and statistically significant relationship between mobile money use and labor productivity for informal firms. The effect also appears to be stronger for female-led than for male-led informal firms, suggesting that mobile money could be a valuable tool to promote gender equity in Africa's informal sector. In contrast, for formal firms, the effect vanishes once all relevant controls are accounted for. Thus, for formal firms, mobile money may be insufficient to overcome the impediments of their business environments in Africa. Further, a complementary fsQCA reveals configurations of conditions that appear important for informal firms to truly benefit from the productivity enhancing potential of mobile money. The combination of founders' education, firms' location, their sector and their use of traditional bank accounts appear particularly crucial. The fsQCA findings give additional nuance to our regression results. Overall, our findings suggest that firms more exposed to transaction costs benefit more from mobile money.

Keywords: Africa, mobile money, informal sector, fuzzy-set qualitative comparative analysis (fsQCA), regression analysis, mixed methods.

¹ Published as: Kabengele, C. & Roessling, J. (2022). Evaluating the Effect of Mobile Money on Firm Productivity in Africa: A Comparison of the Formal and Informal Sectors. *Journal of Developmental Entrepreneurship* 27(2). <https://doi.org/10.1142/S1084946722500091>

2.1 Introduction

Mobile money allows underbanked people to transfer, save and borrow money through their mobile phones without needing a bank account (Suri, 2017). It uses technology installed on a phone's SIM card, does not require a smartphone or internet connection, allows for accounts to be easily opened and agent networks are extensive (Jack & Suri, 2014; Suri, 2017). This makes mobile money very accessible for unbanked populations. Mobile money is particularly prominent in Africa, with significant potential benefits when it comes to financial inclusion and poverty alleviation (Suri & Jack, 2016). A growing literature about the effects of mobile money on firm outcomes in Africa has emerged in recent years (see e.g., Gosavi, 2018; Islam, A. et al., 2018; Beck et al., 2018; Lorenz & Pommet, 2020). This research has demonstrated that mobile money can have a positive effect on firm performance—for example, by increasing firm investment (Islam, A. et al., 2018) or firm innovativeness (Lorenz & Pommet, 2020). This raises the question as to whether mobile money can contribute to the alleviation of a major problem for private sector development in Africa: firm productivity.

African firms tend to be less productive than their global peers (e.g., Harrison et al., 2014). This is mainly driven by a challenging business environment, unfavorable institutions, insufficient infrastructure and financial constraints (Bokpin et al., 2018; Dethier et al., 2011; Faruq et al., 2013; Moyo, 2013). Africa's extraordinarily large informal sector also contributes to these problems (Medina et al., 2017). Low firm productivity, in turn, may present a drag on the continent's overall economic growth (Bah & Fang, 2015). Prior literature shows that information and communication technology can have a positive effect on firm productivity (e.g., Donati & Sarno, 2013). Thus, researchers argue that the same could apply to mobile money (Gosavi, 2018; Islam, A. et al., 2018).

We use transaction cost theory to explain the association between the use of mobile money and firm productivity (e.g., North, 1991; Jack & Suri, 2014; Williamson, 1979). Emerging markets, such as most African economies, are subject to institutional voids that expose firms to transaction costs (Khanna & Palepu, 1997, 2000). Mobile money may reduce firms' transaction costs by reducing travel cost and losses from crime, lowering frictions and saving time, thereby increasing firm productivity (Aron, 2018; Islam, A. et al., 2018; Jack & Suri, 2014). However, the association between firms' use of mobile money and their productivity is still poorly understood. So far, empirical studies on the association are inconclusive, with some studies finding an association (e.g., Gosavi, 2018; Perekwa et al., 2016) and others not finding one (e.g., Islam, A. et al., 2018). Further, to the best of our knowledge, there are no studies comparing mobile money's potential effect on productivity for both formal and informal firms as well as male- and female-led firms by using comparable and representative data. We propose that the inconclusive results regarding mobile money's effect on firm productivity may be related to the fact most studies have exclusively considered formal firms. Instead, we argue that the relationship can be explained by adopting a configurational understanding of transaction cost theory (Furnari et al., 2020; Misangyi et al., 2017). Thus, the effect may depend on how strongly a firm is affected by transaction costs and, therefore, on the configuration between a firm's type, its characteristics, its manager's attributes and its business environment. Therefore, a more fine-grained and nuanced analysis might be required.

Against this background, we ask the following research questions: Is the use of mobile money positively associated with higher firm productivity, and if yes, under which conditions? We use a sample drawn from the World Bank Enterprise Survey (WBES) of 994 formal and 1,499 informal, mainly micro-, small- and medium-firms in Mozambique, Zimbabwe and Zambia to answer the research question. The data are analyzed through a mixed method

approach, combining a multivariate regression analysis with qualitative comparative analysis (QCA), a method that increasingly is being used in entrepreneurship research—especially in institutionally complex or innovation-related contexts (e.g., Dwivedi et al., 2018; Decker et al., 2020; Fiss, 2011; Greckhamer et al., 2018; Metaxas & Karagiannis, 2016). Regression analysis allows us to isolate the net-effect of mobile money use on firm productivity after controlling for relevant factors. Meanwhile, as a configurational method, QCA reflects the configurational nature of our theoretical arguments; therefore, it allows us to explore under which combination of firm, individual and institutional conditions mobile money use is associated with higher productivity.

We make three main contributions. First, we make an empirical contribution by demonstrating that, given the right combination of conditions, mobile money use can lead to higher firm productivity and thereby contribute to Africa’s private sector development. To the best of our knowledge, this is the first study to do so by also comparing mobile money’s potential effects on productivity across formal and informal, as well as male- and female-led firms. Second, we make a theoretical contribution by illustrating that a configurational understanding of transaction cost theories helps to explain the conditions under which mobile money could lead to an increase in firm productivity. Third, we join a small but growing literature highlighting how a combined application of regression analysis and fsQCA can complement each other and add more nuance to each methods’ respective findings.

2.2 Literature Review

2.2.1 Background on Mobile Money

Mobile money distinctly differs from mobile banking or other digital financial services (e.g. Apple pay), because it does not require customers to have a bank account (Aron, 2018). Users simply register their SIM card with a provider and an electronic wallet is created

(Suri, 2017). Providers typically operate a large number of mobile money agents, which often consist of small corner stores or kiosks (Suri, 2017). This enables much broader coverage than conventional bank branches. Once users deposit cash with an agent, an equivalent amount of electronic money will be credited to their electronic wallets (Suri, 2017). They can then transfer funds to another user who can in-turn withdraw the money (Suri, 2017). Mobile money uses the mobile network and requires no internet connection or expensive smartphone (Suri, 2017). Instead, affordable feature phones suffice. Initially, mobile money focused mainly on peer to peer transfers (GSMA, 2019b). However, in recent years, providers increasingly have offered more sophisticated use cases such as international remittances, bulk disbursements, merchant payments, bill payments, saving products, microloans and even insurances (e.g., GSMA, 2019b).

2.2.2 Prior Research on Mobile Money

To date, research on mobile money has concentrated primarily on its benefit for consumers. Most notably, Suri and Jack (2016) demonstrated that mobile money lifted approximately two percent of Kenyan households out of poverty by increasing savings and fostering female entrepreneurship. Mobile money also allows users to share risks more efficiently because of the associated reduction of transaction costs (e.g., Blumenstock et al., 2016; Jack & Suri, 2014). In Tanzania, for example, mobile money users averted drops in their consumption after natural disasters through remittances (Riley, 2018).

Recently, a still small but emergent literature has focused on mobile money's effect on firms (Beck et al., 2018; Gosavi, 2015, 2018; Islam, A. et al., 2018; Lorenz & Pommet, 2020). Islam, A. et al. (2018) demonstrate that the use of mobile money is associated with more firm investment. In a follow-up study, Islam and Muzi (2022) showed that this is particularly true for female-owned firms in Africa. In a similar vein, Gosavi (2018) illustrates that firms using mobile money have a higher probability of obtaining loans. Similarly, Lorenz and

Pommet (2020) find that mobile money contributes to firms' innovativeness by relaxing their credit constraints. Mobile money may also boost entrepreneurial growth and sales by alleviating transaction frictions between firms and their suppliers, increasing the efficiency of supply chains and reducing the effect of crime (Beck et al., 2018; Horne et al., 2015). However, only a few papers to date have rigorously investigated the relationship between mobile money and firm performance.

2.2.3 Mobile Money and Firm Productivity

The aforementioned findings also suggest that mobile money could have a positive effect on firm productivity, which is one of the most formidable challenges to Africa's private sector development. Harrison *et al.* (2014) demonstrate that African firms have significant productivity disadvantages compared to their global peers. This seems predominantly driven by Africa's unfavorable business environment in terms of infrastructure and access to finance (Harrison et al., 2014). Indeed, studies show that frequent power cuts significantly reduce African firms' productivity (Cole et al., 2018; Moyo, 2013). The same applies to financial access (Bokpin et al., 2018). For instance, Boermans and Willebrands (2018) demonstrate that financial constraints in Tanzania significantly hamper labor productivity of local enterprises. A poor institutional environment is a further impediment (Ajide, 2021). Faruq et al. (2013) show that poor bureaucratic quality and corruption reduce firm productivity in Ghana, Kenya and Tanzania.

This productivity drag is likely even stronger in Africa's particularly large informal sector, which in some countries can account for up to 65 percent of the economy (Medina et al., 2017). Informal enterprises are especially small and unproductive because of their inability to access the benefits associated with formality such as formal finance and public goods and their relatively uneducated owners (Benjamin & Mbaye, 2012; De Soto, 2000; La Porta & Shleifer, 2014). The business environment's drag on firm-level productivity may negatively

affect overall productivity and thereby economic growth on the entire African continent (Bah & Fang, 2015). Therefore, interventions that could increase firm productivity in Africa have large potential reverberations for the continent’s economic development.

Against this background, the literature on mobile money and firm performance has begun investigating the relationship between mobile money use and firm productivity. Indeed, Gosavi (2018) finds a positive relationship and argues this may be because of increased access to finance. However, at a ten percent significance level, the evidence is rather weak and Islam et al. (2018) find no such effect despite using the same data. Other empirical research that suggest a positive association between mobile money use and firm productivity suffers from a lack of randomized data or small sample sizes (e.g., Perekwa et al., 2016). Hence, the literature on mobile money and firm productivity is inconclusive. Furthermore, prior studies primarily investigated the relationship for formal rather than informal firms. We seek to contribute to this debate by bringing this question to a new data-set and using a unique combination of methods.

2.3 Theoretical Framework

We argue that transaction cost theory is suitable to explain how the use of mobile money could boost firm productivity. According to Williamson (1979), transaction costs arise from uncertainty, frequency and asset specificity. These factors increase informational asymmetries among market participants and possibly expose them to opportunism Williamson (1979). To hedge against opportunism, firms have to bear search, bargaining, monitoring and enforcement costs (Dahlman, 1979). In well-functioning market systems, institutions and specialized intermediaries reduce these transaction costs (North, 1991). This allows firms to redirect resources toward improving their productivity (Bjørnskov & Foss, 2013). However, emerging markets, such as most African economies, are subject to institutional voids; that is, they suffer from a lack formal institutions and infrastructure that

support markets (Khanna & Palepu, 1997, 2000; Webb et al., 2010). Because of the lack of independent monitoring, reporting standards, governance structures and judicial systems, the probability of opportunistic behavior like corruption and theft is higher (Gao et al., 2017; Hoskisson et al., 2000). Thus, firms in emerging markets are significantly more exposed to transaction costs.

On the consumer level, the usage of mobile money has already led to a reduction of transaction costs (Jack & Suri, 2014). This was mainly caused by a reduction of time-consuming travel costs that resulted from poor infrastructure and insufficient access to the banking sector (Aker & Mbiti, 2010; Jack & Suri, 2014). The same time saving benefit of mobile money could apply to firms (Islam, A. et al., 2018; Jack & Suri, 2014). Firms use mobile money to pay their employees, transact with customers, pay suppliers and store money digitally rather than holding cash (Gosavi, 2015; Higgins et al., 2012). Transaction costs are reduced by eliminating routes to and waiting times at banks and by speeding up payments and ordering processes (Islam, A. et al., 2018; Perekwa et al., 2016). The faster transfer of money could also result in higher cash flow rates and improve firms' liquidity (Bångens & Söderberg, 2011; Islam, A. et al., 2018), which they could use for productivity enhancements. Sales may be boosted because of increased efficiency of supply chains, which means firms have to spend less time searching for and negotiating with suppliers (Horne et al., 2015).

A particular benefit of mobile money is the reduced risk of theft (Aron, 2018; Gosavi, 2015; Jack & Suri, 2014; Perekwa et al., 2016). A user's electronic wallet is password protected and can be disabled in case of theft (Suri, 2017). In Africa, mobile money is often used in cities with high crime rates to safely store deposits (Economides & Jeziorski, 2017). This could be particularly beneficial for small, informal business without access to bank accounts.

Therefore, firms' use of mobile money likely reduces transaction costs in Africa, where the opportunity costs of holding cash are high (Economides & Jeziorski, 2017).

Mobile money may also reduce the informational asymmetry between business partners, which is caused by missing credit ratings, transfer histories and the lack of audits (Gao et al., 2017). Mobile money enables firms to build a verifiable transaction history, which may encourage suppliers or banks to extend credit (Gosavi, 2018; Islam, A. et al., 2018). This may allow firms to improve work efficiency, expand their product portfolio, acquire new customer groups and increase their overall productivity. Mobile money does not only allow existing trade to become more efficient, but also increases transaction volumes (Suri, 2017). This increases firms' sales potential. In summary, the combination of more efficient transactions, time savings, improvements in security, higher trust, higher transaction volumes and improved access to funds may reduce firms' transaction costs and boost their productivity. Hence, we posit that

H1: Firms that use mobile money are, on average, more productive than firms that do not.

Recently, a number of authors have called for more configurational conceptualizations of theories in entrepreneurship and management research that reflects the social reality that outcomes are rarely caused by a single but various variables simultaneously (Furnari et al., 2020; Misangyi et al., 2017). In a similar vein, we argue that the productivity drag on African firms crucially depends on the configuration of 1) their business environment (Harrison et al., 2014), 2) firm characteristics like size and formalization (La Porta & Shleifer, 2014) and 3) managers' individual attributes like education and gender (Islam, A. et al., 2018; Iversen et al., 2016). Against this background, we argue that firms' exposure to transaction costs in emerging markets also crucially depends on the configuration of these three factors. Thus, not all firms are equally affected by transaction costs. This view is supported by the literature on institutional voids, which illustrates that larger firms belonging to business

groups are better able to cope with institutional voids, because they can create internal capital, labor and product markets (Khanna & Palepu, 1997, 2000).

Similarly, we argue that informal firms are more exposed to transaction cost than formal ones. The informal sector plays a particularly crucial role in Africa (Medina et al., 2017; Williams & Kedir, 2017). Informal enterprises are not registered with local authorities; therefore, they operate in a country's informal economy. Hence, they are technically illegal but are generally perceived as legitimate by society (Webb et al., 2009). The stereotypical roadside food stall, repair shop, or kiosk comes to mind (Banerjee et al., 2007). Against this background, we argue that informal firms are more heavily exposed to transaction costs. First, informal firms tend to be significantly smaller than formal ones, often consisting only of the founders and their immediate family (La Porta & Shleifer, 2014). In line with the institutional voids literature, their size may expose them to more transaction costs, and unlike larger firms, they are unable to create internal markets (Khanna & Palepu, 2000). Furthermore, informal firms do not enjoy the same benefits as formal ones such as official sources of finance, contractual enforcement, or access to public infrastructure (De Soto, 2000; La Porta & Shleifer, 2014). In addition, informal enterprises may be significantly more time constrained because they often exist to complement their founders' income from more traditional wage labor or subsistence agriculture (Banerjee & Duflo, 2011). Hence, entrepreneurs are often unable to devote their entire time and energy to their business. Informal entrepreneurs also typically have significantly lower levels of education than their formalized counterparts (La Porta & Shleifer, 2014). Thus, mobile money use is likely to benefit informal firms more than formal ones. Although formal firms may often have at least some integrations into the financial sector (i.e., access to a traditional bank account), informal firms may not. Therefore, giving informal enterprises access to mobile money may help them better navigate the transaction costs they are exposed to. Thus, we posit that

through time saving, access to finance, and more efficient and credible transactions with customers and suppliers, the aforementioned effects of mobile money on informal firms' productivity are particularly strong. We posit:

H2.1: The positive effect of mobile money use on productivity is stronger for informal firms compared to formal ones.

Much of the same mechanisms may explain why mobile money could benefit female-led firms more. Female-led firms in Africa tend to be less productive than their male-led counterparts (e.g., Bardasi et al., 2011; Rijkers & Costa, 2012). There are various potential reasons for this. In a study that includes firms from over 94 mainly developing economies, Islam, Muzi, and Amin (2019) demonstrate that discriminatory gender institutions significantly reduce women's ability to become firm owners or top managers. For instance, in some African countries, women do not have the same rights to control property, which limits their ability to use it as collateral for obtaining business loans (Hallward-Driemeier & Gajigo, 2015). In Africa, female-led firms have more difficulties dealing with red tape, no access to finance and are more frequently exposed to harassment (Hallward-Driemeier, 2013). They are also more heavily affected by crime and power outages (Islam et al., 2020). Female-led firms also tend to be active in low productivity sectors and, particularly in Africa, exhibit lower levels of education and entrepreneurial training (Bardasi et al., 2011). Additionally, female entrepreneurs are more time constrained because they frequently have to balance the dual responsibilities of running a business and caring for their families (Babbitt et al., 2015; Venkatesh et al., 2017).

The aforementioned combination of formal and informal institutions makes the already challenging business environment in Africa even more unfavorable for female-led firms. As mentioned earlier, such institutional voids expose firms to transaction costs (Webb et al., 2010). This suggests that female-led enterprises in emerging markets are even more exposed

to transaction costs. They have less time to dedicate to their businesses, deal with more red tape, and have fewer means to operate efficiently. Therefore, we expect the transaction cost reducing benefits of mobile money and its ensuing productivity boost to be larger for female-led compared to male-led enterprises because the latter are more likely to have more mitigating mechanisms available to them. For some female entrepreneurs, it might be the first time they have agency over their own finances, which facilitates their business operations and saves time (Suri & Jack, 2016). Islam and Muzi (2022) show that the alleviation of such frictions through mobile money has already increased investment among female-owned firms. Furthermore, they can now leverage their personal networks much more effectively, whereas male-led firms may have more extensive informal networks in place (Islam, Muzi, & Amin, 2019). Consequently, we posit:

H2.2: The positive effect of mobile money use on productivity is stronger for female-led firms compared to male-led ones.

Generally, we expect the use of mobile money to be associated with higher productivity only in conjunction with other conditions on the level of individual entrepreneurs, firm characteristics and the business environment. For instance, prior research suggests that leveraging mobile money requires a certain level of education (Aron, 2018; Badran, 2017; Munyegera & Matsumoto, 2016). Further, firms that do not have access to bank accounts are likely to benefit more from mobile money. The same applies for firms located in more challenging business environments and, therefore, are exposed to more transaction costs (i.e., firms located in rural areas or are active in more unproductive sectors). Thus, complementary to the confirmatory approach laid out above, we argue that a more exploratory approach may help uncover some boundary conditions under which mobile money is associated with higher labor productivity.

2.4 Data and Method

2.4.1 Data

The World Bank's Enterprise Survey (WBES), which is regularly conducted in over 140 countries, was employed as a data source. It asks individual firms a variety of questions on their performance, owners, perception of the business environment and use of technologies like mobile money. The WBES standardized questionnaire and sampling approach makes it suitable for cross-country comparisons and is frequently used in entrepreneurship research (e.g., Bardasi et al., 2011; Harrison et al., 2014; Islam et al., 2020; Williams & Kedir, 2018). The WBES is usually conducted among formal enterprises, but occasionally also surveys informal enterprises. The World Bank defines enterprises as informal if they are not formally registered with their respective government authorities. The formal WBES is representative at a country-level because it uses stratified sampling that appropriately weights industry, size and location (World Bank, 2009). Naturally, collecting representative samples for informal, unregistered enterprises is much more difficult. The informal WBES resorts to stratified adaptive cluster sampling in major metropolitan areas (World Bank, 2017). Thus, the informal WBES is only representative at the city-level.

Against this background, the most recently available WBES data for Zambia, Mozambique and Zimbabwe was used to construct two cross-sectional, firm-level data sets for formal and informal firms respectively. The data were collected between 2017 and 2019.² Thus, the unit of analysis is the individual firms. Two distinct samples were generated because we seek to assess the effect of mobile money on the productivity of individual firms relative to their comparable peers. Given that informal and formal firms can differ, we only assess the effect of mobile money relative to firms in each respective sample. After eliminating missing values, the final sample consists of 1,499 informal firms, of which 451 are from Mozambique, 461

² Data is publicly available for all at <https://www.enterprisesurveys.org/en/enterprisesurveys>.

from Zimbabwe and 587 from Zambia. Furthermore, the sample contains 994 formal firms, of which 501 are from Zambia and 493 from Zimbabwe (formal data are unavailable for Mozambique).

Zambia, Zimbabwe and Mozambique are all located geographically proximate in Southeastern African and border one another. Zambia's and Zimbabwe's purchasing power parity (PPP) adjusted GDP per capita figures are comparable at c. 3,300 US Dollar (USD) in 2020. Mozambique is significantly poorer with a PPP adjusted GDP per capita of around 1,230 USD in 2020.³ Furthermore, Zambia, Zimbabwe and Mozambique have comparable levels of financial inclusion with 45.9, 55.3 and 41.7 percent respectively of the adult population having access to bank accounts.⁴ The countries partly share some overlap in terms of ethnic groups, and Zambia and Zimbabwe even share a very similar colonial history because both, at one point, were part of the British protectorate of Rhodesia.

Thus, there are three reasons for choosing these countries. First, they are the only African countries for which both formal and informal data on firms' mobile money use are available. Second, they are geographically and culturally proximate and the data were collected in temporally close years, which makes them more comparable. Third, only about 40 percent of the firms in our sample use mobile money, which leaves a large enough variation to estimate the effect of mobile money on productivity. We account for the remaining cross-country and regional variation by applying control variables to our regression model.

2.4.2 Measures Employed

The dependent variable in the regression model is labor productivity. For formal firms, labor productivity is measured as the logarithm of sales per employee in the last fiscal year before

³ GDP data available at <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?locations=ZM-MZ-ZW>.

⁴ Financial inclusion data available at <https://databank.worldbank.org/source/global-financial-inclusion>.

the survey. For informal firms, labor productivity is measured as the logarithm of sales per employee in the full month before the survey (see Amin & Islam, 2015; Gosavi, 2018; Islam, Palacios Lopez, & Amin, 2019 for similar measurements). To ensure comparability, the sales numbers are converted into International Dollars using the World Bank’s purchasing price parity conversion factor.⁵

The independent variable *mobile money* is the main explanatory variable and is a dummy variable that indicates whether a firm uses mobile money. It derives from a WBES question that asked each individual firm in our sample whether it used mobile money for its business operations.

The remaining independent variables are various control variables that plausibly affect a firm’s labor productivity, as indicated by existent literature on firm productivity and performance. They can be roughly categorized into four areas: a firm’s technology use, firm characteristics (like size and age), the owner’s or top manager’s personal characteristics and firms’ institutional business environment (including location).

It is plausible that firms’ use of technologies other than mobile money affects their willingness to adopt innovations and therefore, their productivity (e.g., Aker & Mbiti, 2010; Islam, A. et al., 2018). Thus, we consider a dummy variable that indicates whether firms use a bank account for their operations (*bank_{ij}*). Following Asiedu et al. (2013), we also approximate formal firms’ technological capabilities by considering a dummy variable that reflects whether firms possess websites (*website_{ij}*). The variable takes on 1 if this is the case and 0 otherwise. For informal firms, we consider whether they use the internet (*internet_{ij}*) for their operations (1 if yes, 0 if no).

⁵ See data here <https://data.worldbank.org/indicator/PA.NUS.PPP> .

Previous research proposes a variety of firm characteristics that could affect productivity. First, we control for a firm’s sector, because some sectors tend to be more productive (Islam, Palacios Lopez, & Amin, 2019; Islam et al., 2020). We also consider a firm’s age in years and its size expressed in number of employees (Amin & Islam, 2015). Both foreign ownership and export activity have been found to affect productivity (Engel & Procher, 2012; Esaku, 2021; Islam, Palacios Lopez, & Amin, 2019). For formal firms, foreign ownership share (*foreign_{ij}*), or the percentage of the firm owned by foreign nationals, is included. In addition, a dummy variable was included that captures whether firms engage in export activities (*export_{ij}*). Furthermore, a variety of studies have demonstrated that a firm’s management quality is an important determinant of its productivity (Bloom et al., 2010; Bloom et al., 2013). Thus, a dummy variable (*management_{ij}*) was included that indicates whether firms keep books on their operations as a proxy for informal firms’ management quality.

Owner or manager characteristics could also potentially influence a firm’s productivity. For informal firms the owner is practically always the manager because firms tend to be very small and are frequently run by a single individual. Based on prior literature (e.g., Amin & Islam, 2015; La Porta & Shleifer, 2014), we control for the owners’ age in years (*ownerAge_{ij}*), entrepreneurial experience in years (*ownerExp_{ij}*) and their education (*ownerEdu_{ij}*). The strength of owners’ network connections (*network_{ij}*) was also included and was approximated through a question that asked respondents whether they used friends or relatives as a means to finance their operations. Education is captured on an ordinal scale going from 1 (no education) to 5 (university education). For formal firms, we considered the experience of the firm’s top manager in years (*manExp_{ij}*). For both types of firms, we also considered the top manager’s gender by means of a dummy variable, which may affect firm productivity (Bardasi et al., 2011; Islam et al., 2020).

The last group of control variables considers the institutional business environment of firms (e.g., Harrison et al., 2014; Faruq et al., 2013). For formal firms, corruption ($corruption_{ij}$), access to electricity ($electricity_{ij}$) and access to finance ($finAccess_{ij}$) were captured through an ordinal scale that asked respondents how big of an obstacle each respective issue was to their operations. The scale goes from 1 (no obstacle) to 5 (very severe obstacle). Exposure to crime was captured by considering a dummy variable that took on the value 1 if the enterprise experienced any losses to crime and 0 otherwise. We also considered whether enterprises paid for security services (1 if yes, 0 otherwise) because businesses that did so were likely less affected by crime. Finally, a firm's region, city and country were controlled for.

2.4.3 Regression Design

To investigate the relationship between firms' use of mobile money and their productivity, a number of multivariate, log-linear regression models using ordinary least squares (OLS) estimators were specified, similar to Amin and Islam (2015), Islam *et al.* (2018); Islam, Palacios Lopez, and Amin (2019) and Gosavi (2018). We estimate two regression models. The model for formal firms is the following:

$$(1) \quad \log (Labor\ Productivity_{ij}) = \beta_0 + \beta_1 mobile\ money_{ij} + \beta_2 bank_{ij} + \beta_3 size_{ij} + \beta_4 website_{ij} + \beta_5 foreignOwn_{ij} + \beta_6 exports_{ij} + \beta_7 gender_{ij} + \beta_8 manExp_{ij} + \beta_9 corruption_{ij} + \beta_{10} electricity_{ij} + \beta_{11} crime_{ij} + \beta_{12} finAccess_{ij} + \beta_{13} industry_{ij} + \beta_{14} country_{ij} + \beta_{15} region_{ij} + \epsilon_{ij}$$

The second model for informal firms is as follows:

$$(2) \quad \log (Labor\ Productivity_{ij}) = \beta_0 + \beta_1 mobile\ money_{ij} + \beta_2 internet_{ij} + \beta_3 bank_{ij} + \beta_4 industry_{ij} + \beta_5 firmAge_{ij} + \beta_6 size_{ij} + \beta_7 management_{ij} + \beta_8 ownerAge_{ij} + \beta_9 ownerExp_{ij} + \beta_{11} ownerEdu_{ij} + \beta_{12} crime_{ij} + \beta_{13} network_{ij} + \beta_{14} paySec_{ij} + \beta_{15} country_{ij} + \beta_{16} city_{ij} + \epsilon_{ij}$$

Both models are similar with slightly different control variables because of different measurement approaches and available data for informal and formal firms, respectively (see prior subsection). However, in most cases, control variables are comparable proxies. The variables were drawn from each distinct sample and the samples were not pooled. In both cases, the dependent variable is the logarithm of *Labor Productivity_{ij}*, which is the labor productivity of the i^{th} firm in the j^{th} country. By using the logarithm, the dispersion is reduced and the model is adjusted for outliers. The main explanatory variable is *mobile money_{ij}*, which indicates whether i^{th} firm in the j^{th} country uses mobile money in its operations. Based on the hypotheses presented in the previous section, it is expected that the coefficient β_1 will be positive and statistically significant. In short, this approach allows us to evaluate whether individual firms that use mobile money are more productive than the peers that do not in their respective sample. The estimated coefficients for the formal and informal sample then allow us to compare the magnitude and significance of mobile money's effect on the productivity of informal and formal firms, respectively. Variations of the aforementioned models are used for robustness checks and analyses.

2.4.4 Qualitative Comparative Analysis

The regression analysis was complemented with a QCA, a set-theoretic method increasingly used in business and entrepreneurship research (e.g., Fiss, 2011; Furnari et al., 2020; Greckhamer et al., 2018; Metaxas & Karagiannis, 2016). Thus, we join a growing number of studies that integrate both methods (Meuer et al., 2015; Meuer & Rupietta, 2017; Veríssimo, 2018). Such mixed method approaches include a recent book by Charles Ragin, who developed the methodology in the 1980s (see Ragin & Fiss, 2017). QCA employs Boolean algebra to compare cases based on their (non)membership in so-called sets to uncover all combinations of conditions (i.e., configurations) that are sufficient for the emergence of an outcome of interest (Schneider & Wagemann, 2012). Set theoretically,

sufficiency denotes a subset relationship between a case's membership in both the outcome and conditions (Schneider & Wagemann, 2012). It implies that a sufficient fraction of cases that exhibit the conditions also exhibit the outcome. In contrast, necessity denotes a superset relationship between membership in the outcome and conditions, indicating that a condition may be necessary but not sufficient for the outcome's emergence (Schneider & Wagemann, 2012). Contrary to crisp-set QCA (csQCA), in fsQCA, cases are not merely strictly in or outside of a set (either 0 or 1), but can take on continuous values between 0 (fully out) and 1 (fully in) (Schneider & Wagemann, 2012). The latter is used here because it allows a more fine-grained analysis that also considers whether cases are more in than out of a particular set.

There are two reasons why QCA adds value to the current research setting. First, it accounts for the fact the research setting is not monocausal by considering how mobile money combines with various factors to increase productivity, something QCA researchers term conjunctural causation (Schneider & Wagemann, 2012). Second, QCA allows us to explore the possibility that there are multiple viable paths simultaneously that are associated with high productivity. This is often referred to as equifinality (Schneider & Wagemann, 2012). Thus, QCA is in line with the configurational nature of our theoretical arguments.

QCA requires researchers to perform various steps. First, the outcome (akin to the dependent variable) and conditions (akin to the independent variables) need to be defined. As in the regression analysis, our outcome is firms' labor productivity (sales per worker in USD). Prior literature recommends a limited amount of conditions because results become difficult to interpret otherwise (Greckhamer et al., 2018). The decision should be based on substantial case and theoretical considerations. Our choice of conditions was based on the same data and theoretical considerations as our regression analysis. Through a triangulation

process, we settled on eight explanatory conditions for formal and six for informal firms, based on their theoretical salience and their empirical relevance in the regression results.

For formal firms we chose (1) mobile money use, (2) use of a bank accounts (3) the top manager's gender, (4) the top manager's years of experience, (5) the firm's institutional environment, (6) firm size, (7) firm location and (8) firm sector. For informal firms, we chose (1) mobile money use, (2) use of bank accounts, (3) sector, (4) management quality, (5) owner education and (6) location. It is important to note that for both model specifications the location is approximated by considering whether firms were located in or outside a country's capital, which exhibits a much higher degree of economic activity.

In a second step, the empirical data are translated into membership scores between 0 and 1, a process referred to as calibration. Sticking to best practice, the direct calibration method, which employs a logistic function to make said conversion, was used (Schneider & Wagemann, 2012). This requires the researcher to qualitatively set three anchor values: the full membership threshold, the full non-membership threshold and the crossover point, which determines whether a case is more in than out of a set. Therefore, as applied in the current setting, QCA should not be regarded as an inference statistical method (Thomann & Maggetti, 2020), but an additional layer of descriptive analysis in line with the configurational nature of our theoretical arguments. If theoretically sensible, the empirical distribution can be used for calibration (Greckhamer et al., 2018). The 75th and 25th percentile of the distribution are used as inclusion and exclusion thresholds, respectively, and the median is used as the crossover point. This approach is justified because the conditions under which firms exhibit "high" productivity can only be assessed relative to their peers. These distributional thresholds are later adjusted to ensure the results remain robust to such decisions. Table 2 contains a detailed list of the outcome, all conditions, their

Table 2: Outcome and conditions

Outcome	Measure	Fuzzy Set Calibration				
		Method of Calibration	Firm type	Fully in	Crossover	Fully out
Labor Productivity	<i>Dollar per worker in last fiscal year for formal and last full month for informal firms</i>	Direct method	Formal	123,940\$/worker	40,770\$/worker	13,276\$/worker
Conditions						
Mobile money	<i>Indicates whether firm uses mobile money for its operations.</i>	Binary	Formal/ informal	1		0
Bank account	<i>Indicates whether firm possess a conventional bank account</i>	Binary	Formal/ informal	1		0
Gender	<i>Indicates the top manager's gender (1=female, 0=male). Only for formal firms, as for informal firms separate QCAs are performed.</i>	Binary	Formal	1		0
Management experience	<i>Years of management experience of top manager in formal firms (data unavailable for informal firms)</i>	Direct method	Formal	30	14.9	6
Owner education	<i>Indicates an informal firm's owners educational level on a 5-point scale from 0 (no education) to 5 (university education). Data only available for informal firms</i>	Direct method	Informal	4	2.5	1
Institutional environment	<i>A composite variable that reflects the degree to which various equally weighted institutional factors present an obstacle on a 5-point scale (access to finance, corruption, access to electricity, exposure to crime). Data only available for formal firms.</i>	Direct method	Formal	4	3	2
Firm size	<i>Employee per firm</i>	Direct method	Formal	50	10.5	1
Firm location	<i>Approximated by indicating whether firms are located in or outside of a country's capital.</i>	Binary	Formal/ Informal/ Formal/ Informal	3 1	1.7	1 0
Firm sector	<i>Takes on the value 1 if a firm is active in the service sector and 0, if it is a manufacturing firms</i>	Binary	Formal/ Informal	1		0
Management quality	<i>Indicates whether informal firms maintain written records of their operations (1 if yes, 0 otherwise). Approximates the quality of informal firms' management practices.</i>	Binary	Informal	1		0

respective measurements, and their concrete full inclusion, crossover, and full exclusion points. In a third step, the statistical software constructs a truth table that contrasts all logically possible configurations with those that are actually populated by empirical cases. The truth table is then subjected to logical minimization using the Quine-McCluskey algorithm, yielding all configurations sufficient for high labor productivity (see Schneider & Wagemann, 2012 for more details on the algorithm). The analysis results in three solutions depending on whether the logical minimization procedures employ counterfactual assumptions (Schneider & Wagemann, 2012). We only use the conservative solution that avoids counterfactuals and relies purely on the empirical data, given the more explorative nature of this part of the analysis (Decker et al., 2020),

Last, researchers interpret the results using parameters of fit. One parameter of fit is the consistency score. It takes on values between 0 and 1, indicating how consistent a QCA solution is with its model's sufficiency or necessity statement. A model's consistency increases with greater proximity to one. The literature recommends a minimum threshold of 0.7 for a model's sufficiency analysis to be considered consistent (Schneider & Wagemann, 2012). However, we use the more rigorous threshold of 0.8 (Fiss, 2011). As recommended, we use a higher threshold of 0.9 for the consistency score of the necessity analysis (Schneider & Wagemann, 2012). Another parameter of fit is the coverage score that is akin to R^2 in regression analysis and indicates the fraction of cases covered by a QCA model and, therefore, its empirical relevance (Schneider & Wagemann, 2012).

2.5 Findings

2.5.1 Descriptive Statistics

Table 3 presents some descriptive statistics. In both the formal and informal sample about 41 percent of firms use mobile money. For formal firms, mobile money usage varies between 65 percent in Zimbabwe and 18 percent in Zambia.

Table 3: Descriptive statistics

	Formal (n = 994)			Informal (n = 1,499)		
	<i>Mean</i>	<i>St. dev.</i>	<i>No. firms</i>	<i>Mean</i>	<i>St. dev.</i>	<i>No. firms</i>
<i>Dependent variable</i>						
Labor productivity (\$/worker)	149,368	471,000		364	564	
<i>Independent variables</i>						
Mobile money use	0.41	0.49		0.41	0.49	
Yes			407			616
No			587			883
Bank account	0.95	0.21		0.10	0.30	
Yes			947			149
No			47			1350
Size (no. workers)	103.3	994		1.9	1.2	
Website	0.51	0.50		-	-	-
Yes			505	-	-	-
No			489	-	-	-
Internet	-	-	-	0.03	0.16	
Yes	-	-	-			41
No	-	-	-			1458
Foreign ownership (%)	17.04	33.4		-		
Export	0.15	0.36		-	-	-
Yes			153	-	-	-
No			841	-	-	-
Female				For a sub-sample of 907 firms		
Yes			151			516
No			843			391
Manager exper. (years)	17.38	11		6.5	7.3	
Owner education (ord. scale 1 to 5)	-	-		2.8	0.92	
Owner age (years)				37	11.4	
Firm age (years)	25.3	21.5		5.2	6.7	
Management quality	-	-	-			
Finance obstacle (ord. scale 1 to 5)	3.1	1.3		-	-	-
Electricity obstacle (ord. scale 1 to 5)	3	1.3		-	-	-
Corruption obstacle (ord. scale 1 to 5)	2.7	1.4		-	-	-
Crime obstacle (ord. scale 1 to 5)	2.1	0.97		-	-	-
Losses to crime	-	-	-	0.09	0.29	
Yes	-	-	-			137
No	-	-	-			1362

For informal firms, this ranges from 45 percent in Zambia to 36 percent in Mozambique. However, whereas 95 percent of formal firms possess a conventional bank account, only ten percent of informal firms do.

Among formal firms, only 151 firms (i.e., 15%) have a female top-manager. In the case of informal firms, we have no gender-related data for Zimbabwe because of measurement errors. However, for informal firms from Zambia and Mozambique, the number of female owners is 516 (c. 50%); therefore, it is significantly higher than for formal firms. Interestingly, whereas for formal firms the fraction of female-led and male-led firms that use mobile money are similar (around 40%), the fraction of female-led informal firms that use mobile money is lower (33%) than the fraction of male-led ones that do (49%).

The median firm size in the formal sample is 15 employees. Although there are a few outliers at the upper end of the distribution, 75 percent of firms have 50 or less employees. The median informal firm consists of just one owner-manager. For informal firms, the median owner has finished secondary school, is 37 years old and has roughly seven years of entrepreneurial experience. In contrast, formal firms' top managers have, on average, seventeen years of management experience.

2.5.2 Regression Estimates

Regression results for formal firms are provided in Table 4. Following similar studies on firm performance (e.g., Amin & Islam, 2015; Islam, A. et al., 2018), first the relationship between mobile money use and the logarithm of labor productivity is considered individually, as shown by Column 1. Subsequent model specifications iteratively introduce more of the aforementioned controls. Column 1 demonstrates a positive relationship between firms' use of mobile money and their labor productivity.

Table 4: Regression results for formal firms

<i>Dependent variable: log (labor productivity)</i>					
	(1)	(2)	(3)	(4)	(5)
Mobile money use	0.260** (0.103)	0.311*** (0.102)	0.284*** (0.101)	0.225** (0.104)	-0.153 (0.109)
Bank account		0.667*** (0.235)	0.631*** (0.232)	0.622*** (0.231)	0.647*** (0.222)
Size		-0.0001 (0.00005)	-0.0001* (0.00005)	-0.0001* (0.00005)	-0.0001** (0.00005)
Firm Age			0.011*** (0.003)	0.010*** (0.003)	0.005* (0.003)
Website		0.421*** (0.104)	0.339*** (0.104)	0.349*** (0.104)	0.421*** (0.101)
Foreign ownership		0.004*** (0.002)	0.005*** (0.002)	0.004** (0.002)	0.006*** (0.001)
Exports		0.397*** (0.143)	0.304** (0.143)	0.297** (0.142)	0.331** (0.139)
Female owner			-0.282** (0.137)	-0.286** (0.136)	-0.314** (0.131)
Management exper.			0.001 (0.005)	0.003 (0.005)	0.005 (0.004)
Corruption				0.110*** (0.038)	0.032 (0.037)
Access to electricity				-0.112*** (0.038)	0.025 (0.042)
Crime				0.022 (0.055)	0.032 (0.053)
Access to Finance				-0.106** (0.041)	-0.133*** (0.040)
Industry fixed effects	No	No	No	No	Yes
Region fixed effects	No	No	No	No	Yes
Country fixed effects	No	No	No	No	Yes
Constant	10.504*** (0.066)	9.508*** (0.233)	9.354*** (0.245)	9.718*** (0.290)	9.010*** (0.336)
Observations	994	994	994	994	994
R ²	0.006	0.065	0.092	0.112	0.194

Note:

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

The effect of mobile money on labor productivity remains positive and significant throughout model specifications two to four, where further controls are introduced. However, the effect disappears in specification five, where industry, region and country fixed effects are introduced. In summary, when considering all relevant factors, the relationship between mobile money use and formal firms' labor productivity is statistically insignificant.

Regression results for informal firms are depicted in Table 5. Column 1 reveals a positive relationship between the use of mobile money and labor productivity that is highly significant at the one percent level. For this simple regression with just one explanatory variable, the model's R^2 indicates that mobile money use alone explains around 5.1 percent of the variation in labor productivity. Considering the multiplicity of factors that plausibly affect a firm's labor productivity, mobile money use seems much more salient for informal firms' productivity compared to formal ones. The relationship between mobile money and firm productivity remains positive and statistically significant at the one percent level throughout all model specifications in which the aforementioned control variables are iteratively introduced (Columns 2 to 5).

Table 6 reveals that female-owned informal firms are significantly less productive than their male-led counterparts at the one percent significance level (Column 1). Subsequently, the sample was split into female-led and male-led informal firms and the same model was applied to these sub-samples. The results of this exercise are presented in Columns 2 and 3 of Table 6. They reveal that the effect of mobile money use on labor productivity is larger for female-led than for male-led informal firms. All aforementioned control variables are already accounted for in all three models.

Table 5: Regression results for informal firms

<i>Dependent variable: log(labor productivity)</i>					
	(1)	(2)	(3)	(4)	(5)
Mobile money use	0.610 ^{***} (0.068)	0.553 ^{***} (0.068)	0.460 ^{***} (0.066)	0.398 ^{***} (0.065)	0.420 ^{***} (0.062)
Internet use		0.240 (0.208)	0.282 (0.198)	0.195 (0.193)	0.220 (0.182)
Bank account		0.507 ^{***} (0.114)	0.357 ^{***} (0.110)	0.341 ^{***} (0.107)	0.470 ^{***} (0.103)
Firm age			0.010 ^{**} (0.005)	-0.011 (0.008)	-0.008 (0.008)
Size			-0.182 ^{***} (0.027)	-0.198 ^{***} (0.027)	-0.188 ^{***} (0.026)
Management quality			1.035 ^{***} (0.083)	0.794 ^{***} (0.085)	0.528 ^{***} (0.083)
Network				-0.190 ^{***} (0.068)	-0.084 (0.066)
Owner age				-0.007 ^{**} (0.003)	-0.007 ^{**} (0.003)
Owner experience				0.032 ^{***} (0.008)	0.021 ^{***} (0.008)
Owner education				0.286 ^{***} (0.036)	0.162 ^{***} (0.036)
Pay for security					0.525 ^{***} (0.121)
Losses to crime					-0.021 (0.101)
Industry fixed effects	No	No	Yes	Yes	Yes
City fixed effects	No	No	No	No	Yes
Country fixed effects	No	No	No	No	Yes
Constant	4.869 ^{***} (0.044)	4.836 ^{***} (0.044)	5.107 ^{***} (0.116)	4.624 ^{***} (0.180)	5.372 ^{***} (0.192)
Observations	1,499	1,499	1,499	1,499	1,499
R ²	0.051	0.066	0.175	0.222	0.316

*Note:** $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 6: Regression results of female-led vs. male-led firms*Dependent variable: log(labor productivity)*

	Baseline	Women	Men	Baseline	Normalized
	(1)	(2)	(3)	(4)	(5)
Mobile money use	0.384*** (0.082)	0.422*** (0.113)	0.296** (0.120)	0.420*** (0.062)	0.371*** (0.132)
Internet use	0.121 (0.291)	0.322 (0.586)	0.044 (0.335)	0.220 (0.182)	
Bank account	0.758*** (0.131)	0.976*** (0.203)	0.650*** (0.174)	0.470*** (0.103)	0.659*** (0.233)
Firm age	-0.006 (0.011)	0.011 (0.014)	-0.029 (0.019)	-0.008 (0.008)	-0.017 (0.019)
Size	-0.263*** (0.036)	-0.370*** (0.049)	-0.135** (0.056)	-0.188*** (0.026)	-0.353*** (0.069)
Management quality	0.160 (0.138)	0.153 (0.234)	0.111 (0.171)	0.528*** (0.083)	0.517** (0.245)
Network	-0.165** (0.082)	-0.167 (0.109)	-0.185 (0.126)	-0.084 (0.066)	-0.079 (0.129)
Owner age	-0.008** (0.004)	-0.013** (0.005)	-0.005 (0.005)	-0.007** (0.003)	-0.010* (0.005)
Female owner	-0.419*** (0.081)				
Owner experience	0.029*** (0.011)	0.028** (0.013)	0.024 (0.018)	0.021*** (0.008)	0.051*** (0.018)
Owner education	0.146*** (0.048)	0.041 (0.067)	0.228*** (0.069)	0.162*** (0.036)	-0.005 (0.067)
Pay for security	0.259 (0.179)	0.545** (0.267)	0.025 (0.244)	0.525*** (0.121)	0.598** (0.282)
Losses to crime	-0.057 (0.125)	-0.308* (0.176)	0.196 (0.178)	-0.021 (0.101)	-0.042 (0.226)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
City fixed effects	Yes	Yes	Yes	Yes	Yes
Constant	5.568*** (0.244)	5.577*** (0.346)	5.352*** (0.341)	5.372*** (0.192)	5.907*** (0.368)
Observations	907	516	391	1,499	325
R ²	0.292	0.283	0.307	0.316	0.355

Note:

* p<.0.10; ** p<0.05; *** p<0.01

In summary, across all model specifications mobile money use exhibits a positive and highly significant association with labor productivity of informal firms. For formal firms the effect does not persist once all controls are accounted for. Thus, hypothesis 1 is only partly supported. Yet, the data support hypothesis 2.1, because informal firms, which are exposed to more transaction costs, benefit more from mobile money than formal ones. The effect of mobile money use on labor productivity also appears to be stronger for female-led than for male-led informal firms, which supports hypothesis 2.2.

2.5.3 Qualitative Comparative Analysis Solutions

A separate QCA for formal and informal firms was performed. To visualize the QCA results, configurational charts introduced by Ragin and Fiss (2008) are used. Each column represents one configuration that is sufficient for high productivity, where ● indicates a condition's presence (or high values), ⊗ its absence (or low values), and blank spaces its irrelevance for the outcome. At the bottom the respective configuration, consistency and coverage scores including the overall consistency and coverage are presented.

Table 7 presents all configurations for which the use of mobile money in conjunction with other conditions is sufficient for high labor productivity of formal firms. All consistency values are well above the specified consistency threshold of 0.8, indicating the model's consistency with the empirical data. Configuration F1 reveals that mobile money use is associated with high productivity, if firms also use a bank account, are relatively large and exhibit relatively high management quality. They are also manufacturing firms located outside of the capital's metropolitan area (a proxy for a less favorable business environment) and are led by male managers. The presence or absence of institutional obstacles does not matter. Configuration F2 is identical with the exception that, in this case, firms' sector does not matter, while institutions represent a rather low obstacle.

Table 7: Configurations of formal firms with high productivity

Configuration	<i>Outcome (labor productivity)</i>	
	F1	F2
Mobile Money	●	●
Technology use		
Bank account	●	●
Firm characteristics		
Management quality	●	●
Service sector	⊗	
Size	●	●
Business environment		
Capital	⊗	⊗
Institutional obstacles		⊗
Manager characteristics		
Women-led	⊗	⊗
Consistency	0.83	0.83
Raw Coverage	0.04	0.06
Unique Coverage	0.02	0.04
Solution consistency	0.82	
Solution coverage	0.08	

F= configurations for formal firms with high productivity. Crossed out circles = low level of condition. Black circles = high level of conditions. Consistency threshold = 0.8. Frequency cutoff = 10.

A look at the raw coverage scores and the solution coverage suggests that the QCA results for formal firms are in line with the regression findings. The model covers only eight percent of firms in the sample. Thus, the model cannot account for labor productivity outcomes of the majority of the cases. However, the QCA results add some nuance to the regression findings.

While, on average, the use of mobile money may not be associated with higher labor productivity of formal firms, Table 7 reveals there is a small fraction of formal firms for which mobile money use is associated with high productivity. Formal firms operating outside of capitals could boost their productivity by using mobile money, despite possessing conventional bank accounts. This is likely because of reduced transaction costs with their often-unbanked customers or informal suppliers. However, meaningfully integrating mobile money into their operation requires them to have high management quality and be rather large, while institutional obstacles should not be too large. An analysis of necessity further revealed that possessing a traditional bank account is necessary for the emergence of high productivity of formal firms because it possessed a consistency score of 0.97.

Table 8 illustrates all configurations sufficient for high labor productivity of informal firms. One immediately notices the higher solution coverage of about 0.21. Thus, our model covers 21 percent of cases and, therefore, a much higher fraction compared to the model for formal ones. This is in line with the regression findings that also indicate a higher empirical relevance of mobile money use for labor productivity of informal firms.

The findings reveal that, in three of four sufficient configurations, firms with high productivity use mobile money. In only a single configuration was mobile money irrelevant for high labor productivity (IF4). Hence, there are more paths to high productivity associated with mobile money use. Further, in all configurations, owners exhibit a relatively high level of education. Thus, owner education seems important for mobile money to be associated with high productivity. Similarly, management quality appears to be a crucial element. Mobile money may only be able to compensate for low management quality outside of capitals where transaction costs are particularly large.

Configuration IF3 suggests that mobile money may, on occasion, substitute for firms' lacking access to bank accounts and, therefore, reduce their transaction costs, which could in turn

Table 8: Configurations of informal firms with high productivity

Mobile Money				
Configurations	IF1	IF2	IF3	IF4
Mobile Money	●	●	●	
Technology use				
Bank account	●		⊗	⊗
Firm characteristics				
Management quality	⊗	●	●	●
Service sector	●	●		●
Personal characteristics				
Education	●	●	●	●
Business environment				
Located in capital	⊗	●	●	●
Consistency	0.80	0.86	0.90	0.83
Raw Coverage	0.02	0.08	0.09	0.14
Unique Coverage	0.02	0.02	0.03	0.08
Overall Solution Consistency	0.85			
Overall Solution Coverage	0.21			

IF= informal firms with high productivity. Crossed out circles = low level of condition. Black circles = high level of conditions. Consistency threshold = 0.8. Frequency cutoff = 20.

boost their productivity. However, the two other configurations suggest that often mobile money alone is not enough to boost firm's productivity.

In at least one of the configurations (IF1), firms also possess bank accounts. This indicates that mobile money is not a perfect substitute for conventional bank accounts. Firms may use both type of financial services for different purposes.

Firms' sector may also play a role. In two of the configurations, firms operate in the service sector. This suggests that service sector firms may be better able to simplify transactions

and therefore, improve productivity because of the use of mobile money, while for manufacturing firms, productivity improvements may mainly come from more efficient production techniques. Mobile money may only be associated with higher productivity of manufacturing firms, if they lack conventional bank accounts, as shown in IF3 where the sector is irrelevant for high productivity.

A firm's location also appears crucial. Informal firms outside of capital that have low management quality may still benefit from mobile money (IF1). However, in all other configurations mobile money seems to mainly benefit firms located in the capital's more favorable business environment. Unlike for formal firms, an analysis of necessity revealed that no single condition alone was necessary for the emergence of high productivity of informal firms.

Table 9 presents the separate QCA results for female- and male-led informal firms, respectively. It suggests gender-specific differences. First, there are more configurations associated with high productivity for male-led compared to female-led firms. Thus, male-led firms have more paths that lead to high productivity available to them. This is further underscored by the different solution coverage scores of both specifications (16% for male-led firms compared to 4% for female-led firms). Second, for mobile money to be associated with high productivity, female-led firms appear to fulfil more favorable conditions (W1). For example, male-led firms exhibit high productivity even without a bank account (M1), with relatively low management quality (M2) and outside of the capital's metropolitan areas (M3), whereas female-led firms fulfil all these conditions in conjunction with mobile money to reach high productivity.

Table 9: Configurations with high productivity (separate for women and male-led firms)

Configuration	Women	Men		
	W1	M1	M2	M3
Mobile Money	●	●	●	●
Technology use				
Bank account	●	⊗	●	●
Firm characteristics				
Management quality	●	●	⊗	
Service sector	●	●	●	●
Personal characteristics				
Education	●	●	●	●
Business environment				
Located in Capital				⊗
Consistency	0.91	0.88	0.98	0.92
Raw Coverage	0.04	0.07	0.05	0.05
Unique Coverage	0.04	0.03	0.02	0.02
Solution consistency	0.91	0.91		
Solution coverage	0.04	0.16		

M/W= configuration with high productivity. Crossed out circles = low level of condition. Black circles = high level of conditions. Consistency threshold = 0.8. Frequency cutoff = 4

2.5.4 Robustness Checks

To increase confidence in the regression estimates for informal firms, additional robustness checks were performed. The dependent variable was based on firms' self-reported sales in the last full month before the survey. This could be a source of bias because some firms may have experienced abnormal sales. A survey question was used that asked whether the last month's sales figure was *higher than usual*, *lower than usual*, or *the usual*. These data are

only available for Zimbabwe and Mozambique. Column 5 in Table 6 was filtered to include only those enterprises whose sales figures correspond to *the usual*, which is compared to the baseline model (column 4). This should exclude one-time effects that could distort the result. The test does not alter the significance or direction of the coefficient of interest.

Further, our findings may suffer from an endogeneity bias such as reverse causality. Mobile money could simply be used by more productive firms. One way to account for a potential endogeneity bias is to use an instrumental variable. However, we are unable to do so for two reasons. First, although previous studies used the density of mobile money agents, Islam, A. et al. (2018) showed this is a weak instrument, which might further bias rather than correct the results. Second, data for mobile money agents are unavailable for the sample. Nevertheless, to reveal the magnitude that such an endogeneity bias would require to overturn our results, the robustness of inference to replacement (RIR) was assessed. This approach was introduced by Frank et al. (2013) and later adapted to management science by Busenbark et al. (2022). RIR allows the researcher to gauge the fraction of an estimate that would have to be biased to overturn the significance of the results relative to a five percent significance threshold. The analysis reveals that 70.8 percent of our estimate would have to be biased to invalidate the significance of our inference. In other words, 1,062 of our 1,499 cases would have to be replaced with cases where the effect of mobile money would be zero for us to change our conclusions. Given the number of relevant control variables already accounted for in our original model, even if an endogeneity bias did exist, it would have to be particularly large to completely overturn our estimates. This lends further credibility to the findings.

To address any remaining sources of endogeneity, we consider Park and Gupta's (2012) proposal of a so-called Gaussian copula as an instrument-free approach to correct for endogeneity (Papies et al., 2017). A Gaussian copula models the correlation between the

non-normal population distribution of the endogenous variable and the normally distributed standard errors. Essentially, the copula is added as an additional independent term to the regression model that isolates the correlation between the endogenous variable and the error term, if assumptions are met (Hult et al., 2018). A core assumption is that the endogenous variable is non-normally distributed. A Kolmogorov-Smirnov test with Lilliefors correction revealed that this was the case for mobile money use. Subsequently, a new model was estimated using bootstrapped standard errors. A significant relationship between the copula and the dependent variable would suggest that endogeneity is a potential issue that can be addressed through the newly estimated model. However, in the present case, the relationship between the copula term and labor productivity is not statistically significant at the one percent or five percent levels, indicating that endogeneity does not appear to be an issue. Nevertheless, the relationship between mobile money use and labor productivity remains positive and highly statistically significant at the one percent level if the copula term is included. Overall, the robustness tests discussed in this section suggest that endogeneity, if anything, has a small effect on the findings and is unlikely to be large enough to overturn the estimates completely.

Another issue may arise from the fact that formal and informal firms have different characteristics. To account for this, we rerun the models only for informal firms with ten or less employees and firms that are ten years old or younger. The relationship between mobile money use and productivity remains statistically insignificant at the five percent level even for this particular subset of formal firms. Thus, the conclusions remain unchanged.

In line with best practice in the literature, various tests were performed to ensure the robustness of our QCA findings (following e.g., Greckhamer et al., 2018; Schneider & Wagemann, 2012). First, we adapted all non-theoretically derived and non-binary full membership and full non-membership thresholds to the 85th and 15th percentile, respectively

in all specifications. Additionally, the crossover points were changed for all conditions by ± 4 percentiles. Although there were small differences for informal firms, results remained identical to the baseline model after slightly adjusting consistency thresholds (from 0.8 to just 0.796). For gender specific QCA findings, lowering the crossover point to the 46th percentile added an additional configuration. Broadly speaking, however, the results and their interpretation remain largely unchanged.

2.6 Discussion and Conclusion

2.6.1 Implications for the Literature

The study's novelty lies in the demonstration that a positive and statistically significant relationship between mobile money use and labor productivity exists for *informal* firms. Furthermore, a gender-based decomposition of the informal sample revealed that the relationship is even stronger for female-led than for male-led firms. The findings are also in line with Islam, A. et al. (2018), who were unable to find an effect of mobile money on labor productivity of formal firms. Meanwhile, we could not confirm Gosavi's (2018) findings, which had unveiled such an effect, possibly because we considered more control variables or used different data sets. Thus, the association between mobile money use and labor productivity depends on the type of firm and its characteristics and seems strongest for firms which, according to the literature, are more exposed to transaction costs. The QCA results support this interpretation because some of the configurations sufficient for high productivity also contain the use of conventional bank accounts, suggesting the benefits of mobile money do not merely arise from access to finance, but from simplified transactions with customers and business partners.

Our approach punctuates the usefulness of transaction cost theory to explain the relationship between mobile money use and firm performance. This matches prior literature that suggests a transaction cost reducing effect of mobile money (e.g., Islam, A. et al., 2018; Jack & Suri,

2014). However, the current study goes beyond previous literature on transaction costs and mobile money. Our approach demonstrates the usefulness of applying a configurational lens to transaction cost theory. Thus, the degree to which firms are exposed to transaction costs, and by extension the degree to which they can benefit from mobile money, crucially depends on the configurations of their type, characteristics, their managers' attributes and their institutional environment. The results suggest such a configurational lens could prove useful to understand other complex relationships between technology and entrepreneurial performance.

This research joins a growing number of studies that complement regression analysis with QCA (e.g., Meuer et al., 2015). In doing so, we demonstrate how both methods can complement each other and thereby, add an additional dimension to the analysis. While the regression analysis isolates the effect of mobile money on labor productivity, holding all else constant, the QCA reveals configurations of boundary conditions that seem crucial for mobile money use to be associated with higher productivity. Thus, the QCA adds more nuance to the regression findings. Although the QCA supports the regression findings by revealing more paths to high productivity for informal compared to formal firms, the opposite is true for female-led firms. On average, the productivity advantage of mobile money use is larger for female-led informal firms, yet they need to fulfil a configuration of more challenging conditions to truly benefit. Similarly, although the regression revealed no association between mobile money use and productivity of formal firms, the QCA revealed that a small fraction of formal firms outside of capital cities could benefit, possibly by simplifying transactions with unbanked suppliers and customers. Meanwhile, for informal firms, the QCA suggests that mobile money may not be able to overcome the disadvantages of rural areas because most of the configurations consist of firms in the capital's metropolitan area. The QCA also highlights the importance of managers' capability to leverage technology

through sufficient education and management experience. Overall, the current research contributes to an ongoing discussion about the potential effect of mobile money on labor productivity, which was hitherto inconclusive (e.g., Islam, A. et al., 2018; Gosavi, 2018), and on firm performance in general (e.g., Lorenz & Pommet, 2020). The findings add some nuance to this discussion by demonstrating if, to what degree, and under which conditions mobile money could positively affect firm productivity.

2.6.2 Policy and Managerial Implications

Practitioners and researchers have praised mobile money's potential for economic development. Indeed, our findings suggest that mobile money has developmental value because it could increase the productivity of informal firms, which are often run by the most vulnerable segments of the African population—especially women. For informal firms, higher productivity may be directly related to the livelihoods of their often-poor owners. Our findings also suggest that mobile money may be a useful tool to alleviate gender inequities in Africa's private sector. We concur with the most recent work by Nguimkeu and Okou (2021) who assert that informal firms can play an important role in poverty alleviation, if provided with productivity enhancing technologies. Therefore, policy makers should prioritize informal firms, especially female-led ones, in the roll-out of mobile money services to their private sectors.

However, our findings also suggest that mobile money is no silver bullet. We demonstrate that mobile money use is only associated with higher productivity once conditions such as sufficient education and management quality are present, and that this often only applies to firms in particular sectors and locations. Policy makers should ensure that informal firms exhibit the right conditions like sufficient education and business training to be able to exploit the benefits of mobile money. Particularly in the formal sector, which is required to drive Africa's economic transformation, mobile money often is not sufficient to offset the

drawbacks of an unfavorable business environment. Here, policy makers should prioritize access to finance, infrastructure and improving the general business environment to truly boost formal firms' productivity. Generally, managers of informal firms in Africa should strive to adopt mobile money because the ensuing productivity boost may have a direct positive effect on their livelihoods. But also formal firms in rural areas should consider adopting mobile money, even if they already possess traditional bank accounts, because it may facilitate transactions with their frequently underbanked customers and business partners.

2.6.3 Limitations and Research Outlook

As with all empirical approaches short of experiments, the cross-sectional regression analysis is unable to definitively establish causation. However, a RIR and Gaussian Copula approach suggest that an endogeneity bias is unlikely to be strong enough to overturn our estimates. Similarly, while we would ideally have a firm-level sample that covers the entire African continent, the three examined countries are the only ones for whom mobile money firm-level data are available for both formal and informal firms. As such, it is unclear to what degree our findings are generalizable to the rest of the continent.

Of course, panel data would help to better assess a causal relationship because it would allow for analysis of productivity changes in the years after mobile money's adoption. Similarly, this would also allow us to investigate whether a mobile money induced productivity boost could help to increase the survival rates of informal firms. However, panel data that covers mobile money use for both formal and informal firms is unavailable to date. Future research should seek to address these issues by applying the model to more countries, seeking to find appropriate instruments and using panel data to further investigate the relationship once respective data become available. Future studies could also attempt to address the endogeneity issue through field experiments. The fact that informal firms have

an incentive to understate their sales to remain hidden from tax authorities is another data-related caveat. However, this likely applies evenly to all informal firms in our sample. Furthermore, participation was voluntary. Because our empirical approach exploits the variation rather than levels in labor productivity, we estimate the effect on our findings to be minimal.

To solidify the intuition that the benefit of mobile money may arise from reduced transaction costs, some deeper insights into exactly how firms use mobile money may be useful. This could be investigated through qualitative case studies. Another issue arises from our definition of labor productivity. Hueing to previous studies on firm productivity, we have used sales per workers as a proxy for labor productivity. Yet, value added per worker would be a more accurate indicator because it considers costs. However, such data are unavailable for our sample. Future studies should strive to replicate these findings with additional productivity measures.

3. Institutional and Firm-Level Factors for Mobile Money Adoption in Emerging Markets –A Configurational Analysis⁶

Co-authored with Rüdiger Hahn

Abstract

Mobile money is a widespread innovation throughout emerging countries. Since neither country-level institutions nor firm-level factors alone offer satisfactory explanations for mobile money's success, we draw on institutional theory to uncover how firms interact with institutions in target markets and explain the adoption of mobile money services. We perform a fuzzy-set qualitative comparative analysis on 110 mobile money services from 46 emerging countries revealing four recipes for widespread adoption. In configuration 1, providers with high market power reach high adoption—irrespective of enabling institutions—if institutional voids are large. However, configurations 2 and 3 suggest that in most cases either enabling regulation or sufficient mobile and educational infrastructure are key for successful adoption. In these three configurations, providers are part of multinational telecommunication firms operating in markets with financial market voids. Configuration 4 suggests that certain fintech firms reach high adoption rates in more developed financial services sectors because they offer a broad scope of services. We highlight the usefulness of a configurational lens for institutional theory to understand phenomena at the intersection of innovation, society, and business – especially in emerging markets with complex institutional settings.

Keywords: Emerging Economies, Mobile Money, Fintech, QCA, Inclusive Innovation, Institutional Theory

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3.1 Introduction

Mobile money, which allows consumers to access financial services through their mobile phone without owning a bank account, is often cited as a success story of innovation especially in emerging markets⁷ with its potential to include the 1.7 billion people globally, who hitherto remain unbanked, financially (Demirgüç-Kunt et al., 2018). It has been shown to reduce the vulnerability of the poor population to negative income shocks by increasing risk sharing among households (Jack & Suri, 2014; Riley, 2018), to reduce consumers' exposure to crime (Economides & Jeziorski, 2017), to empower women by improving their financial agency (Suri & Jack, 2016), and to facilitate the operations of small businesses (Islam, A. et al., 2018). Thus, mobile money can have a significant positive effect on poverty alleviation (see e.g. Suri & Jack, 2016, for Kenya).

To be able to offer such benefits for the population, mobile money providers need to establish viable operations in emerging markets. Today, there are over 270 mobile money services in over 90 countries, and the growing number of mobile phone subscribers in emerging markets represents a significant business opportunity for providers (GSMA, 2019b). Interestingly, some services are barely used while others are highly successful. Previous research has identified the development of a country's financial service sector, the quality of its mobile network infrastructure, appropriate regulation, and sufficient education of local populations as possible factors influencing mobile money adoption (e.g., Evans & Pirchio, 2014; Lashitew et al., 2019; Lepoutre & Oguntoye, 2018; Munyegera & Matsumoto, 2016). On a provider level, the literature stresses, mostly through qualitative cases studies, the importance of building large agent networks, gaining legitimacy through appropriate interaction with

⁷ Following Gao et al. (2017), we use the terms “emerging economies” or “emerging markets” for developing economies with a lower degree of emergence.

regulators and incumbents, appropriate branding, and a functional and easy to use service (e.g., Adaba & Ayoung, 2017; Onsongo, 2019; Suri, 2017).

In sum, the current literature suggests that the adoption of mobile money services is highly complex and influenced by country-level institutional *and* provider-level factors. However, most studies consider the isolated effect of the aforementioned factors and do not reflect what different combination of factors may be associated with high adoption. Furthermore, studies usually focus on country-wide adoption rates rather than comparing adoption across various mobile money services, thus ignoring specific effects on the organizational level (see Wormald et al., 2021 for notable exceptions). Thus, empirical insights into the combination of factors and differences between paths leading to high adoption rates might allow an approximation of the most suitable approach for individual providers and countries.

Against this background, we ask the following research question: *Which combinations of factors at the level of providers and their interaction with target market institutions are associated with the widespread adoption of mobile money services?* We perform a fuzzy-set qualitative comparative analysis (fsQCA) to answer this research question. This set-theoretic method is increasingly used in management and innovation research (e.g., Furnari et al., 2020; Greckhamer et al., 2018; Muñoz & Cohen, 2017; Rodrigo & Palacios, 2021). It allows to analyze how a variety of interlocking factors could explain an outcome of interest (Misangyi et al., 2017). Hence, it is ideally suited for complex phenomena like innovations in institutionally complex environments (Berné-Martínez et al., 2021). Senyo et al. (2021) used QCA to analyze mobile money adoption in Ghana from a micro-perspective. Moving to a meso-perspective, we follow the approach of Wormald et al. (2021) and construct a unique dataset of 110 mobile money services in 46 emerging countries that combines GSMA⁸

⁸ The GSM Association is an industry body that represents the interests of mobile network providers globally.

with publicly available firm and country data. We draw on institutional theory to derive seven conditions that may affect adoption rates of mobile money services. While our empirical model is theoretically grounded, our study is mainly explorative and does not test hypotheses, thus following common empirical practice in QCA studies (see Misangyi et al., 2017).

Our findings reveal four distinct recipes for mobile money services with high adoption rates based on different combination of country-level institutional and provider-level factors. Based on our findings, we propose a three-stage model that allows mobile money providers and providers of inclusive innovations in general to estimate whether their service is likely to achieve high adoption rates. With this, we make three main contributions. First, we offer one of the few studies to apply QCA and a novel dataset to the mobile money literature from a management perspective. This allowed us to uncover four distinct recipes to achieve high adoption in the industry. Second, we make a theoretical contribution by drawing on institutional theory to demonstrate the ambiguous nature of institutions for firms with an inclusive business model. Third, the paper also has practical implications for mobile money providers and regulators by highlighting the prerequisites providers should fulfill and the institutional framework regulators should set up to encourage high adoption.

3.2 Background and Theoretical Framework

3.2.1 Background on Mobile Money

The defining characteristic of mobile money services is that — unlike most digital financial services in developed countries (e.g., PayPal and others) — customers do not need a bank account to use them, but simply register with a local operator (Aron, 2018). To deposit money into their accounts, users go to their local agents and exchange cash for electronic money (Suri, 2017). They can then use their mobile phones to check the balance in their electronic wallet, make transfers, and withdraw cash again at their local agent (Suri, 2017).

These agents are typically small local businesses (e.g., convenience stores) and act as mobile money agents in addition to their main business (Suri, 2017).

Mobile money’s main use case are peer-to-peer (P2P) transfers (GSMA, 2019b; Onsongo, 2019). Over time, mobile money services have increased their scope and added more technologically sophisticated and beneficial use cases, such as sending and receiving international remittances, making merchant payments, or paying bills. Some also allow bulk disbursements to various parties at the same time, for example, to pay salaries. The most sophisticated providers are increasingly shifting to a so-called “payment as a platform” approach (GSMA, 2019b), meaning they leverage their often significant user bases to negotiate deals with third parties. This allows them to offer savings products, microloans, and insurance products. Some providers have added e-commerce and online payment functionalities, and QR code or near-field communication (NFC) payments in stores.

3.2.2 Success Factors for High Mobile Money Adoption: Theory and Evidence

Institutional voids — a business opportunity and an impediment. Institutions are commonly referred to as the rules that structure social and economic interaction by defining and enforcing social acceptability, thereby incentivizing behavior of all societal actors (e.g., North, 1991). North (1991) differentiates between formal (i.e., laws, regulations, governance mechanisms) and informal (i.e., norms, values, customs) institutions. In a broader understanding, infrastructure is also conceptualized as part of the institutional framework as it joins buyers and sellers (in case of roads and railways) or in case of electricity enables businesses to operate (Webb et al., 2010). Overall, institutions are an important antecedent for the proper functioning of markets (Mair et al., 2012; Williamson, 1979; La Porta et al., 1998).

One of the most crucial characteristics of emerging markets is that they lack formal, market-enabling institutions and infrastructure and are, therefore, subject to institutional voids (Mair & Marti, 2009; Khanna & Palepu, 1997; Khanna et al., 2010; Khanna et al., 2005). Khanna and Palepu (2006, p. 62) define institutional voids as “the absence of specialized intermediaries, regulatory systems and contract-enforcing mechanisms” that prohibit the efficient functioning of markets (Gao et al., 2017; Khanna & Palepu, 2000). In financial markets, for example, the lack of intermediaries, such as banks or credit rating agencies, creates informational asymmetries and high transaction costs (Khanna & Palepu, 2000). As a result, equity investors or creditors are more reluctant to make funds available. This makes it more difficult for corporations in emerging markets to obtain funding (Khanna & Palepu, 1997). Underdeveloped physical infrastructure, such as bad roads, insufficient telecommunication networks, and unreliable electricity grids, further contributes to these institutional voids and complicates entrepreneurs’ activities (Tracey & Phillips, 2011; Webb et al., 2010).

The original literature on institutional voids essentially perceives them as an impediment for entrepreneurs in emerging markets (Khanna & Palepu, 1997; Khanna et al., 2005). A more recent body of literature, however, regards institutional voids also as business opportunities for institutional entrepreneurs (e.g., Maguire et al., 2004; Mair & Marti, 2009). Institutional entrepreneurs seek to span institutional voids in emerging markets by solving an institutional problem and establishing their solution as a widely accepted standard (Tracey & Phillips, 2011). To do so, they need the ability to gain legitimacy among a variety of local actors (Tracey & Phillips, 2011; Uzunca et al., 2018). Onsongo (2019) argues that this is precisely what mobile money providers have been doing. In Kenya, for example, M-PESA has exploited the fact that most Kenyans had no access whatsoever to formal financial services (Onsongo, 2019). The lack of an appropriate financial system meant that people in

cities had no way to transfer money cheaply to their families in rural areas. Today, M-PESA is a ubiquitous solution to these problems (Onsongo, 2019). Institutional voids therefore provide mobile money operators with a fundamental business opportunity.

Based on this ambiguous nature of institutions in emerging markets, we argue that, on the one hand, a mobile money service's high adoption relies on an underdeveloped financial service sector to have appeal to customers. On the other hand, a complex institutional environment may hinder mobile money operators themselves – for example, when regulation constitutes an impediment or when mobile infrastructure is underdeveloped. Therefore, we propose that reaching high adoption may depend on the peculiarities of institutional environments in the target markets, providers' interaction with these institutions, and providers' firm characteristics. Thus, in order to capture the complexity of the mobile money ecosystem accurately, a configurational theoretical perspective is required (Misangyi et al., 2017).

Institutional environment in the target markets of mobile money services. Tracey and Philips (2011, p. 32) propose that “[t]he greater the number of institutional voids in an emerging market, the greater the opportunities for entrepreneurs to found ventures that span them.” In the World Bank’s financial inclusion survey, distance to the closest bank and costs were cited as important determinants of why people did not have bank accounts with a financial institution (Demirgüç-Kunt et al., 2018). Incidentally, mobile money has recorded particularly high traction in especially vulnerable areas (Demirgüç-Kunt et al., 2018). Moreover, Evans and Pirchio (2014) demonstrate that countries with explosive growth in mobile money subscriptions seem to be exceptionally poor, underbanked, and disconnected from efficient transport infrastructure. Therefore, under such circumstances, mobile money “could create more value by reducing greater friction” (Evans & Pirchio, 2014, p. 400). Consequently, institutional voids in financial markets seem to create business

opportunities for mobile money providers to exploit. As a result, mobile money services could have a higher potential to attract users in underdeveloped financial markets.

Nevertheless, there is a flipside to weakly developed institutions. To reach high adoption, mobile money services likely require the presence of certain institutional prerequisites without which they cannot function. For example, M-PESA was only able to seize the above-mentioned business opportunity because many people had mobile phones (Onsongo, 2019). A significant diffusion of mobile phones requires a reliable mobile network infrastructure (Mothobi & Grzybowski, 2017; Muto & Yamano, 2009), while bad signal quality, especially in rural areas, is perceived as a major obstacle to further mobile money adoption (Adaba & Ayoung, 2017; David-West et al., 2018). Therefore, the ability of mobile money services to gain traction in a target market may depend on the state of its mobile infrastructure.

Ill-designed, inappropriate, or unreliable regulation can be an impediment for businesses in emerging markets (Khanna & Palepu, 1997). Similarly, it is widely acknowledged that regulation plays a crucial role in the success of mobile money (Aron, 2017; Suri, 2017). Proper regulation of mobile money spans a variety of regulatory domains, including banking, prudential and financial regulation, consumer protection, privacy, and competition regulation (Aron, 2017; GSMA, 2019a). Some regulators are hesitant to authorize non-banks (e.g., mobile network operators [MNOs]) to operate mobile money accounts or handle payments, because they fear negative impacts on financial stability (di Castri, 2013). Therefore, MNOs may be required to operate mobile money services in tandem with banks. Such requirements can make or break a mobile money ecosystem. In Ghana, for example, banks initially lobbied regulators to prevent MNOs and third parties from being authorized to issue electronic money and run agent networks (Mattern & McKay, 2018). As a result, initial uptake in Ghana was low compared to other African countries. It was only after a

regulatory change in 2015 that the mobile money industry in Ghana recorded explosive growth (Mattern & McKay, 2018).

Know-your-customer requirements for registration of new customers are another important regulatory issue (Aron, 2017; Lepoutre & Oguntoye, 2018). In many countries, customers have to present identity documents before being able to register (Aron, 2017). However, in some institutionally weak countries, customers may lack proper identification or a permanent address, which may discourage poor users from registering (Aron, 2017). Further crucial regulatory issues include ensuring proper agent liquidity, consumer protection, and data privacy (Aron, 2017; di Castri, 2013). Countries with high mobile money adoption typically employ light-touch regulation, especially in the early phases (Evans & Pirchio, 2014). This may be complemented by a slight tightening of regulation once mobile money has reached scale, as was the case in Kenya (Aron, 2017). We would therefore expect the adoption of mobile money services to be heavily dependent on the regulatory approach adopted in the respective target markets.

In addition to these institutional requirements on the supply side, there are likely demand-side prerequisites that may influence the adoption of mobile money. Weak educational institutions are a major business impediment in emerging markets (Khanna & Palepu, 1997). The quality of educational institutions, for example, influences the adoption of mobile money services (Aron, 2018). Consumers who are illiterate or do not possess basic numeracy and financial literacy may experience difficulties in dealing with mobile money services. Munyegera and Matsumoto (2016) demonstrate that the educational level of household heads in rural Uganda has a positive association with the adoption of mobile money (see also Badran, 2017; Gichuki & Mulu-Mutuku, 2018, for Egypt and Kenya). In summary, the adoption of mobile money services is likely to be impacted by educational institutions in target markets.

Firm-level decisions for high mobile money adoption rates. One of the main reasons for financial exclusion is that banks do not find it profitable to open branches in rural areas in developing countries (Aron, 2017; Demirgüç-Kunt et al., 2018; Lashitew et al., 2019; Lepoutre & Oguntoye, 2018). To fill this void, mobile money services require a large agent network to reach scale and therefore provide customers with last-mile delivery, even in the most remote areas, which they do not receive from banks (Aron, 2017). Furthermore, Tracey and Philips (2011, p. 32) state that “...to legitimate new institutions among relevant actors, is therefore a particularly important aspect of this form of institutional entrepreneurship.” Hence, gaining legitimacy among local stakeholders seems crucial for mobile money providers (Onsongo, 2019). As agents are typically businesses that are already established in their local communities, they may enjoy more trust (Maurer et al., 2013). Thus, a large agent network also helps with the credibility and legitimacy of mobile money services (Davidson & Leishman, 2011). Large agent networks are antecedents for reaching high adoption (e.g., Evans & Pirchio, 2014; Jack & Suri, 2014; Onsongo, 2019; Suri, 2017; Lashitew et al., 2019) as building and training an extensive agent network precedes scaling of the services (Aron, 2018). Furthermore, without introduction and education about the respective service through mobile money agents people would likely not even register for a service (Lashitew et al., 2019). Hence, analyzing the diffusion of mobile money requires considering agent network as a potentially important determinant.

Finally, many providers of mobile money services recognize the importance of increasing the scope of their services beyond P2P transfers to, for example, micro-credit, savings, and insurance products (GSMA, 2019b; Mattern & McKay, 2018). Some of these new use cases have increased the respective service’s adoption rate (Mattern & McKay, 2018). We estimate that the scope of the service offering increased the usefulness of a mobile money service for consumers, as credit, savings, and insurance products contribute to the creation of capital

markets and therefore span more institutional voids. Consequently, we expect a larger scope of service offerings to be associated with higher adoption rates.

Firm characteristics as a success factor for mobile money adoption. Lastly, certain firm characteristics of providers may facilitate the success of mobile money services. Originally, two types of mobile money models existed: MNO-led models or bank-led models, depending on country-specific regulations (Evans & Pirchio, 2014). Recently, a number of fintech-led models have emerged – models that are led by technologically sophisticated, third-party IT firms (GSMA, 2019b; Osafo-Kwaako et al., 2018). Mobile network operators control the network infrastructure that is crucial for the functioning and distribution of mobile money services (Aron, 2017), and they can leverage their existing distributional network of airtime vendors (Jack & Suri, 2014). In addition, consumers already possess MNO SIM cards and can easily be nudged to register for mobile money services. Over and above such operational advantages, legitimacy and trust may again play crucial roles (Gao et al., 2017; Tracey & Phillips, 2011). Mobile network operators may enjoy consumer goodwill and trust as they had previously given consumers access to relatively affordable telecommunication (Donovan, 2012; Johnson & Krijtenburg, 2018; Taylor & Horst, 2018), something most people in emerging countries lacked. In almost all countries with explosive growth in mobile money, MNOs played a leading role, while the bank-led model was generally unsuccessful (Evans & Pirchio, 2014). However, there are a number of notable exceptions, such as bKash in Bangladesh and certain fintech firms in Africa and Asia. Consequently, whether providers are MNOs seems pertinent for the adoption of mobile money services.

Moreover, whether providers belong to an international group or not can be another important firm characteristic. The literature on institutional voids reveals that groups tend to be more successful in emerging markets because they are able to overcome market

inefficiencies (Khanna & Palepu, 2000, 2006). This may also be relevant for mobile money, as its success requires considerable upfront investment to establish a large agent network and IT infrastructure (Aron, 2017; Osafo-Kwaako et al., 2018). Mattern and McKay (2018) demonstrate that providers only break even at annual transaction values of US\$2 billion to US\$3 billion. Providers that belong to international groups may be better suited to create the internal capital markets needed to reach the required scale. Furthermore, the GSMA (2016) suggests that providers located within international groups that operate mobile money services in multiple countries reach significantly larger scales, which could be due to learning effects. Consequently, whether mobile money services are operated by international groups might be a pertinent factor in explaining their widespread adoption (Wormald et al., 2021).

A configurational perspective on institutional theory. In summary, institutional theory can help increase our understanding of mobile money adoption. However, rather than a single institutional variable, extant literature suggests that mobile money adoption can only be explained by the combinations of factors from three institutionally relevant areas. First, the institutional environment in target markets. Second, the firm-characteristics of providers, as some may be better suited to seize opportunities that arise from the institutional environment. Third, specific firm decisions that may be more suitable to foster mobile money adoption.

As outlined above, the literature on institutional voids is unclear on whether such voids constitute an opportunity. This may depend on whether factors from the three aforementioned areas configure in a favorable way. Applying a configurational method to these theoretical considerations can help to flesh out which configurations these might be. This, in turn, will inform and specify theorizing on the adoption of mobile money and other inclusive innovations in emerging markets, as inclusive innovation can frequently be viewed

as solutions to institutional voids. It would also be crucial in considering the usefulness of institutional void literature for technology adoption.

3.3 Method

3.3.1 Qualitative Comparative Analysis as a Research Approach

Qualitative comparative analysis is a set-theoretic method increasingly used in management, entrepreneurship, and innovation research (e.g., Dwivedi et al., 2018; Fiss, 2011; Greckhamer et al., 2018; Muñoz & Cohen, 2017). It uses Boolean algebra to compare various cases based on their membership of sets, that is, groups of cases with common attributes (Schneider & Wagemann, 2012). Moreover, QCA is typically used to analyze how various explanatory variables (“conditions”) simultaneously relate to an outcome of interest (equivalent of a dependent variable in regression analysis) (Berg-Schlosser et al., 2009). Such logical combinations of various conditions are referred to as configurations (Berg-Schlosser et al., 2009). The goal of QCA is to establish which configurations may be sufficient and necessary for an outcome of interest (Schneider & Wagemann, 2012).

Cases are assigned membership scores (Schneider & Wagemann, 2012), which typically vary between 0 (full non-membership) and 1 (full membership) to determine their (non)membership in sets. Unlike crisp-set QCA (csQCA), fuzzy-set QCA (fsQCA) makes it possible to consider the degree to which cases are members or non-members of sets, as membership scores can vary anywhere between 0 and 1 (Schneider & Wagemann, 2012). The 0.5 membership score is of particular importance, as it represents the crossover point at which a case is neither in nor out of a particular set (Schneider & Wagemann, 2012). Through calibration, the underlying empirical data of each case are translated into membership scores (Schneider & Wagemann, 2012), as outlined in detail below.

Although QCA allows for a more systematic analysis even of large-N samples than traditional qualitative case studies and, therefore, enjoys some of the benefits of quantitative research, it is still a largely qualitative research method. Calibration decisions, especially with respect to the crossover point, and which cases to include in the analysis are qualitative value judgements, which occur against the background of the researchers' intimate case and theoretical knowledge (Khanna & Palepu, 1997; Schneider & Wagemann, 2012). Thus, QCA, as applied in the present study, is not a probabilistic statistical method, but a systematic cross-case analysis that allows us to explore how logical conclusions drawn from the empirical data can inform our theoretical thinking. Given the early state of theoretical thinking on mobile money adoption, it is decidedly not designed to prove or test pre-conceived theoretical hypotheses.

3.3.2 Suitability of Qualitative Comparative Analysis for the Present Research Setting

QCA is well-suited for the present research setting. First, mobile money adoption may only be explained by considering various firm-level and institutional factors simultaneously. Thus, as many social phenomena, it is subject to conjunctural causation (Berg-Schlosser et al., 2009). Approaches like regression analysis seek to identify the net-effect of a single variable on the outcome while holding all other variables constant. Thus, they do not allow to capture conjunctural causation adequately (Greckhamer et al., 2018; Schneider & Wagemann, 2012). QCA instead seeks to identify sufficient and necessary configurations of various factors and thus considers conjunctural causation. Second, mobile money as a research setting may be subject to equifinality, that is, various different configurations might equally be associated with high adoption. Contrary to regression analysis, QCA yields all sufficient configurations that are associated with the outcome. Third, fsQCA is suitable for small to intermediate sample sizes and is thus well-suited for our sample of 110 cases (Berg-Schlosser et al., 2009).

Our sample would not, however, be large enough to reliably conduct regression analysis. At the same time, it would be too large for traditional qualitative case studies. In summary, we feel that QCA is well in line with the nature of the data, the setting of the research question, and the theoretical thinking laid out in last section.

QCA may be used complementary with other methodological approaches that seek to capture complexity, such as fuzzy cognitive mapping (see Ferreira et al., 2016 for a joint application). However, while cognitive mapping considers the effect of various variables on a single outcome, it still requires to map the direction and strength of each variable's effect on the outcome individually. Due to the explorative nature of our study, we opted against such an approach, as we were not confident enough to specify the strength and directions of individual effects, due to the explorative nature of our approach.

3.3.3 Data

We use a hand-picked dataset constructed from various secondary data sources. The mobile money industry is highly suitable for such an approach due to its extensive availability of secondary data (Wormald et al., 2021). The starting point was the GSMA mobile money deployment tracker, which has contained all 276 active mobile money services worldwide as of 2019 (GSMA, 2019b). Thus, our main unit of analysis are the individual mobile money services. The database contains information on countries, parent companies, and scope of each service beyond simple P2P transfers. To assess the adoption of mobile money services, data on the number of subscribers and agents for each service were necessary. However, mobile money subscriber data are scarce because providers consider them highly sensitive (Aron, 2017; Evans & Pirchio, 2014). We therefore subjected each service to a thorough internet search. Where available, we retrieved service-level subscriber and agent data from various publicly available sources in the following order of priority: 1) central bank or national telecommunication authorities, 2) annual reports, 3) firm websites, 4) third-party

literature⁹, and 5) press and online sources.¹⁰ In doing so, we followed previous research that constructs datasets from diverse sources, including online sources for lack of other available data, which is often necessary in emerging market contexts (e.g., Allard & Williams, 2020; Kühn et al., 2018; Rivera-Santos et al., 2015). Our final sample consisted of 110 mobile money services for which subscriber and agent data were available. Country level data were obtained by using the United Nations Population Division, the International Monetary Fund (IMF) Financial Access Survey, and the GSMA Mobile Money Regulatory Index and Mobile Connectivity Index, as outlined in the following section. Appendix 1 provides a detailed research protocol, which lays out the data construction process.

3.3.4 Outcome and Conditions

Outcome. As outcome variable for the successful adoption of mobile money services, we used the penetration rate of each mobile money service, that is, the fraction of the target market’s adult population that each mobile money services covers. The penetration rate is frequently used as an outcome measure in the innovation adoption literature, especially on the mobile phone industry (e.g., GSMA, 2019b; Lashitew et al., 2019; Asongu & Le Roux, 2017) but also indicates market share (e.g. Radpour et al., 2017). It was calculated by dividing the absolute number of subscribers of each individual service by the adult population in the respective target market. We collected the most recently available absolute number of subscribers from 2017 to 2019¹¹ for each of the 110 services in our sample, as specified above. On rare occasions, data from 2014 to 2016 were used, for lack of more

⁹ I.e., mobile money industry reports, for example by development institutions such as US AID, the German GIZ, or the World Bank.

¹⁰ We provide the full catalogue of links and sources for each data point as a supplementary file with this paper to allow full transparency and enable replication.

¹¹ Data from differing yet temporally close years can be a caveat. Over time, services may continue to gain higher market traction which could lead to an assignment of some services to the wrong set. To mitigate this issue, we successfully reran our model by using data for only 2018 and 2019 in a robustness check as outlined at the end of the findings section.

recent data. Data on each country’s adult population were retrieved from the United Nations Population Division’s 2019 World Population Prospects database.

Furthermore, our QCA contains seven explanatory conditions that are derived from careful theoretical and case consideration (Berg-Schlosser et al., 2009; Schneider & Wagemann, 2012). The conditions are classified according to the three broad categories presented in the theoretical section, namely 1) institutional environment, 2) firm-level decisions, and 3) firm characteristics.

Institutional environment. To approximate the development of the financial market in each target market, we used the *ATM density*, that is, the number of ATMs per 100,000 inhabitants in each country (Lashitew et al., 2019). Data were obtained from the IMF Financial Access Survey. Some researchers use the fraction of people with a bank account as a proxy for financial inclusion (e.g., Evans & Pirchio, 2014; Lashitew et al., 2019). However, ATM density more accurately reflects access and therefore usefulness to consumers, as consumers often have an account but do not use it because they live in rural areas (Demirgüç-Kunt et al., 2018). Mobile money services at or above the 75th percentile of the global distribution of ATM density were coded as fully in. The global median was chosen as the crossover point, and cases at or below the 25th percentile of the global distribution were classified as fully out. Here, the global rather than the sample distribution was used, because we were interested in the qualitative point at which countries are considered as having an underdeveloped financial service sector.

To capture the status of *regulation* in all target markets, we included a condition based on the GSMA regulatory index, which rates the mobile money regulation of countries along six dimensions (for details see GSMA, 2019a) with a weighted regulation score between 0 and 100.

To reflect the *quality of mobile network infrastructure and education*, we created a composite condition based on data from the GSMA mobile connectivity index, which assigns a score between 0 and 100 (100 being the best) to capture countries' mobile internet ecosystem. From the index, we used a dimension that captures infrastructure (e.g., network coverage and performance) and a dimension that captures consumer readiness (e.g., basic skill of population and mobile ownership). We then calculated a new mobile index (potentially 0–100) in which both of these dimensions are equally weighted.

Firm-level decisions. The first condition that providers have to ensure is *agent density*, which measures the extent of each service's agent network. The data were obtained through providers' websites, which often provide lists of all their agents. Occasionally, third party estimates were used. We then used population data from the United Nations Population Division to calculate the number of agents per 100,000 inhabitants in each country to mimic the ATM density condition.

The second firm-level decision condition reflects a service's *scope*. The GSMA mobile deployment tracker contains most product offerings for all available services. These include whether services allow P2P transfers, bill payments, bulk disbursements, merchant payments, or international remittances. We complemented these data by adding information from firm websites on whether services offer online payments and sophisticated store payments (e.g., QR code or NFC payments), savings and insurance services, or micro-credit. Depending on available product offers, we manually assigned a membership score to each service. Services with a large scope that have the potential to span more institutional voids were given a higher score. For example, services which only allow P2P transfers received a score of 0, while services with savings or credit services received a score of 1, as they contribute to the creation of capital markets. Table 1 below presents the coding scheme for membership scores.

Firm characteristics. The first condition for firm characteristics reflects whether services are controlled by an *MNO*. Data were retrieved from the GSMA deployment tracker, which contains information on each service’s parent company. Subsequently, Thomson Reuters’ Eikon was used to check whether the parent company was an MNO, resulting in a crisp condition (1, if a service is controlled by an MNO; 0 if otherwise).

The second firm characteristic is a condition that indicates whether a service’s provider was *part of an international group*. Parent companies were coded as being part of international groups, if they were active in at least two countries, or if an international group had a controlling interest in them. Information was again obtained from the deployment tracker database and then cross-checked with Thomson Reuters’ Eikon. The condition is again a crisp condition (1, if a service is part of an in international group; 0 if otherwise).

Table 10 presents all conditions and their respective calibrations, that is, the translation of the empirical data into QCA membership scores (see Schneider & Wagemann, 2012 for more details on the calibrations process). Unless stated otherwise, we used the 75th and 25th percentiles as full membership and non-membership thresholds, respectively. for all fuzzy conditions, while the median was used as the crossover point (e.g., Misangyi & Acharya, 2014). Furthermore, being part of the set of successful mobile money services also depends, to some degree, on their relative position. Choosing a relatively generous threshold for full membership is sensible, because certain conditions, such as the penetration rate, have significant outliers on the upper tail of the distribution. For example, M-PESA in Kenya has penetration rates in excess of 80%, but a service with penetration rates of 30% still makes a large contribution to financial inclusions from a qualitative standpoint. The same applies to some of the other fuzzy conditions, which the 75th percentile inclusion threshold considers.

Table 10: Outcome, Conditions and Calibration

Outcome	Measure	Fuzzy Set Calibration			Descriptive Statistics			
		Fully in	Crossover	Fully out	Mean	SD	Max	Min
Penetration Rate	The number of subscribers of each service divided by the respective country's population. Indicating the financially included fraction of the population in %.	26.3	7	1	17.15	22.40	102.41	0
Condition								
MNO	Indicates whether a service is provided by a mobile network operator	Firm is an MNO		Firm is not MNO	0.57	0.50	1	0
International Group	Indicates whether an international group (i.e. a business group which is active in at least two countries) has a controlling stake in the service.	Part of an international group		Not part of an international group	0.67	0.47	1	0
Regulation Index	GSMA mobile money regulatory index values of the respective countries from 0 to 100, 100 being more enabling regulation for mobile money.	80.7	78.8	71.9	77	7.7	93.15	54.25
Mobile Index	A combined index reflecting the quality of network infrastructure and consumer readiness in terms of education and emancipation. Theoretically takes on values between 0 and 100, 100 being the best.	46.8	41	32.9	40.87	11.35	70.60	16.60
ATM density	The amount of ATM per 100,000 inhabitants in each respective country, as a proxy for the development of formal financial sector.	72.4	42	19.2	19.18	29.90	161.11	0.37
Agent density	Number of mobile money agents per 100,000 inhabitants of the respective country.	159.8	62.3	9.4	134.70	199.8	1020.18	0
Service Scope	Categories reflecting the scope of each service's use cases. If one of the product attributes was available, the service received the respective membership score specified on the right.	0 = basic functions of mobile money (i.e., P2P, realtime top-up) 0.1 = international remittances 0.2 = Bulk disbursements 0.4 = merchant payments and bill payments 0.8 = Online payments, QR and NFC payments 1 = Savings and investment products, loans, insurance products			0.49	0.30	1	0

However, as outlined in the next section, to assess the robustness of our findings against such decisions, we reran the models with various other calibrations. Appendix 2 provides detailed descriptions on all conditions, including their measures and sources.

3.3.5 Analytical Technique

We seek to identify which configurations of the specified conditions may be sufficient for high adoption rates of mobile money services. In theory, sufficiency requires a perfect subset relationship between a case's membership in the outcome and its membership of the condition (see Schneider & Wagemann, 2012). Such perfect relations, however, are rare in social reality. We use the consistency value as a parameter, which indicates a model's fit and takes on values between 0 and 1 (Ragin, 2009; Schneider & Wagemann, 2012). It decreases the more cases deviate from the assumed subset relations. We used a rigorous threshold of 0.8 (Dwivedi et al., 2018; Fiss, 2011) above the commonly accepted minimum of 0.75 (Ragin, 2009; Schneider & Wagemann, 2012). We also reported the proportional reduction in inconsistency (PRI) measure to account for errors that arise from dual subset relations, which should be close to the raw consistency score (Greckhamer et al., 2018; Misangyi & Acharya, 2014; Schneider & Wagemann, 2012).

Furthermore, we excluded single cases and set the minimum frequency threshold per configuration at two cases to include 80% of cases (Greckhamer et al., 2018). Having identified sufficient configurations of conditions for mobile money services with high adoption, we turned to in-depth case analysis for representative cases of each configuration, as recommended in the QCA literature (e.g., Dwivedi et al., 2018; Greckhamer et al., 2018).

We also performed an a priori analysis of necessity (Schneider & Wagemann, 2012) to identify whether any single condition may be necessary for the emergence of the outcome. Necessity requires a superset relation between membership in the outcome and membership

in the conditions (see Ragin, 2009 or Schneider & Wagemann, 2012 for more details). The consistency value for necessity should ideally be higher, which is why we chose 0.9 as a cut-off (Schneider & Wagemann, 2012).

The results of a QCA are obtained by composing truth tables, which contain all possible combinations. These are subsequently reduced through logical minimization using the Quine-McCluskey algorithm until only sufficient configurations remain (see Schneider & Wagemann, 2012 for more details). The analysis yields three solutions, depending on whether the minimization process relies on counterfactuals (Ragin & Sonnett, 2005). Due to the explorative nature of our study, we use only the conservative solution, which avoids counterfactuals and is purely based on the empirical data (see Schneider & Wagemann, 2012).

3.4 Findings

3.4.1 Configurations Sufficient for High Adoption Rates of Mobile Money Services

Table 10 above presents descriptive statistics of our conditions and outcome. The average penetration rate is 17.1%. However, this conceals a significant variation in penetration rate. 62 of the 110 cases in our sample are MNOs, and 48 are either banks or fintech startups.

The findings of the initial analysis are presented in Table 11. Each column represents one configuration that is sufficient for high adoption of mobile money services. Black circles (“●”) indicate the presence of a condition, and crossed-out circles (“⊗”) represent its absence (Fiss, 2011). Blank spaces indicate “do not care conditions”, that is, the condition’s presence or absence is irrelevant for high adoption of services.

As indicated in Table 11, four configurations are associated with successful mobile money services, that is, services with high adoption. All configurations have an acceptable raw consistency of over 0.9.

Table 11: Configurations of mobile money services with high adoption

Configuration	Market Power	Solution Enabling Environment		Fintechs
	S1	S2	S3	S4
Firm Characteristics				
MNO	●	●	●	⊗
International Group	●	●	●	●
Institutional Factors				
ATM Density	⊗	⊗	⊗	●
Regulation		●		●
Mobile Index			●	●
Firm-level decisions				
Agent Network	●	●	●	●
Service Scope	⊗			●
Consistency	0.97	0.96	0.93	0.92
PRI consistency	0.96	0.95	0.92	0.91
Raw Coverage	0.30	0.38	0.35	0.07
Unique Coverage	0.05	0.08	0.08	0.07
Overall Solution Consistency		0.94		
Overall Solution Coverage		0.63		

S= successful configuration with high adoption rate. Crossed out circles = low level of condition. Black circles = high level of conditions. Consistency threshold = 0.8. Frequency cutoff = 2.

The PRI consistency exhibits only very minor differences to the raw consistency scores, confirming the sufficiency of our configurations. Table 11 also presents the coverage of each individual configuration and the overall solution coverage¹². The overall solution coverage indicates the percentage of cases with membership in the outcome for which the model accounts. The overall solution coverage of 0.63 is substantial. Raw coverage scores indicate the number of cases with membership in the outcome variable that are covered by each individual configuration. This makes it possible to estimate which configuration has the highest empirical relevance (Ragin, 2006). However, a configuration can still have high theoretical relevance despite a low raw coverage score (Schneider & Wagemann, 2012)

International MNOs with market power. In the first recipe sufficient for success (S1), providers are MNOs and part of international groups; they operate in countries with low ATM density, have large agent networks, but do not offer a large service scope. The presence or absence of enabling regulation, mobile infrastructure, or local education appears irrelevant for successful services in this configuration. In addition, providers are active in countries with rather underdeveloped formal financial systems. Therefore, a fundamental market void in the target market in combination with the aforementioned conditions appears sufficient to include large enough fractions of the population successfully. Furthermore, their success is associated with building large agent networks that can reach the population and replace the absence of bank branches. The last condition indicates that this recipe, somewhat unexpectedly, includes the absence of a large service scope.

A more in-depth analysis of the underlying cases reveals that many providers have significant market power in countries with particularly underdeveloped financial service sectors (i.e., low ATM density). A suitable example in this regard is MTN Mobile Money in

¹² Similar to the R^2 in regression analysis, coverage is a measure of empirical relevance, that is, the fraction of cases explained by our model (Dwivedi et al., 2018; Fiss, 2011; Ragin, 2006).

Benin. Together with MOOV mobile money (a subsidiary of the internationally active group Etisalat), it controls Benin's mobile money market (ARCEP Benin, 2018). With an ATM density of merely 5 per 100,000 inhabitants, Benin is well below the already low average of 18 ATMs per 100,000 in our sample. This configuration could indicate that MNOs with significant market power do exploit a strong desire of local populations to be financially included. However, because of their market power, these services may not feel obligated to improve efficiency of the financial market further by providing customers with a larger service scope. In addition, they may also possess sufficient market power and resources to overcome an unfavorable institutional environment, as enabling institutions are irrelevant in this configuration.

International MNOs in enabling environments. Configurations S2 and S3 are the most empirically relevant, as indicated by their raw and unique coverage scores. In configuration S2, international MNOs operating in target markets with underdeveloped financial markets, an enabling regulatory environment, and large agent networks are sufficient for high adoption, while the mobile index and the level of service scope appear irrelevant. Hence, the network infrastructure and education of local populations do not matter as long as the regulation is enabling. The three major mobile money services in Ghana (MTN Mobile Money, Airtel-Tigo Money, and Vodafone Cash) are all members in this configuration and constitute appropriate exemplary cases to offer in-depth insights. With a regulatory index score of 85.81, Ghana's regulation is among the most enabling in our sample. Consumer protection is high: electronic wallets, for example, are covered by deposit insurance. Furthermore, in 2018, Ghana implemented full interoperability so that users can make transfers across different platforms. These and other regulatory characteristics probably increase consumer acceptance and the ease of providing mobile money services.

Configuration S3 is identical to configuration S2, with the exception that the mobile index is high (i.e., high infrastructure quality and consumer readiness), while enabling regulation is irrelevant. Thus, to a certain degree, enabling regulation and a high mobile index seem to be substitutes. Nevertheless, our findings illustrate that, in most cases, at least one of the two should be present in addition to the aforementioned conditions (MNO, international group, and agent network). This suggests that if there is no enabling regulation, there should be at least a sufficient network infrastructure and consumers who are ready for mobile money services (e.g., in terms of education). Due to their empirical relevance, configurations S2 and S3 imply that it is only on rare occasions that providers are able to circumvent disabling institutions. In fact, as configuration S1 suggests, it is only certain providers with a particularly large market share that are able to circumvent the absence of an enabling institutional environment.

The importance of the institutional environment can be further illustrated by contrasting the penetration rates of providers in configurations 2 and 3 with those of providers who fulfill all the same conditions with exception of having low regulation and mobile indices. Whereas providers in configuration 2 and 3 have a median penetration rate of 35.5 %, providers with low institutional values have a median penetration rate of only 21.6%.

Third party fintech firms in emerging countries. The fourth configuration (S4) differs significantly from the others and offers surprising findings. Firms that are members of this configuration are not MNOs, but part of an international group. They operate in countries with favorable regulation and in which there is a relatively well-developed financial service sector. This stands in stark contrast to the previous three configurations and is somewhat counterintuitive. The existing literature suggests that the very premise of mobile money hinges on the financial inclusion of the unbanked. In addition, this configuration exhibits a high mobile index (i.e., high consumer readiness and good network infrastructure).

Furthermore, services have a strong agent network, similar to the earlier configurations. The last condition in this sufficient configuration indicates that providers offer a large service scope. A close examination of the underlying cases reveals that they consist predominantly of fintech firms in emerging countries in Asia.

One such service is Go-Pay, a subsidiary of Go-Jek, Indonesia's largest ride-hailing start-up. Despite a relatively well-developed traditional banking sector, the company noticed that substantial segments of the population remained unbanked or at least partly financially excluded. Since then, Go-Pay has been expanded to a comprehensive, convenient, and technologically sophisticated mobile money service. It serves as a platform that opens up a large number of services to emerging-market consumers who were hitherto excluded from such services.

In general, these providers are part of larger groups in the technology sector that apply their know-how from other activities to mobile money, as MNOs may not have the technological know-how to run such a sophisticated platform. The countries in which they operate tend to have favorable mobile money regulation, well-developed network infrastructure, and high consumer readiness, because they exhibit a higher degree of emergence. Furthermore, the configuration suggests that, in order to be attractive to consumers in countries with a developed banking sector, mobile money services need to offer a larger scope of services. Consequently, they need to address other voids in addition to P2P transfers. Being the gateway for a plethora of services might be the only way to distinguish themselves from traditional banks. Despite the fact that this configuration has the lowest empirical significance (with a raw coverage score of 0.06), it offers new insights illustrating that mobile money providers can gain a foothold in more advanced markets.

The importance of offering a large service scope in markets with well-developed financial service sectors can be further illustrated. The median penetration rate of the four providers

that are part of configuration S4 is 46.4%. In contrast, the only provider that exhibits the same configuration with the exception of having a low service scope has a median penetration rate of only 2.6%. Since a high service scope may not be the only causal factor for the differences between these two groups of cases, these data may serve as anecdotal support of our qualitative analysis.

3.4.2 Configurations Sufficient for Low Adoption of Mobile Money Services

As conditions sufficient for an outcome’s absence are not necessarily the opposite of the sufficiency analysis for its presence, we performed a separate analysis of sufficiency for low adoption of mobile money services (for similar approaches see, e.g., Greckhamer et al., 2018; Misangyi et al., 2017). The resulting seven configurations are presented in Table 12. All configurations exhibit reasonably high consistency, above 0.87. The difference between consistency and PRI consistency scores is very low in all configurations, and PRI scores are never below 0.78, indicating the sufficiency of our configurations.

Results largely support our findings for mobile money services with high adoption. Most services with low adoption lack the necessary organizational prerequisites (MNO status or at least membership of an international group), the right institutional framework (enabling regulation, infrastructure, and sufficient education), and appropriate firm-level decisions (large agent networks or sophisticated use cases).

Configurations U1 to U4 consist mainly of *indigenous firms operating in disabling institutional environments*. In all four configurations, providers are neither MNOs nor part of international groups, and institutions are mainly unfavorable. Almost all providers with membership in these four configurations are indigenous, African fintech startups. In configuration U5, services are part of international groups, and they may or may not be MNOs but are held back, because the institutional environment is strikingly unfavorable.

Table 12: Configurations of mobile money services with low adoption

Configurations	Solution						
	Indigenous				Held back	Uncommitted/ Startups	
	U1	U2	U3	U4	U5	U6	U7
Firm Characteristics							
MNO	⊗	⊗	⊗	⊗		●	⊗
International Group	⊗	⊗	⊗	⊗	●	●	⊗
Institutional Factors							
ATM Density	⊗	⊗	⊗	⊗	⊗		⊗
Regulation	⊗	⊗	●		⊗	●	●
Mobile Index	⊗	⊗		⊗	⊗	●	●
Firm-level decisions							
Agent Network	⊗		⊗	⊗	⊗	⊗	⊗
Service Scope		⊗	⊗	⊗	⊗	⊗	
Consistency	0.96	0.91	0.99	0.97	0.86	0.87	0.98
PRI consistency	0.96	0.90	0.99	0.97	0.78	0.81	0.97
Raw Coverage	0.18	0.18	0.12	0.21	0.14	0.1	0.09
Unique Coverage	0.04	0.04	0.003	0.01	0.12	0.08	0.04
Overall Solution Consistency		0.91					
Overall Solution Coverage		0.56					

U = unsuccessful configuration with low adoption. Crossed out circles = low level of condition. Black circles = high level of conditions. Consistency threshold = 0.8. Frequency cutoff = 2.

Services in configuration U6 and U7 seem either *uncommitted* as providers are MNOs and part of international groups with favorable institutions, but do not achieve high adoption rates (U6) or are fintech *start-ups* that operate in countries with underdeveloped financial markets but otherwise favorable institutions and that in some cases offer high use cases and therefore have the potential to reach high adoption rates (U7).

3.4.3 Necessary Conditions

Table 13 presents the results of the analysis of necessity. Using 0.9 as a threshold, no single condition alone was necessary for high adoption of mobile money services. The analysis of

sufficiency offered additional insights into the necessity of a combination of two conditions. Table 11 revealed that being part of an international group and building a large agent network were present in all configurations. An a posteriori analysis of necessity has revealed that the conjunction of both conditions is necessary for reaching high adoption, as demonstrated by the consistency value of 0.94 (Table 13). Irrespective of other contributing factors, our results suggest that all successful providers should strive to build a large agent network or be part of international groups to reach high adoption, although these two conditions alone are not sufficient. This is further underlined if we contrast median penetration rates of providers which are part of a group and have high agent density with providers who exhibit none of these characteristics. Whereas the former have median penetration rates of 32.2 %, the latter have median penetration rates of only 0.2%.

Table 13: Analysis of necessity

Condition	Consistency
MNO	0.75
~MNO	0.25
GROUP	0.85
~GROUP	0.15
ATMDENS	0.23
~ATMDENS	0.85
REGU	0.56
~REGU	0.52
MOBIN	0.61
~MOBIN	0.48
AGENT	0.82
~AGENT	0.31
SCOPE	0.68
~SCOPE	0.48
AGENT AND GROUP	0.94

Analysis of necessity of all conditions for the presence of the outcome. Consistency values >0.9 indicate necessity.

3.4.4 Robustness of Findings

To evaluate the robustness of our findings (following Greckhamer et al., 2018; Schneider & Wagemann, 2012), we adapted the full membership and full non-membership thresholds to the 85th and 15th percentile, respectively, for all non-theoretically derived fuzzy conditions. Results remain robust to these changes. In addition, we changed the crossover points for all non-theoretically derived conditions by ± 3 percentiles (see, e.g., Meuer, 2017). Once again, results remained robust. The solution was sensitive to a change of the crossover points by ± 4 percentiles; however, this merely added one additional configuration, while all original configurations and interpretations persisted. The results are also robust to increasing the frequency thresholds to 3. As expected, lowering the frequency threshold to 1 increases the number of configurations, as configurations with only a single case are added to the truth table. However, barring the new configurations with a single case, the original configurations remain robust and interpretations do not change.

The penetration rates of mobile money services may change over time. Since some of our subscriber data are from different years, we may assign services to the wrong set, because some may have overtaken others in the meantime. We controlled for this by rerunning our QCA only for services with data from the proximate years 2018 and 2019. The results remain robust to such changes. Despite a slight reduction in consistency, consistency scores remain well above the 0.8 threshold.

Table 14 presents the spearman correlations for the outcome and the conditions, including their respective significance levels. The correlations provide further support for our QCA's findings. Most conditions that are frequently present in our sufficient configurations exhibit a significant correlation with the outcome variable.

Table 14: Correlation table

	1	2	3	4	5	6	7	8
1 Penetration rate	1							
2 Agent density	0.789***	1						
3 ATM density	0.086	0.067	1					
4 Regulation index	0.116	0.044	0.319***	1				
5 Mobile index	0.232**	0.181*	0.688***	0.323***	1			
6 MNO	0.446***	0.334***	-0.227**	0.086	0.022	1		
7 International group	0.477***	0.339***	0.048	0.235**	0.169*	0.651***	1	
8 Service Scope	0.377***	0.356***	0.097	0.229**	0.202**	0.074	0.218**	1

Note. MNO = mobile network operator, *** if $p < 0.01$, ** if $p < 0.05$, * if $p < 0.1$

However, since QCA and correlation coefficients rely on different analytical logics, conditions may still be relevant from a configurational perspective, even if correlations are weak or statistically insignificant, because they may be associated with the outcome only in specific

combinations with other conditions. For example, while the correlation between the ATM density and the penetration rate is insignificant, our QCA model reveals that ATM density may or may not be associated with high penetration rates, depending on how providers adapt their service's scope. Similarly, the correlation between the mobile and regulatory indices and the penetration rate are less significant, because our results demonstrate that they are somewhat substitutes, and in rare cases irrelevant for high penetration rates.

To increase the confidence in our findings' robustness further, we randomly dropped 20% of our sample and reran our model. We repeated this process for ten independent iterations. The result of this exercise can be seen in Table 15. In nine out of ten iterations, our model remained robust to such changes. That is, the four original configurations remained identical, and consistency scores varied but remained close to the original model and exceeded the 0.8 minimum threshold in all iterations. One single iteration did not yield configuration four. However, this was due to the statistical program coincidentally dropping *all* cases in this configuration. Yet, even in this iteration, the other three configurations remained identical to the original model.

3.5 Discussion

3.5.1 Causal Complexity and Institutional Balance for the Adoption of Mobile Money

Prior research has mentioned cross-country institutional differences (e.g., Lashitew et al., 2019; Lepoutre & Oguntoye, 2018), firm-level decisions (e.g., David-West et al., 2018; Onsongo, 2019), and firm characteristics (Evans & Pirchio, 2014; GSMA, 2016) as crucial for the adoption of mobile money. Our results suggest that no single condition alone is necessary or sufficient for high adoption of mobile money.

Table 15: Model iterations by randomly dropping 20% of the sample

Configurations	1			2			3			4			Solution consistency	Solution coverage
	Pres	Cons.	Cov.	Pres	Cons.	Cov.	Pres	Cons.	Cov.	Pres	Cons.	Cov.		
Model iterations														
1	Yes	0.953	0.303	Yes	0.957	0.395	Yes	0.918	0.303	Yes	1	0.038	0.941	0.622
2	Yes	0.969	0.295	Yes	0.949	0.38	Yes	0.938	0.375	Yes	0.902	0.082	0.941	0.657
3	Yes	0.952	0.303	Yes	0.963	0.378	Yes	0.925	0.352	Yes	0.902	0.086	0.933	0.637
4	Yes	0.976	0.284	Yes	0.957	0.367	Yes	0.957	0.354	Yes	0.912	0.076	0.959	0.633
5	Yes	0.953	0.31	Yes	0.961	0.395	Yes	0.953	0.366	Yes	0.834	0.048	0.931	0.639
6	Yes	0.948	0.295	Yes	0.976	0.373	Yes	0.927	0.354	Yes	0.877	0.07	0.938	0.626
7	Yes	0.96	0.317	Yes	0.948	0.392	Yes	0.931	0.396	Yes	0.879	0.07	0.935	0.675
8	Yes	0.964	0.274	Yes	0.965	0.379	Yes	0.931	0.329	Yes	0.912	0.075	0.947	0.631
9	Yes	0.956	0.365	Yes	0.945	0.384	Yes	0.926	0.279	No	-	-	0.937	0.57
10	Yes	0.955	0.309	Yes	0.951	0.405	Yes	0.917	0.38	Yes	0.881	0.061	0.929	0.652

Instead, the success of mobile money can likely only be explained on the basis of a combination of all the above-mentioned factors. In all four paths to high adoption, our analysis reveals that a combination of service and country level conditions is present. Our results confirm the usefulness of embracing causal complexity as an analytical lens in management research (as stipulated by Misangyi et al., 2017) to understand phenomena at the intersection of innovation, society, and business — especially in emerging markets with complex institutional settings. With this, our findings complement Senyo et al.’s (2021), who also analyze mobile money adoption with QCA with a specific focus on consumers’ intentions and perceptions of the product and the technical infrastructure in Ghana. Thus, we add to their explanations of individuals’ willingness to adopt mobile money with our emphasis on company and institutional factors and thus on the meso-level of mobile money adoption.

Our theoretical considerations highlighted the ambiguous nature of country level institutions, as suggested by the existent literature on institutional voids (Khanna & Palepu, 1997; Tracey & Phillips, 2011), which could be harnessed and successfully navigated by mobile money providers as a business opportunity (Onsongo, 2019). Our results support the appropriateness of this theoretical lens. Indeed, configurations S1 to S3 of mobile money services with high adoption all exhibit undeveloped financial service sectors, highlighting the opportunity this presents for them. Configurations S2 and S3, however, demonstrate that in most cases, services require enabling institutions to reach high adoption, as the largest number of cases are covered by these two configurations. Thus, mobile money services tend to be successful in a certain institutional corridor that exhibits the right balance between institutional voids, creating business opportunity (Tracey & Phillips, 2011), and institutions that support business activity (Webb et al., 2010). Our findings reveal that when services are outside that corridor — as indicated by configurations S1 and S4 — additional conditions

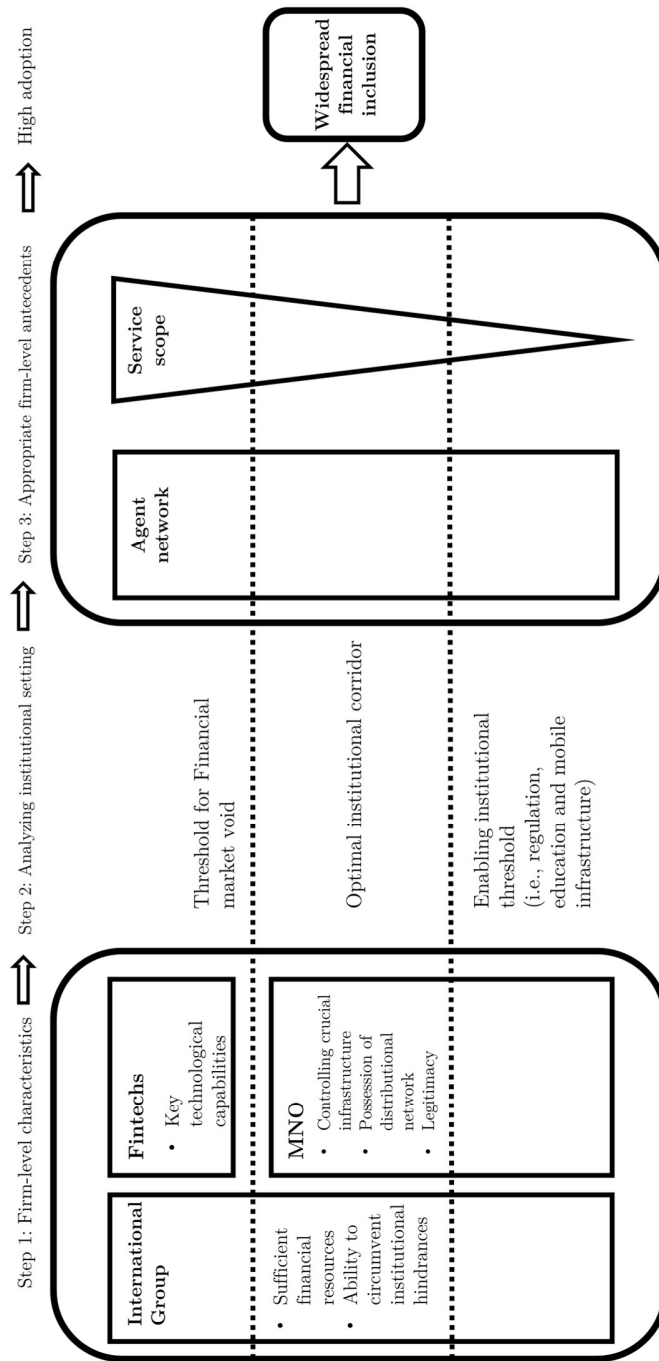
should likely be present. In configuration S1, multinational MNOs with significant market power may be able to overcome the lack of enabling institutions. However, this may not apply to small, indigenous fintechs, which may be due to the significant upfront investment necessary (Osafo-Kwaako et al., 2018). In configuration S4, the other boundary condition of the corridor is absent, meaning that services reach high adoption despite relatively well-developed financial service sectors. In order to be successful, they offer a higher service scope that is likely to distinguish them from traditional financial institutions.

3.5.2 Towards a Framework for Spanning Institutional Voids Through Inclusive Innovations

We propose a three-stage model that allows mobile money providers to estimate whether their service can be successfully adopted, which could also be useful for providers of other inclusive innovations in emerging markets (see Figure 3). First, providers need to analyze their own firm characteristics. In the case of mobile money, firms are ideally part of an international group that is able to make the necessary investment and overcome institutional challenges (Khanna & Palepu, 2000). Small, indigenous start-ups may often lack sufficient financial resources in this scale-dependent industry (Osafo-Kwaako et al., 2018). Their services will succeed only if they possess the right resources or technological capabilities and enjoy sufficient legitimacy (Davidson & Leishman, 2011; Tracey & Phillips, 2011). For an MNO, this could mean that it controls the crucial infrastructure and distribution network (GSMA, 2016); for a fintech, that it possesses the technological capabilities to provide a compelling payment platform (GSMA, 2019b). The appropriate type of provider may vary, depending on the institutional setting.

In a second step, providers are advised to analyze the institutional setting and choose an appropriate target market.

Figure 3: Framework for successful financial inclusion



Ideally, this should be a relatively underdeveloped financial market (below the threshold for financial market void in Figure 3), as services will create more value for users (Evans & Pirchio, 2014; Onsongo, 2019). However, there should be some institutional balance, as

services will be held back by bad regulation or insufficient infrastructure (above the enabling institutional threshold in Figure 3). They are likely to be successful in an optimal institutional corridor¹³ of underdeveloped financial markets and sufficiently enabling institutions. Lastly, providers may want to ensure the appropriate firm-level decisions for their target market. More developed financial markets may be chosen if providers possess the technical know-how to offer a scope of services that reduce more complicated market voids. Fintechs may be particularly suited to do this. The lower the development of financial markets, the lower the necessity to provide a larger scope of services (funnel shape in Figure 3). In most other configurations, MNOs tend to be more successful and may be able to circumvent unfavorable institutions due to their market power. In all scenarios, providers need to have an extensive agent network. Choosing the right configuration of factors will increase the likelihood of achieving widespread financial inclusion.

3.5.3 Limitations

Our use of data from heterogeneous sources, including websites and the press, may negatively affect reliability and comparability. In emerging market settings, data quality is often problematic, and researchers have to make do with the available data (e.g., Kolk & Lenfant, 2010; Kolk & Rivera-Santos, 2018; Rivera-Santos et al., 2015). The fact that other mobile money-related papers use a similar approach to data construction is testament to the industry’s high quality of documentation (see e.g., Wormald et al., 2021). We also believe that the very nature of QCA helps to mitigate some, though not all, of these concerns. Given the data quality, specific estimates about the strengths of causal effect of a particular independent variable on our outcome are problematic. Qualitative comparative analysis

¹³ We use this term in a different context than Acemoglu and Robinson (2019), who use a more macro approach.

allows us to circumvent this problem, as we only need reference anchors to categorize services as having high or low adoption, while we make no statements about effect strengths.

A related drawback that results from data quality is that we might overestimate the extent of financial inclusion. This is due to the fact that our data contains only gross subscriber data, which could include unused accounts. Therefore, some research uses data on active accounts (i.e., accounts that have been used at least once in 90 days), which we do not have access to (e.g., GSMA, 2019b). Like many performance-related studies, our dataset may also suffer from survivorship bias, that is, some services may have failed before being included in the GSMA deployment tracker. Although the GSMA data contain both active and non-active services, they may have failed to capture some services that were shut-down prematurely, especially in countries with particularly weak regulation and disclosure requirements. This may lead to an overestimation of median adoption rates, because well-performing services could be overrepresented in the sample. However, while both limitations may affect absolute quantities, we deem them unlikely to change the relative quality of our results.

Another issue is that dealing with time in QCA has not yet been fully resolved (Schneider & Wagemann, 2012). Our data contain subscriber numbers from different though temporally close years, and may, therefore, assign certain services to the wrong set, based on temporally incompatible subscriber numbers. We partly mitigated this by considering configurations of providers in Table 3 that could have low adoption because they had only recently been established.

Lastly, similar to other methods such as regression analysis, QCA is vulnerable to omitted variable bias (Radaelli & Wagemann, 2019). Despite the fact that parameters of fit, like consistency and coverage, indicate the degree to which omitted variable bias may affect results, our QCA may not include all conditions that affect mobile money adoption. While

our model might specify all sufficient configurations for our selected conditions, this does not preclude the existence of other sufficient configurations of conditions that were not specified — for example, because they are not measurable. Therefore, like all empirical approaches, the present results should be considered temporary until more accurate models are specified. Additionally, this further underlines the importance of proper theorizing to highlight the results’ plausibility (Radaelli & Wagemann, 2019).

3.5.4 Avenues for Further Research

We based our study on the empirically established premise that mobile money has a welfare-enhancing impact on unbanked populations in emerging markets (e.g., Jack & Suri, 2014; Suri & Jack, 2016; Blumenstock et al., 2016). Recent evidence, however, suggests that mobile money may also have negative side effects like over-borrowing among financially illiterate consumers (Hamdan, 2019). Future research could investigate firm strategies and regulations suitable to mitigate such negative side effects. Our findings also suggest that indigenous (especially African) start-ups often seem to have lower adoption rates than international MNOs. Nevertheless, some African fintech start-ups have managed to become commercially successful in market niches — for example, as intermediaries between various mobile money providers (Quartz, 2019). Future research could provide deeper insights into how African fintech startups can overcome these challenges. On a related note, emerging markets have recently experienced an increased uptake of other fintech solutions like neo-banks and cryptocurrencies (Hammerschlag et al., 2020). The latter, for instance, could be used for remittances and cross-border payments (UN, 2016). Future research could investigate how such fintech innovations may affect mobile money adoption, and vice versa.

Finally, this study’s data precede the COVID-19 pandemic, which may have affected consumer behavior. Tentative evidence indicates that the pandemic may have promoted the use of mobile money as a contactless form of money transfer (GSMA, 2021; Tonuchi, 2020),

but the evidence is not entirely clear cut. While account registrations seem to have increased in some countries, users do report a significant reduction of incoming transactions, possibly as a result of negative economic shocks (GSMA, 2021). This may negatively affect providers whose main source of revenues are transaction fees. Since mobile money data for any given year release with a significant time lag, and mobile money data on a service-level are difficult to obtain, it is too early to make a concluding assessment on the pandemic’s impact or conduct our study with data from the pandemic. Once reliable, post-pandemic data become available, future research should consider how the pandemic, as an additional environmental factor, may have affected mobile money adoption, and which firms were best positioned to use it to reach higher adoption rates.

3.6 Conclusion

Our research question asked: Which combinations of factors at the level of providers and their interaction with target market institutions are associated with the widespread adoption of mobile money services? Our study suggests that mobile money’s adoption is determined by various combinations of firm characteristics, decisions, and institutional factors. We have identified four distinct paths associated with successful mobile money services. First, services with significant market share may become highly adopted irrespective of the absence or presence of enabling institutions. Second, the adoption of most services depends on enabling environments — either through regulation or sufficient mobile and educational infrastructure. Lastly, a very small number of sophisticated fintechs are able to establish mobile money services in countries with more developed financial markets successfully. These findings contribute to the literature by moving beyond the isolated net effects of country institutions, firm-level decisions, and firm characteristics that are prevalent in previous research on the success factors of mobile money (e.g., GSMA, 2016). Furthermore, we have empirically applied theoretical considerations that had thus far been considered

only in qualitative single-case studies (e.g., Onsongo, 2019). We have mobilized institutional theory to integrate various explanatory variables that had previously been considered separately. Our study has thereby considerably increased the ability to analyze and capture the complexity of the emergence of successful financial inclusion through mobile money. Furthermore, we have explored and demonstrated the usefulness of institutional theory in explaining the success of inclusive innovations in emerging markets.

We derived a three-stage model that may help providers of mobile money and other inclusive innovations in emerging markets to estimate whether their services could be adopted. First, we recommend providers to analyze whether they have sufficient financial resources, technological capabilities, and consumer trust to gain legitimacy in their target markets. Mobile network operators who belong to international groups seem more likely to succeed, but there may also be a role for fintech start-ups. Second, providers are advised to investigate their target market's institutional environment. Our results suggest that mobile money services are most likely to succeed in markets that exhibit an optimal institutional corridor, which couples sufficient consumer education and mobile infrastructure with relatively underdeveloped financial service sectors. Third, we recommend providers to increase their service scope, if their target market's financial service industry is more developed. Additionally, irrespective of their target markets institutions, providers should prioritize last mile delivery by providing a dense agent network.

4. Cutting a Pathway Through the Jungle: Social Entrepreneurs' Navigation in Complex Institutional Environments¹⁴

Co-authored with Felix Ostertag, Carolin Waldner and Emiel Eijdenberg

Abstract

How social entrepreneurs operate in complex institutional environments and the extent to which varying perceptions of institutional catalysts and impediments impact their navigation approaches remain untold. Based on an abductive approach of 31 interviews with social entrepreneurs in Kenya and Rwanda, our findings point to distinct approaches and underlying mechanisms that social entrepreneurs employ to navigate in complex institutional environments: adaptation-as-accelerator and interwoven circumvention for catalyzing environments and adaptation-as-necessary-evil, interwoven circumvention, and distinct circumvention for impeding environments. We illustrate these approaches and their mechanisms by drawing on selected cases with a specific emphasis on informal institutional catalysts and impediments. Through a contextualized micro lens on institutional theory, the findings enrich the social entrepreneurship literature in relation to both institutional voids and institutional work.

Keywords: Social enterprises, Institutional theory, Emerging economies, Contextualization, Qualitative research

¹⁴ Accepted and presented at EGOS 2021 by the author. Accepted to AOM 2022 as Ostertag, F., Kabengele, C., Waldner, C. & Eijdenberg, E. (2022). Social Entrepreneurs' Agency in Complex Institutional Environments of Emerging Economies. *Academy of Management Proceedings, 2022*. Revise and resubmit at multiple highly ranked journals including Strategic Entrepreneurship Journal and Entrepreneurship Theory & Practice.

4.1 Introduction

“We don’t get to hear the story of what it looks like when you have a running business, and it doesn’t look as glorified as it may [have] looked in the very beginning. So perhaps, there is some information that we are actually missing a little bit in the narratives.”
— Hub representative #3.

Social enterprises — i.e., hybrid organizations that pursue social goals while striving for financial independence (Battilana & Lee, 2014; Haigh & Hoffman, 2012) — increasingly attract scholarly attention (Saebi et al., 2019). To overcome societal challenges and create a positive social impact, founders and managers of social enterprises interact with their institutional environment (Hoogendoorn, 2016; Stephan et al., 2015).

According to institutional theory (DiMaggio & Powell, 1983), institutions are formal and informal constraints that set the rules of the game for economic (North, 1991), political, and social interaction (Ge et al., 2019). While institutional voids are occasionally considered entrepreneurial opportunities, the absence of strong formal institutions can also resemble impediments (e.g., Mair & Marti, 2009). Therefore, the institutional environment may catalyze or impede entrepreneurial activities (Su et al., 2017), which, is why institutions affect the success (i.e., hybrid mission fulfillment) of social entrepreneurs and their enterprises (Stephan et al., 2015; van Wijk et al., 2019).

Many studies have investigated the effect of institutional environments on social enterprises at the firm level (e.g., Pache & Santos, 2010). However, institutions constitute implicitly or explicitly perceived rules or guidelines for individuals (Powell & DiMaggio, 1991). As such, each social entrepreneur is likely to perceive institutions differently, and consequently creates different understandings and interpretations of its institutional environment (e.g., Mair et al., 2012; Stephan et al., 2015). Therefore, a shift of institutional research toward the micro level (Harmon et al., 2019; Schilke, 2018) and micro-foundations, such as agency (Cardinale, 2018; Glaser et al.), appears promising to give more meaning (e.g., McPherson & Sauder,

2013) to somewhat ambiguous and barely congruent results on firm-level strategies to deal with complex institutions (e.g., Bertels & Lawrence, 2016). More specifically, investigating social entrepreneurs' agency (Emirbayer & Mische, 1998; McMullen et al., 2020), which is an individuals' opportunity creation propensity (Goss & Sadler-Smith, 2018) to eventually stimulate institutional changes (Lawrence et al., 2011), may improve our yet limited understanding of why and how social enterprises navigate complex institutional environments in certain ways.

The co-existence of formal and informal institutions (Saka-Helmhout et al., 2020) bears the potential for clashes (Bjerregaard & Luring, 2012; Mair & Marti, 2009; Mair et al., 2012). With respect to emerging economies, in which informal institutional pillars may operate all the more strongly (Mair et al., 2012), research, however, tends to focus on formal institutions (e.g., Barasa et al., 2017; Oluwatobi et al., 2015), while largely ignoring informal ones. This is especially the case for the African context (Saka-Helmhout et al., 2020), which constitutes a key setting to further explore entrepreneurial activities (George, Corbishley et al., 2016).

Given this knowledge gap on social entrepreneurs' approaches to navigating complex informal institutional environments of emerging economies (Cherrier et al., 2018), zooming in on sub-Saharan social entrepreneurs and their perception of complex informal institutional environments may lead to valuable insights (Littlewood & Holt, 2018; Rivera-Santos et al., 2015). In line with the reasoning above, this paper addresses the following research question: How do social entrepreneurs' perceptions of informal institutions influence their practices to navigate in the complex institutional environments of emerging economies to ultimately fulfill their hybrid mission?

To answer this research question, we applied an abductive research approach (Kump, 2021; Locke et al., 2008; Spens & Kovács, 2006) and conducted a qualitative content analysis (Duriau et al., 2007) using the constant comparative method (Glaser, 1965). Our analysis is

based on 31 semi-structured interviews with social entrepreneurs from Kenya and Rwanda, which were complemented by interviews with hub representatives and archival data for triangulation.

Our results point to distinct approaches and underlying mechanisms that social entrepreneurs employ to navigate in complex institutional arrangements (Seo & Creed, 2002): adaptation-as-accelerator and interwoven circumvention for catalyzing environments and adaptation-as-necessary-evil, interwoven circumvention, and distinct circumvention for impeding environments. While adaptation approaches are suitable to stimulate small-scale institutional changes, it is the circumvention approaches that enables social entrepreneurs to bypass impeding informal institutions (through disruptive tactics) to eventually increase social enterprises' social impact. Further, social entrepreneurs almost fully disregard the potential of catalyzing informal institutional conditions to spur comprehensive institutional changes toward sustainable development.

We contribute to the literature on social entrepreneurship in relation to both micro-institutional research and institutional voids. First, we transcend the duality of the contemporary discussions surrounding institutional voids versus institutional support in the social entrepreneurship literature (e.g., Desa, 2012; Estrin et al., 2013; Littlewood & Holt, 2018; Mair et al., 2012), and argue that the discussion should move beyond the either-or perspective. Both seemingly opposing and complex pressures apply to social enterprises in emerging economy settings. Second, we respond to the calls for more contextualization of entrepreneurship research (e.g., Watson, 2013; Welter, 2011; Welter et al., 2019) and complement previous research on beneficial and adverse institutional conditions (Beule et al., 2020; Doblinger et al., 2016; Stephan et al., 2015). More specifically, through a micro lens on institutional theory (Cardinale, 2018; Harmon et al., 2019; Powell & Rerup, 2017;; Powell & Colyvas, 2008), considering entrepreneurial agency in particular (McMullen et al.,

2020), our findings emphasize the importance of individual perceptions of institutional environments (e.g., van Wijk et al., 2019) to eventually contribute to sustainable development.

4.2 Literature Review

4.2.1 Social Entrepreneurship in Emerging Economies Through the Lens of the Institutional Voids and Support Perspectives

Institutions are the rules and incentives that structure and guide human interactions in society (North, 1991). Therefore, they are also important prerequisites for the proper functioning of markets, because institutions arise to reduce transaction cost and enable proper market interactions (Coase, 1937; Fligstein, 2001; Williamson, 1975). They determine the rules under which economic transactions take place and under which enterprises in general and social enterprises in particular operate (Khanna & Palepu, 1997). Institutions can be further differentiated into formal institutions (e.g., laws, regulations, policy guidelines) and informal institutions (e.g., norms, values, customs) (North, 1991). More specifically, the literature has identified three institutional pillars, depending on which levels of institutions influence human behavior: the regulative, cultural-cognitive, and normative pillars (Scott, 2013). The cultural-cognitive pillar refers to culturally accepted mental models that are internalized and operate mainly at the subconscious, individual level. In contrast, the normative pillar refers to more explicitly and socially expected “appropriate” behavior at the societal, professional, or organizational levels. Lastly, the regulative pillar refers to explicit government regulations, legislative guidelines, and laws (Cherrier et al., 2018; Scott, 2013). Against this background, emerging economies differ significantly in their institutional make-up from more advanced economies which justifies granting them consideration (Rivera-Santos et al., 2015; Kolk & Rivera-Santos, 2018; George, Corbishley et al., 2016).

We define emerging economies as low- or middle-income countries that exhibit rapid growth and economic transformation toward a more formalized market economy (Hoskisson et al., 2000; Tracey & Phillips, 2011). One key characteristic of emerging economies is that they frequently exhibit institutional voids (Khanna & Palepu, 1997; Khanna & Palepu, 2000; Mair & Marti, 2009). Institutional voids occur when countries either lack markets supporting formal institutions (such as appropriate laws, regulations, property rights) or when such institutions are not sufficiently enforced (Webb et al., 2010). Furthermore, emerging economies frequently exhibit underdeveloped infrastructure (such as roads, electricity, and telecommunication), which can be regarded as part of the institutional environment in a broader sense, since markets or production would often not be possible otherwise (Webb et al., 2010). Hence, the proper functioning of economies requires the presence of institutions (Oriaifo et al., 2020), and institutional voids can significantly complicate enterprises' operations as labor, capital, and product markets may not operate as desired (Khanna & Palepu, 1997; Khanna & Palepu, 2000). Therefore, entrepreneurship scholars have long recognized the importance of shedding light on the particular circumstances of operating enterprises in emerging economy contexts (Gao et al., 2017; Tracey & Phillips, 2011).

Following this reasoning, social entrepreneurship in emerging economies may differ distinctly from its counterpart in more advanced economies. Indeed, a small but growing body of literature has recently started to investigate the nature of social entrepreneurship in emerging economies (e.g., Agarwal et al., 2020; El Ebrashi & Darrag, 2017). The institutional voids that such economies are subject to may have different effects on social enterprises compared to more traditional enterprises. Initially, the literature has perceived institutional voids mainly as an impediment to smooth business operations (e.g., Hoskisson et al., 2000; Khanna & Palepu, 1997; Meyer et al., 2009). Therefore, scholars have focused heavily on identifying strategies to overcome institutional voids (Gao et al., 2017; Khanna et al., 2005).

However, another literature stream proposes that institutional voids may actually present a business opportunity (Mair & Marti, 2009; Onsongo, 2019). Enterprises may, for example, establish their business model as a commonly accepted standard for an institutional void (Tracey & Phillips, 2011). These seemingly opposing views have sparked a scholarly debate in the social entrepreneurship literature weighing the so-called *institutional support perspective* against the *institutional void perspective* (Stephan et al., 2015).

The institutional void perspective proposes contexts that are subject to more institutional voids (such as emerging economies) have more social needs, which increases opportunities for social enterprises whose business models revolve around resolving such needs (Mair & Marti, 2009; Stephan et al., 2015; Tracey & Phillips, 2011). For example, while insufficient educational institutions may complicate talent acquisitions for traditional enterprises, social enterprises whose business model revolves around promoting education may be in higher demand. The institutional support perspective, in contrast, argues that social entrepreneurship is more likely to thrive in contexts with a more active government that provides a favorable institutional and structured framework (Estrin et al., 2013; Hoogendoorn, 2016; Stephan et al., 2015). While Stephan et al. (2015) empirically demonstrated that — in aggregate — social entrepreneurship is more prevalent in contexts with higher institutional support, the fact remains that social entrepreneurs in emerging economies remain exposed to potentially opposing pressures creating a complex institutional environment.

An appropriate example to concretize this point may be the case of the mobile money industry in Kenya as recounted by Onsongo (2019). The absence of a well-developed product and capital market in Kenya's financial service industry meant that most Kenyans did not have access to a bank account. As a result, urban residents were unable to send money to their families in rural villages. A social initiative of Vodafone and its subsidiary Safaricom

perceived this market void as an opportunity to provide their social innovation as a solution, enabling Kenyans to store and transfer money via their mobile phone. Yet, the same capital market voids in countries like Kenya also complicates the attraction of capital for firms like M-Pesa. Inappropriate or lacking regulation and underdeveloped mobile network infrastructure may also impede the roll-out of their social innovation. Thus, institutional voids can be both the source of an enterprise's social business model and, at the same time, complicate its realization.

4.2.1 Social Enterprises Navigating Complex Institutional Environments: The Role of Social Entrepreneurs' Agency

Formal institutional voids do not equal the absence of institutions altogether. Contrarily, in emerging economies, weak formal institutions have been found to be substituted by informal institutions (Saka-Helmhout et al., 2020). Hence, the two other informal institutional pillars (viz. cultural-cognitive and normative) may operate all the more strongly in emerging economy contexts (Mair et al., 2012). This means that the formal institutions associated with the emergent market system co-exist or, in some cases, even clash with the pre-existing informal institutional arrangement consisting of norms and customs (Bjerregaard & Luring, 2012; Mair & Marti, 2009; Mair et al., 2012). The co-existence of both formal and informal institutions, coupled with the potentially contradictory effects of institutional voids on social enterprises and the multiple logics that govern the latter (e.g., Battilana & Dorado, 2010), creates an extraordinarily complex environment in which social enterprises operate. The ongoing processes at meso and macro levels “produce a complex array of interrelated but often mutually incompatible institutional arrangements” (Seo & Creed, 2002, p. 225) that, as soon as they are experienced by individuals — such as social entrepreneurs — stimulate the latter to transform their institutional environment (Seo & Creed, 2002).

In the following, we briefly review multiple renowned and emerging strategies for how social entrepreneurs and their enterprises may respond to complex institutional arrangements. We do so through the lens of institutional work and by specifically referring to the concept of entrepreneurial agency. This perspective “attends more closely to practice and process than to outcome—asking ‘why’ and ‘how’” (Lawrence et al., 2011, p. 57), which helps us better understand the individual’s strategies to navigate specifically informal institutions.

Institutional work “highlights how and why actors work to interpret, translate, transpose, edit, and recombine institutions” (Lawrence et al., 2011, p. 55), while agency can be understood as “a temporally embedded process of social engagement, informed by the past [...], but also oriented toward the future [...] and toward the present (as a capacity to contextualize past habits and future projects within the contingencies of the moment)” (Emirbayer & Mische, 1998, p. 963). Consequently, entrepreneurial agency, if related to institutions, encompasses an entrepreneur’s opportunity creation propensity (Goss & Sadler-Smith, 2018) that considers the entrepreneur’s embeddedness in a particular institutional environment and captures its reflection on as well as its strategic activity within this environment (Lawrence et al., 2011) to eventually stimulate institutional changes. Social entrepreneurs’ agency therefore “goes beyond new ways of doing things and implies new ways of seeing things” (Martí & Mair, 2009, p. 93), which is why agency constitutes a crucial component of any response strategy aimed toward social impact. The choices available to and picked by social entrepreneurs’ and their enterprises likely depend on the social entrepreneurs’ degree of agency. For reasons of consistency, we use the term *navigation approaches* to subsume all forms of entrepreneurial agency and social enterprises’ responses to informal institutional conditions.

In accordance with Oliver’s (1991) work on responses to institutional processes, Pache and Santos (2010) take an organizational perspective and summarize five different navigation

approaches that organizations enact because of the institutional pressures toward conformity that are exerted on them: compromise, acquiescence, avoidance, defiance, and manipulation. With their seminal work on entrepreneurship in and around institutional voids, Mair and Marti (2009) then shifted the focus of attention toward social entrepreneurs operating in emerging economies, thus enriching the hitherto predominantly organization-centered research from an individual's (i.e., entrepreneur's) perspective. Following these authors, social entrepreneurs and their enterprises may draw on six specific navigation approaches to deal with institutional contradictions and complexity: They may build provisional institutions, navigate across different institutional logics, engage in experimental projects, exploit non-aggressive ways, enhance existing institutions, and challenge existing myths, traditions, cultural beliefs, and structures of dominance (Martí & Mair, 2009). Together with Lawrence et al.'s (2011) call for a refocusing of institutional studies of organizations, Mair and Marti's (2009) approach resonated with the research community and initiated empirical studies that paid more attention to the individual by placing the entrepreneur center stage to eventually gain a better understanding of how social entrepreneurs navigate in complex institutional environments by running their own enterprises.

Despite sometimes failing to refer explicitly to entrepreneurial agency, the latest empirical research contributed to a more nuanced understanding of such navigation approaches by thoroughly investigating the individual level. Notably, by focusing on entrepreneurs that strive to create blended value which goes beyond the realization of financial revenues (Manetti, 2014; Nicholls, 2009; Ostertag et al., 2021), Arenas et al. (2020) identify three navigation approaches to how such entrepreneurs may fit in and influence the prevailing institutional environment. According to them, social entrepreneurs either maneuver around regulations, politicize economic action, or try to make sustainability convenient as soon as they are enabled by relational work. Further, with emphasis on uncertainty that is caused

by complex institutional arrangements, Bylund and McCaffrey (2017) argue that social entrepreneurs are forced to cope with their environment either by abiding, altering, or evasive actions if they do not want to give up their entrepreneurial activities and exit the institutional environment. Additionally, Cherrier et al. (2018) suggests somewhat more reactive responses to complex institutional conditions. Depending on the type of complexity, they identify appropriation, differentiation, integration, and working-through as suitable navigation approaches for social entrepreneurs to create blended value in complex institutional environments (Cherrier et al., 2018).

Although entrepreneurship may be considered “as a means by which agents transform the social structures in which their actions are embedded” (McMullen et al., 2020, p. 1210), literature on both streams of institutional and social entrepreneurship has not yet identified the core processes underlying entrepreneurial agency (McMullen et al., 2020). The findings on chosen approaches to navigating complex institutional environments appear to be inconsistent (Bertels & Lawrence, 2016). As a result, our knowledge about the navigation of entrepreneurs (and its underlying mechanisms) is limited — especially with regard to emerging economies and informal institutions (Cherrier et al., 2018; Saka-Helmhout et al., 2020). In sum, despite various navigation approaches theoretically available to entrepreneurs, (a) the conditions under which social entrepreneurs opt for one or another approach are still unknown, and beyond this, (b) we lack knowledge on how the navigation of social entrepreneurs is shaped that is supposed to foster sustainable development in complex institutional environments.

Table 16 provides an overview of different navigation approaches in the extant literature to deal with complex institutional environments. Although this overview makes no claims of

being exhaustive, it provides fertile soil for our analysis, given the consideration of both seminal articles and most recent developments in the field.

Table 16: Strategic approaches dealing with complex institutional environments

<i>Organizational level</i>		<i>Individual level</i>		
Oliver (1991) and Pache & Santos (2010)	Martí & Mair (2009)	Cherrier et al. (2020)	Bylund & McCaffrey (2017)	Arenas et al. (2020)
<ul style="list-style-type: none"> • Acquiescence • Avoidance • Compromise • Defiance • Manipulation 	<ul style="list-style-type: none"> • Building provisional institutions • Challenging existing myths, traditions, cultural beliefs, and structures of dominance • Enhancing existing institutions • Exploiting non-aggressive ways • Navigating across different institutional 	<ul style="list-style-type: none"> • Appropriation • Differentiation • Integration • Working-through 	<ul style="list-style-type: none"> • Abiding action • Altering action • Evasive action • Exiting 	<ul style="list-style-type: none"> • Making sustainability convenient • Maneuvering around regulations • Politicizing economic action • Relational work

4.2.3 Emerging Economies in Sub-Saharan Africa as a Paragon of Complex Institutional Environments for Social Entrepreneurs to Contribute to Sustainable Development

For reasons of complex institutional arrangements, among others, the continent of Africa was brought into management research as a key setting to further explore its dynamics and entrepreneurial activities (George, Corbishley et al., 2016). Sub-Saharan Africa is a diverse region of more than one billion people who live in low, lower-middle, upper-middle, and high-income countries, 20 of whom are fragile or conflict-affected. It is one of the most upcoming regions of the world, offering great potential of youthful human capital (i.e., median age of the entire region in 2020 is estimated 18.7 years; see: UN, 2021) and abundant natural resources (e.g., minerals, natural gas, oil, gold, chromium, and platinum: UNEP, 2021) to realize inclusive growth (World Bank, 2021a).

In sub-Saharan Africa’s collectivist culture (viz. largely captured by *Ubuntu*, see: Mangaliso, 2001), extended family communities, and kinship ties are paramount for entrepreneurial activities as they provide access to resources and foster businesses (Amoako et al., 2020; George, Kotha et al., 2016; Khavul et al., 2009; Khayesi et al., 2014; Milanov et al., 2015), particularly when institutional structures (e.g., limited availability of and access to capital, weak legal protection, poor social safety net, impeding infrastructure, see: World Bank, 2021b) are weak or absent (Barasa et al., 2017; Rivera-Santos et al., 2015; Zoogah et al., 2015). Complexities like weak or absent institutions have made sub-Saharan Africa subject to an increasing number of studies on, for example, the role of intermediaries in filling institutional voids in Nigeria (Oriaifo et al., 2020), the effectiveness of institutional entrepreneurship support programs in Ethiopia (Biru et al., 2021), entrepreneurial workaround practices in institutional voids in Kenya (Sydow et al., 2022), and the effect of regulation on microfinance institutions’ sustainability and outreach to entrepreneurs in 30 sub-Saharan Africa countries (Nyanzu et al., 2019). Inherent to these studies is that entrepreneurship is often positioned as a possible solution to poverty (Kimmitt et al., 2020; Slade Shantz et al., 2018; Sutter et al., 2019), helping people to improve their living standards, which would ultimately work as a positive spiral of broad socio-economic development (Naudé, 2010).

As such, entrepreneurship — and specifically social entrepreneurship — can function as a lever to transform institutions and thus economies and societies toward sustainable development (Johnson & Schaltegger, 2020). Social entrepreneurs as well as small and medium-sized enterprises are assumed to play an important role in achieving sustainable development and the United Nations’ Sustainable Development Goals (SDGs) (Joon, 2018; Sengupta et al., 2020). They enhance efforts to achieve sustainability at the micro and meso

levels that are supposed to help economies in their transition toward sustainability at the macro-level (Rahdari et al., 2016).

Indeed, in one of the few studies on social entrepreneurship in Africa, Rivera-Santos et al. (2015) empirically demonstrate how specific elements of the continent's institutional environment influence the choices of social enterprises. This suggests that the African context could yield theoretically valuable insights for the social entrepreneurship literature, lending further justification for the appropriateness of our setting. Given the settings' relevance, it is all the more surprising that sophisticated empirical research on social entrepreneurship in the African context is still rather scarce (see Littlewood & Holt, 2018 and Rivera-Santos et al., 2015), a gap that our study seeks to fill.

To conclude, in pursuit of an improved understanding of how social entrepreneurs navigate their institutional environment and how they stimulate changes in institutions through their enterprises to eventually facilitate sustainable development, we deem social entrepreneurs from sub-Saharan Africa as a suitable subject of study. More specifically, this study focusses on sub-Saharan entrepreneurs that focus their efforts toward micro- and meso-level goals of the United Nations' SDGs, such as SDG 2 (zero hunger), SDG 4 (quality education), SDG 5 (gender equality), SDG 12 (responsible consumption and production), and SDG 16 (peace, justice, and strong institutions) — all of whom “clearly require individuals, businesses, and social organizations' attendance” (Rahdari et al., 2016, p. 355) to improve sustainable development.

4.3 Methodology

4.3.1 Context of the Study, Data Collection, and Sample

The data were collected in the agglomerations of Nairobi, Kenya and Kigali, Rwanda. Kenya and Rwanda are member states of the East African Community (EAC), a regional

intergovernmental organization that fosters trade, cooperative investments, and increased competitiveness (East African Community, 2021). The densely populated cities of Nairobi and Kigali were chosen based on their socio-economic magnetic function due to rapid urbanization which is a common trend in sub-Saharan Africa (OECD, 2019). As one might expect, increasing numbers of new urban dwellers in search of employment and better living conditions result in high entrepreneurial activity and many intermediaries supporting entrepreneurs (see, for example, Oriaifo et al., 2020's study in Nigeria).

Both Kenya and Rwanda have been defined by upward economic figures in recent years. For instance, both countries have experienced annual GDP growth rates of 5% or more for many years (United Nations Conference on and Development, 2021a, 2021b). This positive trend has attracted foreign investment and private sector confidence in both countries (World Bank, 2021c, 2021d).

While being part of the EAC, both Kenya and Rwanda are hindered by the instability of other EAC member states, such as Burundi and South Sudan, and the absence of adequate transportation linkages domestically as well as throughout the EAC region, and beyond. Kenya's complexities include the vulnerability of the economy, corruption, weak private sector investment, and poverty, among others (CIA, 2021a). Concurrently, Rwanda is challenged by low domestic savings, skills, and high costs of energy (World Bank, 2021d). These developments are reflected by statistics such as high inflation rates of consumer prices, agriculture (as opposed to manufacturing or services) as the economic backbone of both economies, and large portions of the population that live below the poverty line (i.e., in Kenya, 36.1% in 2015; in Rwanda, 38.2% in 2016) (CIA, 2021a, 2021b). One of the routes to getting out of poverty is investing in skilled and educated human capital. For the current youth, both Kenya and Rwanda expect a little more than 11 years of schooling, however,

drop-out rates are high, which significantly reduces the average years of schooling to 6.6 years in Kenya and 4.4 years in Rwanda (UNDP, 2021a, 2021b).

These aforementioned trends provide the accurate yet complex context of our research, i.e., an institutional setting of rising economic potential, and, contrastingly, socio-economic and political challenges on the other hand. For similar reasons, Kenya and Rwanda have gained attention as context for entrepreneurship studies on subjects such as poverty and institutional voids in Kenya (e.g., Kimmitt et al., 2020; Sydow et al., 2022) and entrepreneurship as catalyst of prosperity and peace in Rwanda (e.g., Tobias et al., 2013).

The first wave of data collection comprising semi-structured interviews with Kenyan and Rwandan social entrepreneurs took place in February–March 2020, just prior to sub-Saharan Africa being affected by the global COVID-19 outbreak. Our interview guide for the social entrepreneurs consisted of open-ended questions geared toward several blocks of interest: (a) business model and mission (drift), (b) external catalyzers and impediments, (c) emerging technologies, and (d) sources of financing.¹⁵ Considering the social entrepreneurs, the initial data collection for this study resulted in 39 English-spoken interviews, of which 31 social entrepreneurs appeared to have a reliable social business model. After the exclusion of unsuitable interviews, we still had a sufficient number of respondents to ensure data saturation (Guest et al., 2006; Starks & Trinidad, 2007). The remaining 31 interview recordings accounted for more than 23 hours in Kenya and Rwanda. The average interview took 45 minutes. From August to September 2021, we conducted further interviews with third parties, such as hubs’ representatives, to allow for triangulation of our data and to get an overarching perspective on how social entrepreneurs in sub-Saharan Africa handle their institutional environment. The follow-up interviews in Nairobi and Kigali took an average

¹⁵ While the question blocks (a), (c) and (d) provided insights into some informal institutional arrangements, for this study, the responses to question block B proved to be particularly informative.

of 39 minutes. All interview recordings were transcribed verbatim by the authors of this paper and by a professional transcription service. Table 17 shows the most important information of the 31 interviewed social entrepreneurs and the three hub representatives.

Additionally, we collected archival data to further triangulate our data sets (Moran-Ellis et al., 2006) for more accurate interpretations and to validate (Flick, 2004) that the perceived informal institutional conditions we encountered during our interviews with social entrepreneurs were not only subjective impressions of a single entrepreneur. For that purpose, we screened various media against the backdrop of issues reported by our social entrepreneurs; hence, whether third parties in emerging economies of the sub-Saharan region perceived and experienced the institutional environment in a similar manner. Please refer to Appendix 3 to get an exemplary overview of our archival data related to different kinds of formal and informal catalyzers, as well as impediments.¹⁶

4.3.2 Analytical Procedures

We started our analysis inductively with “recognizing patterns of relationships among constructs within and across cases and their underlying logical arguments” (Eisenhardt & Graebner, 2007, p. 25). As soon as we became immersed in our data (Gehman et al., 2018), we observed that social entrepreneurs in sub-Saharan Africa differ significantly in the way they perceive and subsequently approach their institutional environment. This insight led us to question whether current knowledge on *navigation approaches* is sufficient to explain how social entrepreneurs navigate the complex institutional environments of emerging economies.

¹⁶ The full list of archival information used can be provided upon request.

Table 17: Overview of case interviews

Social entrepreneur	Social entrepreneur's gender	Number of employees of social enterprise	Founding date of social enterprise	Country of social enterprise	Interview recording (in minutes)
1	Male	3	2017	Rwanda	46
2	Male	1	2017	Rwanda	33
3	Male	3	2020	Rwanda	29
4	Male	6	2013	Rwanda	36
5	Male	2	2019	Rwanda	46
6	Female	9	2015	Rwanda	53
7	Male	2	2020	Rwanda	28
8	Male	3	2019	Rwanda	35
9	Female	5	2017	Rwanda	20
10	Male	8	2015	Rwanda	26
11	Female	8	2017	Rwanda	42
12	Male	6	2018	Rwanda	41
13	Female	4	2018	Rwanda	27
14	Female	71	2007	Rwanda	25
15	Female	21	2004	Rwanda	43
16	Male	25	2016	Rwanda	64
17	Female	2	2019	Rwanda	36
21	Female	5	2013	Rwanda	31
24	Male	600	2003	Kenya	111
25	Male	25	2011	Kenya	36
27	Female	2 permanent, 30 casual	2018	Kenya	24
28	Male	5 full time, 6 consultants	2018	Kenya	94
29	Male	10	2018	Kenya	85
30	Male	3 full time, 3 part-time	2016	Kenya	82
31	Female	N/A	2016	Kenya	37
32	Female	1 full time, 2 part-time	2013	Kenya	54
34	Female	2 full time, 1 part-time	2014	Kenya	41
35	Male	8	2017	Kenya	39
36	Male	4	2019	Kenya	51
37	Male	3	2019	Kenya	53
39	Female	5 full time, 10 part-time	1995	Kenya	27
Hub representative	Gender	Number of employees	Founding date	Country	Interview recording (in minutes)
1	Female	N/A	N/A	Kenya	36
2	Male	N/A	N/A	Rwanda	34
3	Male	N/A	N/A	Kenya	47
<i>Note.</i> All presented information is verbatim; “N/A” refers to no information given by social entrepreneur or hub representative.					

Moreover, our doubts about this were strengthened by inconsistent findings on individuals' practices to shape organizational responses under complex institutional conditions (e.g., Bertels & Lawrence, 2016) and yet unanswered and reinforced calls for further research on entrepreneurial agency in the fields of social and institutional entrepreneurship (McMullen et al., 2020) in emerging economies (Cherrier et al., 2018).

As abductive analysis helps to generate “novel theoretical insights that reframe empirical findings in contrast to existing theories” (Timmermans & Tavory, 2012, p. 174), we deemed it to be the most suitable approach for our study's purpose. Consequently, we transitioned toward an abductive approach (Kump, 2021; Locke et al., 2008; Spens & Kovács, 2006) and initiated an iterative process (Lundberg, 2000; Taylor et al., 2002), in which we moved “back and forth between theory and empirical data” (Wodak, 2004, p. 188). The purpose of this process was to conflate individual and organizational response strategies in complex institutional arrangements (Arenas et al., 2020; Bylund & McCaffrey, 2017; Cherrier et al., 2018; Pache & Santos, 2010) and eventually enrich both support and void perspectives of institutional theory (e.g., Desa, 2012; Estrin et al., 2013; Littlewood & Holt, 2018; Mair et al., 2012; Stephan et al., 2015). We continued with the iterations until we reached theoretical saturation for our categories and group of cases (Flick, 2014).

In within-case analysis, we focused on identifying patterns of time-ordered events and effects (Sonenshein, 2014), thus taking a processual lens (Busch & Barkema, 2021). To derive the best explanations (Mantere & Ketokivi, 2013) on how social entrepreneurs navigate complex institutional environments, we then engaged in cross-case comparisons to corroborate our findings (Eisenhardt & Graebner, 2007; Yin, 2014) on the navigation phenomena in emerging economies. Semantic validity was ensured by comparing quotes subsumed under the same construct.

Our data analysis comprised multiple steps. On completion of the first wave of field research, we applied qualitative content analysis (Duriau et al., 2007) using the constant comparative method (Glaser, 1965) for our recordings and notes. While the coding guidelines were developed jointly during several rounds of discussion, the coding was done independently by two coders to reduce subjectivity to an acceptable level (Barratt et al., 2011). The whole coding process consisted of testing, comparing, discussing, and retesting in different stages, which helped to further increase internal validity by reducing discrepancies in the coders' mental schemes (Seuring & Gold, 2012). To demonstrate rigor in our qualitative research (Pratt, 2008; Tracy, 2010), we followed Gioia et al.'s (2013) concept development approach, as well as van Maanen's (1979) recommendations to arrange the data according to three dimensions: first-order categories, second-order themes, and aggregate dimensions. Figure 4 illustrates the results of this iterative process.

Despite analyzing perceptions related to both formal and informal institutions, during our abductive approach we realized that knowledge on how social entrepreneurs deal with informal institutions is particularly scarce. Therefore, we decided to highlight findings related to the informal institutional environment.

4.4 Findings

4.4.1 A Bird's-Eye Perspective on Navigating Informal Institutional Environments: Incorporating Additional Data

Emerging economies require social entrepreneurs to navigate a complex arrangement of institutions to fulfill their hybrid mission and contribute to sustainable development. Varying perceptions of the institutional environment influence navigation approaches and can broadly be distinguished according to the social entrepreneurs' evaluation of these as either being catalysts or impediments to their hybrid mission.

First order categories	Theoretical reflection	Second order themes	Aggregate dimensions
Practices related to the informal and formal institutional environment			
<ul style="list-style-type: none"> Adjusting to immediate stakeholders Reframing organizational purpose Differentiating the own organization clearly 	<div>Altering action; making sustainability convenient; differentiation</div>	<div>Organizational adjustments to stakeholder & market demands [15]</div>	Approaches to mission <div>Adaption-as-necessary-evil</div> <div>Adaption-as-accelerator</div> <div>Adapting</div>
<ul style="list-style-type: none"> Showing conformity/acting appropriately Limiting or complying with institutions Finding compromises Adhering to institutional environment 	<div>Appropriation; acquiescence; compromise; abiding action</div>	<div>Signaling conformity and actions of compliance with institutions [17]</div>	
<ul style="list-style-type: none"> Balancing/embedding conflicts/contradictions Coordinating contradictory inst. logics Blending one in and harmonization Avoiding conflicts 	<div>Navigating across different institutional logics; integration; working-through</div>	<div>Weakening potential institutional conflicts (sometimes with supporters) [22]</div>	
<ul style="list-style-type: none"> Introducing non-aggressive ways Experimenting, taking small steps Enhancing/improving existing institutions Challenging informal institutions to create change 	<div>Enhancing existing institutions; exploiting non-aggressive ways; engaging in experimental projects</div>	<div>Soft tactics to change [54]</div>	
<ul style="list-style-type: none"> Neutralizing conflicts, lobbying for a change in norms, or controlling conflicts Dismissing, ignoring, challenging or denouncing institutions to create change Challenging informal institutions to create change 	<div>Manipulation; defiance; challenging existing myths, traditions, cultural beliefs, and structures of dominance</div>	<div>Disruptive tactics to change [18]</div>	<div>Stimulating changes</div> <div>Support to facilitate change [19]</div> <div>(Re-)interpretation of institutional environment [14]</div> <div>Despair of the institutional environment [13]</div> <div>Developing alternatives to or bypassing of an institutional status quo (sometimes with supporters) [24]</div> <div>Circumventing</div> <div>Collaborative work</div>
<ul style="list-style-type: none"> Cooperating with other actors and supporters to create change 	<div>Relational work</div>		
<ul style="list-style-type: none"> Changing, extending or re-interpreting existing formal institutions 	<div>Politicizing economic action;</div>		
<ul style="list-style-type: none"> Relocating responsibility to act to other actors Exiting institutional environment 	<div>Evasive action; exiting</div>		
<ul style="list-style-type: none"> Building provisional institutions Building a facade of adhering or decoupling Reputation of existing institution 	<div>Avoidance; building provisional institutions</div>		

Note.
Numbers in square brackets indicate the amount of second order themes found in relation to the informal institutional environment only.

Overall, our interviews with social entrepreneurs indicate that the informal institutional environment in emerging economies seems to deter social entrepreneurs from blended value creation with radical institutional changes. This impression is also shared by hubs operating in the respective regions, which are also well familiar with the institutional environment and the activities of social entrepreneurs. Their representatives concluded that the socio-cultural environment continues to be reluctant to change and that its perception is “that [social entrepreneurs] are in this for business, and the social entrepreneurship mindset is not there yet. The beneficiaries see it [as] more of a business. It is that suspicion,” says Hub representative #2, that constitutes a challenging environment. With reference to the sub-Saharan society, Hub representative #1 reinforces this by saying that although “social enterprise is absolutely the future of work [...] we will never get there unless we get our structures right, unless we get our mindsets and cultures right. Unfortunately, we think the impact comes from big corporations.” Further, the interviewed hub representatives unanimously argue that social entrepreneurs themselves struggle in motivation and perseverance to overcome the hurdles of complex informal institutional environments and achieve a higher impact:

It's perseverance and [...] perhaps also the way that you need to bend some corners and do things in different ways to get your way forward. Otherwise, the cue is already too long ahead of you if you just go the usual way. (Hub representative #3)

So, I think that [the missing commitment] is a problem. There is an awakening, they [the social entrepreneurs] know there is a gap, they know what they need to do to fix the gap, but just that commitment of applying themselves to fix that gap is what is lacking. (Hub representative #1)

Against this backdrop, we found that the social entrepreneurs in our sample generally apply two overarching navigation approaches, in which they either adapt to or circumvent the institutional environment or a combination of both. Both *adaptation* and *circumvention* start with a critical reflection on informal institutions (i.e., an interpretation of the informal

institutional environment). Afterwards, social entrepreneurs make use of different adaptation and circumvention mechanisms, i.e., concrete consecutive practices that help them to navigate the environment. The mechanism they apply depends on whether they perceive an informal feature of their institutional environment as rather catalyzing or impeding. In general, some social entrepreneurs tended to perceive their institutional environment as predominantly catalyzing, while others tended to perceive it as predominantly impeding. Whichever prevailed (if any), the navigation approaches used, and their underlying mechanisms remained unaffected. These practices, which build on each other, however, constitute only a means to facilitate a more distant end. They are intended to improve social entrepreneurs' blended value creation capabilities and eventually facilitate sustainable development through consciously or subconsciously triggering changes in the entrepreneurs' institutional environment with either soft or disruptive tactics. Finally, social entrepreneurs assess the initiated institutional change in light of their mission fulfillment. This assessment, which is accompanied by a reinterpretation of the institutional environment, then launches a new iteration of the same or another navigation approach.

In the following sub-chapters, we first describe the overarching features of adaptation (which can be further distinguished into adaptation-as-necessary-evil and adaptation-as-accelerator) and circumvention approaches (differentiated according to interwoven or distinct circumvention) before we showcase specific mechanisms underlying social entrepreneurs' navigation approaches to deal with informal institutions in emerging economies. Finally, when we briefly present country-specific insights, we also refer to navigation approaches in relation to formal institutional features.

4.4.2 Mechanisms of Navigation Approaches in Impeding Informal Institutional Environments

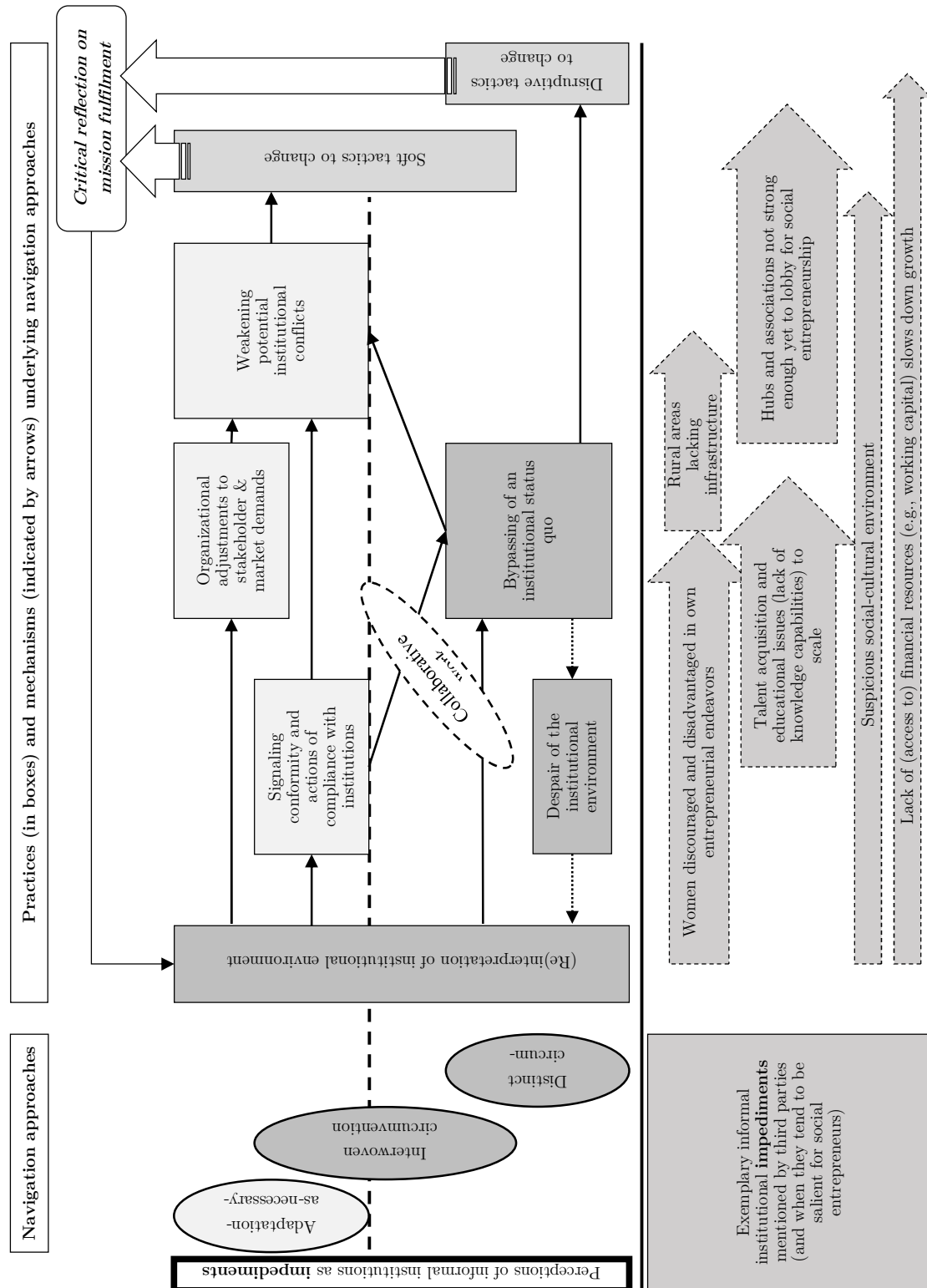
When social entrepreneurs perceive informal institutional arrangements to be rather impeding for sustainable development, they navigate in such an environment either by (a) adjustments that weaken potential conflicts in their institutional environment (i.e., *adaptation-as-necessary-evil*) or (b) means of bypassing the institutional status quo (i.e., *interwoven and distinct circumvention*). Both approaches are often combined with collaborative work (see Figure 5).

Faced with informal impediments, social entrepreneurs often try to *adapt* to their institutional environment because they perceive that this needs to be done to fulfill their hybrid mission (i.e., *adaptation-as-necessary-evil* navigation). They look for ways to better adjust to their immediate beneficiaries and the prospective target group. They do so to weaken potential conflicts in their institutional environment. Social entrepreneur #29 that operates an online platform for predictive farming, which is based on big data and particularly catered toward rural as well as urban farmers,¹⁷ serves as a good example in that regard. Despite the availability of the technology to the farmers and the provision of financial incentives through a pricing model that is adapted to the individual farmer's income, the social entrepreneur struggled to convince them of his service.

More often than not, you'll find they [the farmers] have a smartphone, but they're not using it because, why do you need a smartphone? Me, I have a simple life. I just wake up, do my farming, at the end of the day, call it a day, and that's that. And it's a simple life, which I admire. [...] But if you go to this farmer and you show them the need for a smartphone, showing people about the platform, you'll find there's a time when [they ask] like, so what exactly is this?

¹⁷ This may sound counterintuitive at first glance, but sub-Saharan farmers often need to commute to urban centers to expose their agricultural produce for sale. Moreover, farmers living in or close to urban areas often have fields scattered over various rural areas, whose cultivation they coordinate.

Figure 5: Navigation approaches/mechanisms in impeding informal institutional environments



To deal with these challenges, he adapted his selling strategy to better suit the market: he organized meetings with rural farmer associations to showcase his product and integrated a group chat function into his application to allow a better exchange among farmers (social entrepreneur #29).

Another navigation approach to deal with institutional impediments that we found in our data is a *circumvention approach*, which can either be employed on its own (i.e., distinct circumvention) or happen as a blended approach that integrates circumvention and adaptation practices (i.e., interwoven circumvention). Central to circumventing navigation is the practice of bypassing an institutional status quo, which reflects social entrepreneurs' tendency to repudiate existing institutions and/or establish provisional institutions to better achieve their hybrid mission to ultimately contribute to sustainable development.

Instead of adjusting to stakeholders, we observed that social entrepreneurs' bypassing practices are often paired with signaling conformity. This means that social entrepreneurs try to comply with or adhere to some existing institutions by finding compromises or through appropriate activities while they intend to circumvent pressing institutional impediments. Actions that are accepted by and expected from the social enterprises' immediate socio-cultural environment then help weaken institutional conflicts that would otherwise continue to smolder as unspoken issues due to social enterprises' institutionally challenging way of doing business. To be able to apply such *interwoven circumvention* to navigate their institutional environment, social entrepreneurs rely heavily on their networking capabilities, which has also been highlighted by hub representative #3: "People are better in using networks [in sub-Saharan Africa], and social media networks is definitely used a lot stronger, and peer networks is definitely something that plays a much bigger role [...] for social entrepreneurs," to mitigate potentially arising issues from their non-compliance with local norms.

A good example for the interwoven circumvention was provided by social entrepreneur #14, who emphasized the important role of local leaders that helped her gain legitimacy through signaling conformity. This entrepreneur mainly empowers disadvantaged women through improving their reading and writing skills as well as teaching them how to use a sewing machine to produce handcrafts for tourists, with the objective to increase women's self-sufficiency, which ultimately strengthens the local community's resilience. She said:

Of course, you recruit them [the disadvantaged women] and you bring them here, then husbands are so, you know, what are you going to do there, you are learning other things, you are meeting people, you know. [...] But slowly, slowly, we also communicate to the local leaders, and they really were giving messages through neighborhoods, [and] they announce something for us. So slowly, slowly, they come to understand us. [...] For example, now in our course we have some men who have joined us. Learning how to read and write, learning how to use the sewing machine, and also learning how to do the hair dressing.

Although this entrepreneur remains local in scope, she has been able to extend—and thus adapt—her business model to market demands by educating interested men, too.

A further remarkable illustration for interwoven circumvention was provided by social entrepreneur #15 that trains and employs women in handcrafts. However, in contrast to the previous example (social entrepreneur #14), this entrepreneur focuses only on those women who were severely affected by the genocide in Rwanda and who have no employment, education, or money to make a living. Early on, this social entrepreneur therefore faced the challenge of pacifying different ethnicities at work by creating a workspace of mutual trust which opposed the cultural heritage of hatred that continued to exist subliminally in some neighborhoods. “The beginning was not easy, [...] in a country that has gone through war, people [refrained from] working together, because this is a neighbor of somebody who killed the other neighbor, and they were not comfortable to work with,” she said. To weaken institutional conflicts, she has overcome this hurdle of mistrust by starting small with a

bottom-up approach that relied on grassroots leaders who recruited “the poorest of the poor” (i.e., those women who were in severe need), who were not perceived to pose any potential threat to the sending community and had little other alternatives to make a living. She cautiously taught them basic knowledge in arts, reading, writing, and mathematics step-by-step. By emphasizing the importance of acting as role models for their communities to her new employees, over the last few years, this entrepreneur has managed to create a large-scale business with more than 5,000 peer-recruited women as handcraft producers, who have never been to school before. As such, this social enterprise circumvented the pressing institutional impediment of interethnic tensions with soft tactics and positioned her enterprise as a new institution that provides access to education and practical knowledge for disadvantaged women, who would have never had the opportunity to join institutions of the traditional educational system otherwise.

While several social entrepreneurs bypass the institutional status quo by weakening institutional conflicts with the aid of soft tactics that change the institutional environment, some attempt to circumvent their institutional environment with rather disruptive (i.e., outside-the-box) tactics, for which they draw on *distinct circumvention*. Social entrepreneur #11, for instance, strives to radically alter the institutional status quo of high numbers of teen pregnancies with peer education. Specifically, her enterprise advocates against teen pregnancy and sells feminine hygiene products that are produced by teenage mothers, whereby the revenues are reinvested into trainings and workshops, as well as the maintenance of an e-counseling platform about menstrual hygiene. She tries to “turn [...] young girls into peer educators of their fellows because [she] found that girls are not connecting to elders when it comes to sexual reproductive health. They’re shy to ask questions.” Convinced that her approach is effective in stimulating ambitious changes toward sustainability in existing informal institutions (i.e., to get rid of the cultural

acceptance of teen pregnancy), she deliberately neglects the opportunity to work with any other established institution: “I know that we have Ministry of Gender and Family Promotion in place. We have plenty [of] NGOs. But what if I come up with a solution that is youth friendly, that is owned by youth and for young girls?” she asks rhetorically.

Although most social entrepreneurs in our sample were able to navigate institutional impediments in such a way that they stimulated at least small-scale changes in their informal institutional environment, this is not a given for all informal impediments. Specifically, ambitious circumvention approaches that would potentially require disruptive tactics are often accompanied by a possible despair of the institutional environment, which in turn causes social entrepreneurs to reinterpretations of the institutional environment before creating impact. Reasons for such a desperation are manifold; for example, people could be reluctant to change, too selfish to collaborate, or simply suspicious about new developments that potentially threaten their habits. “Of course, any change has a resistance. And some people might be comfortable because they’re benefiting from the current processes,” commented social entrepreneur #35, who made this experience in his efforts to digitally transform farmers’ unions through training and sensitization campaigns. Social entrepreneur #2 criticized the selfishness of people in emerging economies, which has — according to him — its origins in severe poverty and their fear of being exploited (again). In his efforts to train disadvantaged people in basic internet skills, he perceived the scaling of his enterprise to be limited because of people’s general tendency to prevent knowledge sharing:

The education system in Rwanda is very, very poor. It’s really hard to get sources of information. Even people who know things, don’t want to share. They are locked people. [...] Maybe it’s not only in Rwanda only, maybe it’s in all developing countries. In countries which are developing, people are so selfish. You know, they don’t want to tell you what they know. They are just putting financial goals... So, they think that when they share the idea that they know, you maybe steal their ideas [...] they don’t want you to be ahead of them.

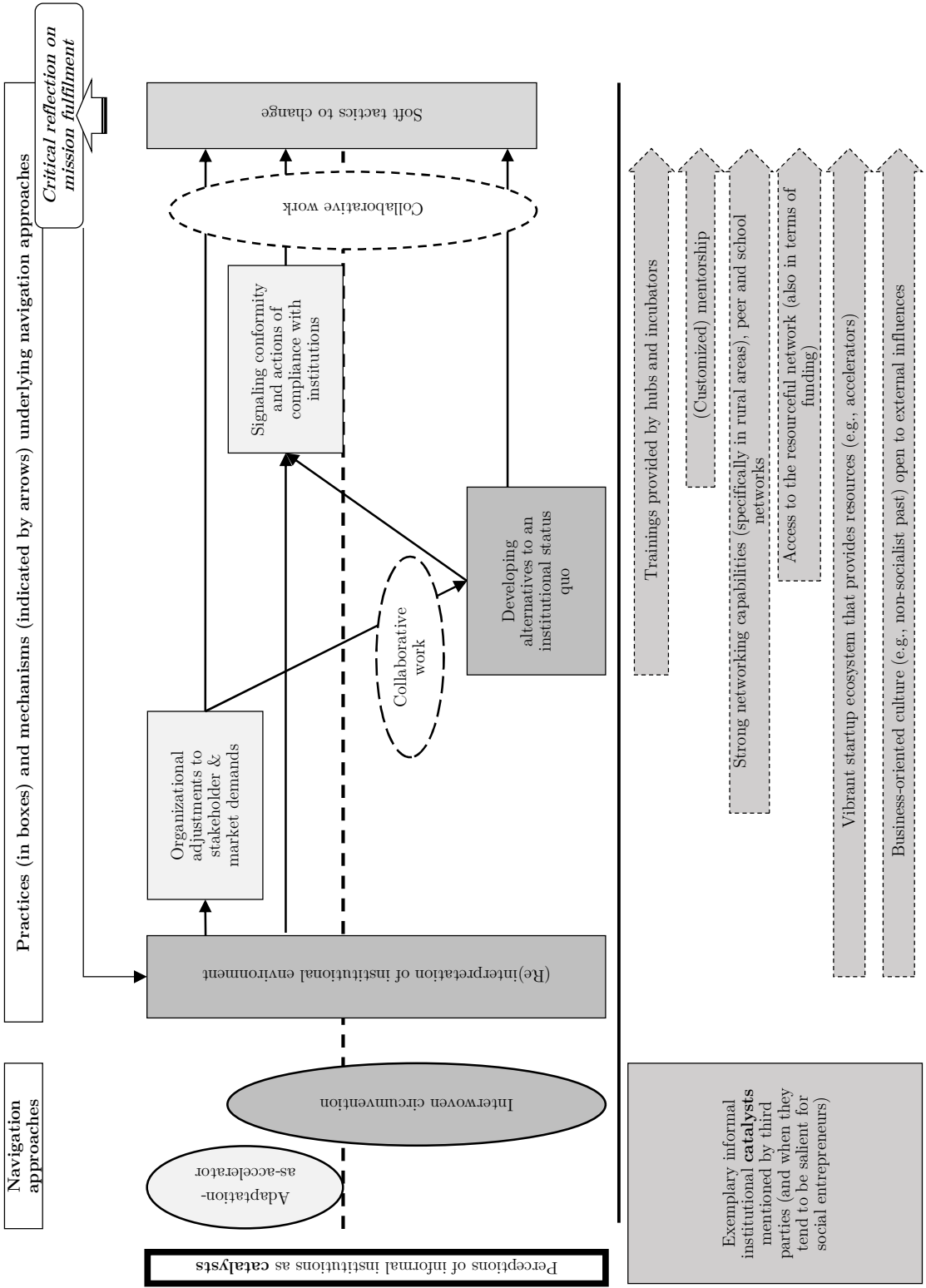
In sum, social entrepreneurs who perceive informal institutional conditions as impeding tend to use different mechanisms to weaken institutional conflicts and often kick off small changes in the institutional environment through soft tactics. Although distinct and interwoven circumvention seems to require a little more effort and perseverance on the part of the social entrepreneur, it is the inherent intention to bypass an institutional status quo that may result in the application of disruptive tactics designed for increased social impact.

4.4.3 Mechanisms of Navigation Approaches in Catalyzing Informal Institutional Environments

When perceiving institutional arrangements to be catalyzers for their hybrid mission fulfillment, social entrepreneurs in our sample relied almost entirely on the adaptation-as-accelerator navigation approach. Only on rare occasions, did they navigate their environment by employing interwoven circumvention.

As shown in Figure 6, the mechanisms for a successful adaptation to catalyzing institutional environments are characterized by either organizational adjustments to stakeholder demands or by signaling conformity and compliance with existing institutions, and both may be reinforced through collaborative work (with external partners). The identification of *adapting-as-accelerator* practices usually evolves from entrepreneurs' community embeddedness. A good example for the adjustment to stakeholder demands, for instance, is given by social entrepreneur #36, who produces boardgames that playfully teach children basic hygiene measures. After thorough interaction with the intended target group — i.e., young children in slums — he specifically adjusted his business model to better address the needs of his beneficiaries.

Figure 6: Navigation approaches/mechanisms in catalyzing informal institutional environment



Schools located in slums provide a dialog forum with great outreach potential because “the schools in the slum setting, they don’t only just provide education — this is where these children go to the toilet; this is where the children bathe.” Therefore, this entrepreneur experimented with existing institutions (i.e., he promoted the boardgames in and sold them to such schools for experiential learning) to take small steps toward an emphasized awareness and improved knowledge distribution on hygiene that is based on peer-to-peer learning among school children. His outreach accelerated because of his collaboration with a community-based organization (i.e., a reputable partner who has built good relationships with schools in slums over several years):

We came to realize that the children in themselves lacked the knowledge to actually practice hygiene, let me say handwashing with water and soap. And even then, when they knew that they were supposed to do handwashing with soap, they lacked the resources actually to implement the knowledge that they had. [...] So, this was a partner organization even while we were doing the implementation stage. And we got a bigger story of the slum setting, not only with regards to hygiene, but we also got the bigger story with regards to the social challenges that these children face. [...] It [the boardgame] is actually to reinforce the hygiene education that they get at school [and] to bring up more peer-to-peer learning with the children among themselves.

Another mechanism of the adaptation-as-accelerator approach in catalyzing environments is characterized by signaling conformity and compliance. Social entrepreneur #37 navigates the existing institutional environment by relying on conformity practices such as adhering to the institutional environment. His enterprise provides technology kits that are partially made from e-waste to allow children to learn about the use of technology. He gathered feedback on ideas to improve his product from a diverse set of stakeholders, reached out to various well-respected associations and participated in regular, albeit informal school events that allow for an immediate exchange with the beneficiaries, all this to appear legitimized and to speed up his outreach:

There's the Kenya public school teachers' associations and the private school associations. And then we're going to approach them. They can welcome us in their school. We showcase our products, and especially maybe on Parents' Day. Then the parents can comment. Then the students can comment also. And there's an interactive session.

The goal of social entrepreneur #16 is to improve the quality of locally grown coffee to increase its market share, found a local coffee culture, and thus increase the income of more than 30,000 female farmers. For him, signaling conformity appears to be part of his and the local partners' DNA that goes beyond compliance with legal regulations. Specifically, through appropriate actions, he is therefore able to navigate his institutional environment:

Rwandans are very—you see they're different from Kenyans. When the rule is a rule, we do respect the rules. If you say no speed, no speed. No drink and drive, people stop drinking. [...] companies have the same behavior, too, because they're managed by Rwandans, and Rwandans respect the rules. So, a lot of respecting environment and making sure that it's beautiful, it's very well taken care of, that's why we take the spirit, and we implement them through our companies.

This shared belief and understanding of what is right and wrong between him and his partners eases their way of doing business together. Based on mutual trust, conformity helps him improve the locally grown coffee quality by small steps and has resulted in an increased appreciation of local coffee within the community.

Furthermore, signaling conformity is often used by social entrepreneurs to gain access to expert knowledge and other resources provided by non-governmental organizations (NGO), hubs, incubators, and accelerators. Social entrepreneur #30, who uses plastic waste to produce construction material with employees from a sheltered workshop, recognized incubators as a catalyzing feature of his institutional environment. To get advice from experts collaborating with the local incubation center (i.e., support that facilitates change), however, he realized that he needed to improve his business capabilities to signal both conformity and eagerness to successfully apply for a placement in their programs:

It was after a journey we had gone through in a business accelerator program, whereby I got to learn about your commitment to taxation, commitment to proper finance, finance reporting. [...] Once we got incubator, now, that flame was ignited again, that this idea could actually go places. [...] We learned about the Business Modeling Canvas [and] it was through mentorship from him [a university professor] and through mentorship from lecturers in the center that we were able to develop our idea further to actually the prototyping stage. [...] that's when we were convinced that we need to go full into this business.

Beyond these straight adaptation-as-accelerator mechanisms, social entrepreneurs may also navigate their institutional environments by *interwoven circumvention*. In this case, they apply stakeholder adaptation to trigger the development of alternatives to an adverse institutional status quo without jeopardizing compliance with catalyzing informal institutions (cf. Figure 3). A good example in that regard is provided by social entrepreneur #32, who recycles fabric, paper, and plastic by turning it into new products such as shoes, laces, bookmarks, and fridge magnets. Her success builds upon a thorough analysis of and adaptation to the thought patterns of her (prospective) suppliers, as well as the catalyzing cultural norm of reciprocity. She introduced her suppliers to the principle of recycling and overcame their habit of throwing away production remnants (i.e., she developed alternatives to an undesired institutional status quo) by making use of an interwoven mechanism of adaptation and circumvention. Although this practice worked for free in the very beginning, after a while she realized that conforming to the norm of giving something in return (i.e., adhering to the principle of reciprocity) would lead to an increased internalization of the pro-environmental recycling habit in suppliers' employees.

At the beginning I was just going around collecting things for free from different tailors, the scraps when they make clothes or whatever. But then you know you go there it's like you're irritating them, because they now have to start looking for those things and putting them together. So then, yeah, I started offering them a small amount of money. I tell them just keep a bag in the corner of your shop. When you finish making a dress or a suit or something just throw the material there.

By taking small steps, the slow growth of this entrepreneur's enterprise is solely based on her networking capabilities. Considering that this social entrepreneur operates as a non-registered enterprise under the radar of municipal institutions, the applied mechanisms could also harbor the risk of being ratted out. Despite this knowledge, the entrepreneur perceives the commonly accepted principle of reciprocity as catalyzing for her enterprise as long as she safeguards good relationships with her partners (i.e., complies with the existing informal institution of reciprocity): "I'm careful to maintain very good relationships with my suppliers, because if any of them called the police on me it's over."

Social entrepreneur #13 provides a similar example of the interwoven circumvention approach. She also critically reflected on the widespread environmentally harmful habit of non-recycling unwanted resources. Her business model is built on collecting, sorting, and cleaning plastic bottles from low-income households, which are then melted into pavement bricks and sold to municipalities to improve the infrastructure in low-income districts. "As students you go and do research in that community, find different solutions that people are proposing. And you create a solution that you can, that is feasible for that challenge," she says. Through her adaptation to the identified change toward environmental protection in the municipal strategy (i.e., adjustment to market demands) and by building on community embeddedness as well as making use of a beneficial startup ecosystem to raise funds (which she perceived as catalyzing institutions), this social entrepreneur managed to get the support needed to cost-effectively produce the bricks and provide new jobs to disadvantaged people. Hence, at the beginning, the confidence placed in her enabled her to develop alternatives to the harmful habit of non-recycling of unwanted resources in her quarter with the aid of collaborative work (i.e., institutional partners), while in a later stage, the ecosystem in sub-Saharan Africa acted as a further catalyst or "enabler [that] is rebuilding itself, creating a pipeline, where entrepreneurs can move from one incubation to another" (as indicated by

Hub representative #2), which allowed the social entrepreneur to scale her enterprise to other quarters.

However, no matter whether social entrepreneurs follow mechanisms of adaptation-as-accelerator or interwoven circumvention to make use of catalyzing institutions, both navigation approaches lead to soft tactics intended to initiate rather small-scale changes that remain almost exclusively local in scope. That is, to our surprise, catalyzing informal institutional conditions seem to remain untapped resources that social entrepreneurs in our sample are not fully utilizing to spur aspirational (or even radical) changes in their environment toward sustainable development.

The entrepreneurs potentially tend not to think big enough, especially the ones in East Africa. That's where probably Nigeria, has an advantage, because these guys think big. They think massively big, and that appeals especially to American investors, who want things where they are ready to capture the world tomorrow. (Hub representative #3)

By incorporating archival data, Appendix 4 provides further exemplary evidence for both impeding and catalyzing institutional environments.

4.5 Concluding Discussion

4.5.1 Our Findings in Perspective

This paper commenced with questioning how social entrepreneurs' perceptions of informal institutions influence their practices to navigate in the complex institutional environments of emerging economies. Specifically, we focused on how such navigation is used to fulfill social enterprises' hybrid mission to ultimately contribute to sustainable development. As shown in Figure 2 and 3, our interviews with social entrepreneurs and hub representatives, as well as the qualitative analyses of archival data revealed different navigation approaches and underlying mechanisms: Adaptation-as-accelerator and/or interwoven circumvention is applied when informal institutions are perceived as catalysts, and adaptation-as-necessary-evil, interwoven circumvention, and/or distinct circumvention are the navigation approaches

that social entrepreneurs draw on when they experience their informal institutional environment as impeding.

Our findings further suggest that no matter whether informal institutions are perceived as impediments or catalysts, circumvention approaches require somewhat more experience. Specifically, we found that young social entrepreneurs almost entirely draw on adaptation, whereas experienced social entrepreneurs, in addition, often employ interwoven circumvention. Hence, young social entrepreneurs may not yet have developed a holistic perspective to oversee the interdependencies of mechanisms and levers (such as intensified collaborative work) that can be triggered to facilitate the navigation in complex institutional environments. By pointing to a limited capability of young social entrepreneurs to properly work impeding institutional arrangements, this insight adds to previous research, which has found young social entrepreneurs to be less confident in their entrepreneurial skills and commitment (e.g., Bacq et al., 2016). Moreover, in line with the results of Ghosh et al. (2018), we find some indications that especially women entrepreneurs struggle to deal with impeding informal institutional arrangements of emerging economies, such as, a more difficult access to financial resources, which they try to compensate by cultivating social relationships and intensified collaboration (Kuada, 2009). This supports the emerging view that in emerging economies connectedness is more important than firm-level resources (Gebreeyesus & Mohnen, 2013; Saka-Helmhout et al., 2020).

Considering collaborative work as a source to either overcome perceived institutional impediments or enable an effective use of catalysts, we identified that external support to mutually transform institutional arrangements is sought at different phases. For impeding informal institutional arrangements, social entrepreneurs tend to reach out to partners and community support early on, whereas for informal catalyzing arrangements they often draw on partnerships only after they have first failed to be efficient with their navigation practices.

Additionally, we found early collaborative work to be beneficial for bypassing adverse institutional status quo with disruptive tactics aimed toward an increased impact. As social entrepreneurs seem to underestimate the potential of catalyzing arrangements because they address them only by means of soft tactics that target small-scale changes, this raises the question of whether an early reflection (at the micro level) on how to possibly integrate partners for collaborative work (at the meso level) could yield higher impact and facilitate improved sustainable development (at the macro level). Similar multilevel connections for social entrepreneurship related to sustainable development have been outlined previously, for example, by Rahdari et al. (2016).

By pointing to the importance of collaborative work to facilitate ambitious changes in the institutional environment, our findings extend insights from research conducted in advanced economies (e.g., Arenas et al., 2020) to the emerging economy context. Future studies that investigate the underlying mechanisms of collaborative work could help to synthesize the separately developed approaches of meso-level strategies to deal with institutional voids that impede enterprises' activities in emerging economies (e.g., Gao et al., 2017; Khanna et al., 2005; Khanna & Palepu, 2000; Puffer et al., 2010) and micro-level strategies that social entrepreneurs use to exploit the opportunity that institutional voids create (e.g., El Ebrashi & Darrag, 2017; Mair & Marti, 2009; Onsongo, 2019).

Against the backdrop of institutional work (Lawrence et al., 2011)—understood as the “somewhat neglected capacity of actors to purposefully select elements of the institutional context within which they operate so as to deliberately ‘create’ a new context” (Gond & Boxenbaum, 2013, p. 707) — and a contextualized micro lens on institutional theory (Cardinale, 2018; Harmon et al., 2019; Powell & Colyvas, 2008; Powell & Rerup, 2017), we specifically investigate social entrepreneurs' (embedded) agency (McMullen et al., 2020) and its inherent challenges underlying the navigation of complex informal institutions in

emerging economies (Battilana & D'Aunno, 2009; Seo & Creed, 2002). Our findings enrich the social entrepreneurship literature in relation to institutional voids (Mair & Marti, 2009; Stephan et al., 2015) by emphasizing the importance of individual perceptions of institutional environments (e.g., van Wijk et al., 2019). Moreover, while taking an initial step to close the knowledge gap on navigation approaches that have the potential to contribute to sustainable development (Arenas et al., 2020; Cherrier et al., 2018), we simultaneously add to the controversial debate of institutional scholars on microfoundations of institutions (Harmon et al., 2019).

4.5.2 Implications for The Institutional Voids and Support Perspective

Seemingly opposing views about the effect of institutions on social entrepreneurship have emerged in the relevant literature: the institutional void perspective (Onsongo, 2019; Stephan et al., 2015; Tracey & Phillips, 2011) and the institutional support perspective (Estrin et al., 2013; Hoogendoorn, 2016). Yet, most of the existing literature only considers the effect on institutional voids or institutional support on the prevalence or performance of social enterprises at the firm-level (Beule et al., 2020; Hoogendoorn, 2016). In addition, like conventional enterprises, social enterprises face potential clashes between the emergent formal institutions and pre-existing informal institutional arrangement such as norms and customs (Mair & Marti, 2009; Mair et al., 2012). In combination, with potentially competing logics under which social enterprises as hybrid organizations operate (Battilana & Dorado, 2010; Battilana & Lee, 2014), we argue that in emerging economy settings they face an extraordinarily complex institutional environment.

The present study transcends the black or white duality of contemporary discussions surrounding institutional voids versus institutional support in the social entrepreneurship literature. Instead, we propose that both perspectives are simultaneously legitimate, exposing social enterprises to a complex set of institutional effects in addition to their

exposure to clashes in the formal and informal institutional environment (Bjerregaard & Luring, 2012; Mair et al., 2012; Saka-Helmhout et al., 2020). Our findings suggest that social enterprises in our data perceive some aspect of their institutional environment as favorable, while others are perceived as impeding. Many business models of social entrepreneurs in our sample seek to resolve a social issue that remains unaddressed because of inadequate local institutions. Their missions include everything from tackling insufficient education to recycling waste or creating economic opportunities for poor women affected by genocide. Thus, as conceptualized by some previous studies (e.g., El Ebrashi & Darrag, 2017; Tracey & Phillips, 2011), the social enterprises in our sample try to span institutional voids that would otherwise remain largely unaddressed. However, as they seek to fulfill their missions, the social entrepreneurs in our sample are exposed to a plethora of institutional voids that complicate business operations in emerging economies (e.g., Khanna & Palepu, 1997, 2000; Webb et al., 2010). Issues ranging from entrenched ethnic animosities and archaic gender roles to unresponsive regulation are perceived as impeding by social entrepreneurs.

Therefore, we argue that the discussion surrounding the role of institutions and social entrepreneurship should move beyond the either-or perspective. Both seemingly opposing and complex pressures apply to social enterprises in emerging economy settings. Our study combines the institutional voids vs. institutional support perspective with literature on the navigation of formal and informal institutional voids and competing logics to which social enterprises are exposed. Against this backdrop, our study's main contribution lies in highlighting approaches and underlying mechanisms that social entrepreneurs can effectively use to navigate complex environments and fulfill their social enterprises' hybrid mission.

4.5.3 Contributions to Micro-institutional Research

Our findings demonstrate that taking on a micro lens is crucial to advance our understanding of the effects that institutions have on social entrepreneurship. Most prior research on institutions and social entrepreneurship has focused on the macro or meso level (e.g., Beule et al., 2020; Estrin et al., 2013; Hoogendoorn, 2016; Torres & Augusto, 2020). Similarly, entrepreneurship as a research field in general has been dominated by quantitative methodologies (Welter, 2011), and highly recognized calls for research (e.g., Short et al., 2009) have led to an abundance of meso and macro level studies in emerging economy contexts. As a result, much of what is happening on the ground — on the micro level — has been overlooked. Hence, with our study, we respond to the call of Sengupta et al. (2018) that “in the emerging economies [...] social entrepreneurs need to be studied more to understand their relationship with their institutional and political environment” (Sengupta et al., 2018, p. 793).

As our results reveal, we zoom into the micro level and microfoundations of institutions (Cardinale, 2018; Harmon et al., 2019; Powell & Colyvas, 2008; Powell & Rerup, 2017) and demonstrate that the mechanisms social enterprises engage in depend on the social entrepreneurs’ agency. Following Garud and Giuliani’s (2013) understanding, we directly link social entrepreneurs’ agency with the navigation of the dynamic processes of their entrepreneurial journey, and therefore relate it to the discovery and creation of entrepreneurial opportunities (Goss & Sadler-Smith, 2018), the overcoming of institutional imprints (Maksimov et al., 2017), and further practices that aim to create, maintain, or disrupt the rules and shared meanings in social life, i.e., institutional work (Lawrence et al., 2011). Considering entrepreneurial agency as a capacity or quality that is attached to social entrepreneurs role as owner-managers of their social enterprise (Abdelnour et al., 2017), we

were able to identify several mechanisms that social entrepreneurs use to navigate in the complex informal environments of emerging economies.

In some cases, social entrepreneurs adapt and conform to their institutional environment, trying to gain legitimacy with their beneficiaries or other groups. In other cases, however, social enterprises try to change the institutional environment in line with their hybrid mission fulfillment risking a more radical break with existing institutional arrangements. That is, social entrepreneurs do not necessarily strive to reduce the complexity of their institutional environment, but rather they reconstruct complexity (Smets & Jarzabkowski, 2013). Thus, one of our study's contributions lies in combining the discussion around institutional voids and institutional support in the social entrepreneurship literature with the concept of institutional work (Lawrence et al., 2011). Therefore, our study contributes to the literature sparked by Mair and Marti (2009), but focuses more on social entrepreneur's individual perceptions and on the peculiarities of a complex institutional environment for social enterprises specifically rather than exclusively focusing on institutional voids. In sum, we contribute to the demand of a thorough contextualization of entrepreneurial activities (Greenman, 2013; Watson, 2013; Welter, 2011; Welter et al., 2019), and our findings add to the growing body of micro-institutional research (Schilke, 2018; van Wijk et al., 2019).

4.5.4 Limitations and Outlook on Future Research

Certain limitations of this study, along with directions for future research, are also worth noting. First, while our discussion of theoretical implications already highlighted several avenues for future research, there are additional directions that might be fruitful. While we investigated the perceived complexity of institutional environments and social entrepreneurs' navigation approaches against the backdrop of institutional voids and institutional work, future research could also draw on other theoretical lenses such as paradox theory and tension management (McMullen & Bergman, 2017; Smith & Lewis, 2011) to allow further

meso-macro connections that helps understanding how social enterprises as hybrid organizations (Battilana & Lee, 2014; Haigh & Hoffman, 2012) navigate complex institutional environments.

Second, our study does not capture a longitudinal view. Although, one could assume social entrepreneurs applying circumvention navigation to be more successful in terms of hybrid mission fulfillment, further longitudinal data, based on ethnographic studies rather than retrospective accounts embedded in interviews (Lawrence et al., 2011), would be needed to assess social enterprises' longevity and social impact.

Third, our study does not explain why social entrepreneurs perceive institutions differently and to what degree navigation approaches might be contingent on specific individual attributes. Although we briefly elaborate on our insights related to gender and age, future research could consider the inclusion of specific personality traits and attitudinal or psychological factors to investigate which antecedents might shape social entrepreneurs' perceptions of institutions and which individual characteristics might moderate such entrepreneurs' preference for specific navigation approaches.

Finally, a further remark applies to the country characteristics of Rwanda and Kenya. Although often simplistically condensed under the umbrella term of sub-Saharan Africa, there is no such thing as one sub-Saharan Africa, just as there is no such thing as one Europe. Consequentially, during our analysis we observed that Rwandan social entrepreneurs tend to navigate their institutional environments differently than Kenyan entrepreneurs. Rwandan entrepreneurs are particularly sensitive to informal impediments, while Kenyan entrepreneurs tend to focus their efforts on addressing formal impediments. One reason may be the influence of colonial history. Scholars have argued that former British colonies (e.g., Kenya) tend to be more economically advanced and have more developed formal institutions as opposed to former French colonies (e.g., Rwanda) (Acemoglu et al.,

2001). Another reason could be a recent pivotal event. The Rwandan Civil War in the mid-1990s has severely impacted Rwandan's culture (see for a comprehensive discussion of post-conflict effects on entrepreneurship: Tobias et al., 2013). Concurrently, Kenya has had more time and continuity to build formal institutions since its independence from its former colonial power in 1963. The fact that certain formal institutions do not benefit all communities equally well could indicate why Kenyan social entrepreneurs are working particularly towards changing such institutions.

Nevertheless, extending this research to other emerging economies while integrating secondary data on the respective institutions (e.g., with data from WEF or World Bank) could further deepen our insights on the relationship between the presence of institutions and social entrepreneurs' perception of them in a more comprehensive and comparative manner. In that regard, qualitative comparative analyses (QCA; Greckhamer et al., 2018) could cut another pathway through the jungle that further unfolds causal complexities (Misangyi et al., 2017) and analyzes institutional effects on entrepreneurial activities (Decker et al., 2020; Lewellyn, 2018) with respect to navigation approaches in complex institutional environments.

5. Venture Capital Funding in the African Context – A Mixed Method Study of Evolving Ecosystems and Financial Discrimination¹⁸

Co-authored with Rüdiger Hahn

Abstract

This study investigates how founding team composition and other factors affects the ability of African startups to attract international venture capital (VC) investors. It discusses how non-African investors' biases, reinforced by institutional voids and post-colonial legacies, influence funding patterns in African VC markets. Utilizing 37 interviews and a fuzzy-set qualitative comparative analysis of 335 fintech startups, the research finds an initial bias towards non-African led startups, which diminishes over time. Yet, African-led startups still face greater challenges in securing significant funding even in later stages of VC market development. The findings suggest a homophily preference among international VC investors in Africa, but indicate an evolving VC ecosystem that may become more favorable to local founders. This research contributes to the understanding of homophily, institutional voids, and financial discrimination in VC markets. It is significant for entrepreneurs devising funding strategies and policymakers supporting African founding teams, highlighting the need to reduce financial discrimination in international business environments and presenting a comprehensive view of the evolving VC investment landscape in emerging markets.

Keywords: Venture Capital, Africa, Institutional Theory, Entrepreneurship in Emerging Markets, Fuzzy-set methods, Mixed-method

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5.1 Introduction

In recent years, Africa’s startup scene has developed rapidly. In 2022, venture capital (VC) investments in Africa reached US-\$ 4.9 billion, up from US-\$277 million in 2015 (Partech, 2023). At first glance, this development suggests an economic empowerment of African entrepreneurs. However, many startups with high funding amounts in Africa seem to have non-African founders (Madowo, 2020; Musse, 2020). This could indicate some form of financial discrimination of African founders. Such a phenomenon would be especially relevant as African startups often depend on VC due to the significant funding constraints firms face on the continent (Fafchamps & Quinn, 2017; Harrison et al., 2014) while, at the same time, non-African investors dominate Africa’s VC market (AVCA, 2020).

Against this background, the African investment environment displays relevant challenges for the relationship between (non-African) investors and African founders. African markets are considered to be among the most unfavorable business environments (George, Corbishley et al., 2016), as they often exhibit significant institutional voids, that is the absence of supporting institutions such as a credible securities commission or reliable accounting standards (Khanna & Palepu, 1997; Bellavitis et al., 2019). Such voids hamper information transfer for investors and create information asymmetries (Akerlof, 1970). Non-African investors could be prone to negative consequences of institutional voids as they act outside of their common environment (Buchner et al., 2018; Wu & Salomon, 2017). Furthermore, prior research demonstrates that investors prefer to invest in entrepreneurs who resemble them to reduce informational asymmetries. Such homophily is amplified by high uncertainty (e.g., Hegde & Tumlinson, 2014) so that non-African investors could be particularly prone to it. Prior empirical evidence illustrates that homophily may drive discrimination in VC markets — for example of women (Guzman & Kacperczyk, 2019; Malmström et al., 2017) or ethnic minorities (Bengtsson & Hsu, 2015; Zhang et al., 2016).

In such a mélange of institutional voids, significant needs for VC funding, and a VC market influenced by potentially homophile external investors, African startups can apply various strategies to attract VC funding based on investors' preferences. Prior research, for example, suggests that startups can signal their quality through association with prestigious third-parties (Islam, M. et al., 2018; Plummer et al., 2016) or they can leverage network connections to attract resources and reduce monitoring costs (Hsu, 2007; Wang, 2016). Investors in emerging market settings, in turn, frequently rely on founders' education (e.g., Bellavitis et al., 2019; Franke et al., 2008) and venture characteristics (e.g., location; Cumming & Dai, 2010) as decision criteria.

These aspects suggest that the ability of startups to raise VC funds may only be explained by considering various factors simultaneously. Consequently, Plummer et al. (2016) and Bapna (2019) call for configurational considerations of VC funding determinants to explore how various factors complement or substitute each other and thus overcome the isolated perspectives in extant literature. Against this background, we ask: *Which conditions allow startups in Africa to attract high amounts of VC investment?* This explicitly includes answering the question of *how does the founding team composition of Africa-based startups influence their success to attract VC investment?* By answering these questions, we gain a better understanding of the factors that influence the ability of Africa-based startups to attract international investors, including potential biases that may favor non-African founding teams.

To answer these questions, we apply a mixed-method approach. Results from a qualitative study of 37 interviews with investors and Africa-based entrepreneurs indicate that various factors influence the chances of raising VC, such as the location of a startup itself as well as the origin of investors. Non-Africa VC investors in our sample indicated a preference for non-African founders. Furthermore, founders with strong international networks seem to be

able to raise funds more easily. However, the preliminary findings from the qualitative study also suggest that Africa's VC ecosystem may evolve over time to offer more opportunities to local founders.

These results served as a basis for a fuzzy-set qualitative comparative analysis (fsQCA) on a sample of 335 fintech startups active in Africa using Crunchbase data. Our findings show that in its early stages (until 2018), Africa's VC market favored startups led by non-Africans. This, however, was no longer the case in a later phase of the VC market (until October 2022) where more paths lead to high funding for African entrepreneurs. Nevertheless, in both scenarios African-led startups have to fulfil more challenging conditions to achieve high funding amounts. We thus find empirical evidence for a homophily preference of international VC investors in Africa in both our empirical approaches.

We make a theoretical contribution by combining the literature on homophily (e.g., Bengtsson & Hsu, 2015; Hegde & Tumlinson, 2014) with the literature on institutions in emerging markets (Bellavitis et al., 2019; Ghoul et al., 2017; Khanna et al., 2005) to explain this outcome. Uncertain institutional environments may reinforce investors' homophily preference as a means to reduce perceived informational asymmetries. Thus, we contribute to a growing literature on financial discrimination in VC markets by demonstrating the explanatory power of the homophily concept to explain financial discrimination in Africa (Guzman & Kacperczyk, 2019; Zhang et al., 2016). We also extend this theoretical concept by combining it with the literature on institutional voids and post-colonial literature and propose that this tendency may be reinforced by biased views about Africans (e.g., Mbembe, 2001) and persistent power imbalances rooted in colonial legacies (e.g., Koddenbrock et al., 2022). Thus, we follow calls to shed more light on the African context which is underrepresented in the management literature (Kolk & Rivera-Santos, 2018). Our findings have practical implications for entrepreneurs by revealing strategies that can be used to

access funds, and for policy makers to facilitate investment in startups with predominantly African founding teams.

5.2 Qualitative Insights on Determinants of VC Funding in Africa

To acquire a sound initial understanding of funding criteria in Africa and to guide our further empirical inquiry, we conducted a qualitative study based on VC funding in Africa.

5.2.1 Method

Research context and sampling. Following previous management research (e.g., Butler et al., 2020; Thies et al., 2019), we used the Crunchbase database to construct a sample of African fintechs.¹⁹ We focus on the fintech industry as a research context, because it is Africa’s largest startup sector and receives the largest fraction of VC funding on the continent (~39% of all VC funding in 2022; Partech, 2023). Focusing on a single industry is beneficial for internal consistency, as the overarching business model and therefore funding requirements are more comparable than for funding conditions in different sectors. Crunchbase is used by investors to identify appropriate investment targets. Hence, many startups that search for external capital are registered and have a high incentive to disclose recent and truthful information. We filtered all startups from the financial service industry with headquarter locations in Africa that disclosed information on funding. We excluded all firms which were obviously not startups (e.g., banks, development banks etc.), had no obvious fintech focus (i.e., no technology use), or did not disclose any information about their founders or investors.

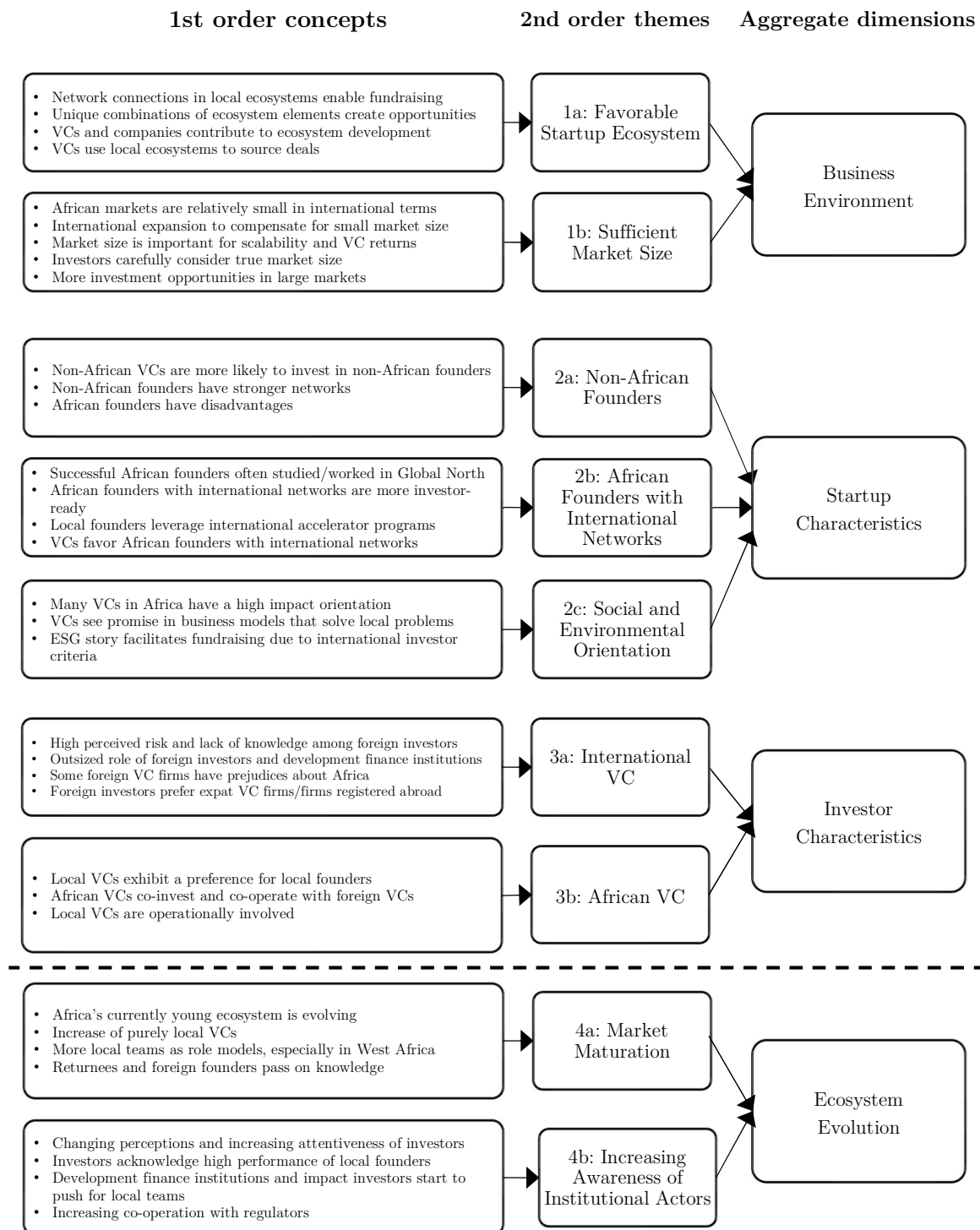
¹⁹ We express our sincerest gratitude to Crunchbase and Tim Li for granting us full Research Access on November 25, 2020 and again on June 16, 2022. We hereby assure that we have used the data solely for the specified project and solely in line with the license agreement. Crunchbase data can be found under <https://www.crunchbase.com/>

Furthermore, considering that many fintechs which operate in Africa are not headquartered on the continent for legal and financial reasons, we cross-checked the Crunchbase data with data from Briter Bridges, a similar London-based data aggregator that focusses specifically on startup ecosystems in emerging markets. This allowed users to filter for a startup's main target market rather than the headquarter locations. Based on this procedure, we added a number of startups that operate but are not headquartered in Africa by retrieving their information from Crunchbase. This approach yielded 335 fintech startups. Information on 482 VC investors of these startups was obtained from Crunchbase and Briter Bridges.

Data collection and analysis. We reached out via email to all investors and entrepreneurs whose contact details were available via their Crunchbase profiles, the company homepages, or their personal LinkedIn profiles. We sent out 301 emails (and potential follow-up emails) and, additionally, participated in a global investor conference on Africa, where we met further investors. After 37 interviews based on a semi-structured interview guide (see Appendix 5 and 6; average length ~50 minutes, total material almost 29 hours; see Appendix 7), which we conducted via video calls, answers became repetitive and data saturation was reached.

We inductively analyzed the interview data following a three-step process as suggested by Gioia et al. (2013), “looking for similarities and differences among emerging categories” (Gehman et al., 2018, p. 285). Through this process of pattern recognition within and between interviews, we openly coded our data to create a long list of first-order codes using informant-centric terms that addressed our research questions (see, e.g., Corbin & Strauss, 2008). In the second-order analysis, we revisited, compared, and finally classified these codes into second-order themes and aggregate dimensions. This way, we developed our final data structure displayed in Figure 7. To limit the length of our mixed-method paper, we include extensive proof quotes in Appendix 8.

Figure 7: Data structure



5.2.2 Findings²⁰

Business environment. Investors and investees suggested that the quality of a startup's surrounding ecosystem increases its chances of raising VC funding in Africa (*Theme 1a*). Favorable conditions for startups to thrive in seem to include aspects such as the presence of successful technology pioneers, numerous entrepreneurial support organizations, and many VC investors. The networks between these actors that emerge in such ecosystem seem to present startups with fundraising opportunities and the VC firms in our sample use them to source attractive deals. Locations like Nairobi, Lagos, or Cape Town were repeatedly mentioned.

Beyond the startup ecosystem, market size appears as a particularly important element of a startup's business environment (*Theme 1b*), as this aspect was mentioned by almost all investors and entrepreneurs. However, African markets generally tend to be relatively small by international comparison. VC investors stress the importance of market size to enable their portfolio companies to scale and realize VC returns. Some note that they expect their startups to expand across Africa and beyond to compensate for the small market size. Eventually, many investors in our sample primarily invest across three or four major markets, mainly Nigeria, South Africa, Egypt, and Kenya.

Startup characteristics. Various startups' characteristics seem to affect their ability to raise VC funds in an African context. Interviewees indicated frequently that predominantly non-African founding teams are more likely to raise VC (*Theme 2a*). Our data indicate that non-African investors exhibit a preference to invest in founding teams who resemble them, potentially to reduce the perceived insecurity of operating in African countries. Furthermore, non-African founders may be endowed with strong networks from their home countries

²⁰ Appendix 8 provides proof quotes on all aspects described in this section.

which they can use to attract investors from their home market. Many African founders do not enjoy the same advantages. Instead, they may lack the necessary investment-readiness to talk to international investors due to a lack of adequate educational institutions.

African founders might be able to cope with such disadvantages if they can build upon international networks (*Theme 2b*). Interviewees mentioned, for example, that a large fraction of African founders, who managed to raise significant VC amounts, have studied or worked in the Global North, which increased their familiarity with international investors' requirements. Alternatively, African-led startups can participate in international accelerator programs which improves their connections and prestige.

Startups' social and environment value orientation (SEVO) represent the third startup characteristic that emerged from our data (*Theme 2c*). This might be partly driven by the fact that many of the investors active in Africa appear to have a high impact orientation, possibly driven by the important role that development finance institutions play on the continent or by the fact that such investors might have to fulfil certain environmental, social and governance (ESG) requirements.

Investor characteristics. Our interviewees confirmed that Africa's VC market is mainly dominated by international VCs (*Theme 3a*). These investors appear to perceive the African market as risky and possibly lack knowledge about the local environment which is sometimes influenced by prejudices. Choosing founders from the Global North might be a risk mitigation strategy.

In contrast, local VC firms (*Theme 3b*) tended to exhibit a preference to invest in local founders with interviewees suggesting that they want to support African founders and at the same time believe that local founders are more familiar with the respective market

environment. Local VC firms frequently seem to co-operate with foreign VC firms, assuming an intermediary role to leverage their local embeddedness in the due diligence process.

Evolution of Africa's VC market. Our qualitative data also suggest that the ecosystem, and with this potential funding determinants, is evolving. In particular, quotes by various interviewees suggest an ongoing maturation of the market (*Theme 4a*). While the early stages of Africa's VC market may be dominated by foreign investors and non-African founders, the interviewees expect an increasing prevalence of local VC firms over time. From an investee perspective, interviewees see an increase in local role models of successfully funded firms. African founders returning from abroad pass on knowledge which may become localized with future generations of entrepreneurs. Some interviewees thus expect expanding prospects of raising funds for future African-led startups.

Along with a maturation of the market, our data suggests an increasing awareness among institutional players (*Theme 4b*). Investors seem to have shifted their attention toward Africa as an appealing market opportunity and have gained increasing awareness for potential discrimination of local founders. Especially development finance institutions and other impact-oriented investors may steer towards investing into African-led star-ups, as their mandates require them to build local capacities. Furthermore, many investors in our sample remark on the high performance of local teams, due to their familiarity with local markets, which may indicate an increasing willingness to invest in them. Lastly, increasing co-operation between foreign investors and regulators may point towards a more favorable regulatory environment for entrepreneurship going forward.

5.2.3 Preliminary discussion

Our qualitative inquiry revealed seven themes in three dimensions which indicate potential determinants of VC funding success in Africa. We will now initially scrutinize these potential determinants based on previous research as basis for our further empirical inquiry.

Our first dimension was the business environment in which startups operate. Regarding a favorable ecosystem, Prijcker et al. (2019) showed that attracting VC funding over long distances is challenging. As a result, startups from regions with fewer VCs tend to relocate to regions with more VCs, which leads to the emergence of startup ecosystems like Silicon Valley that attract a particularly large number of startups, investors, and support organizations (Audretsch et al., 2019). Startups can signal their value to potential investors by being part of such an ecosystem and investors are likely to appreciate the geographical proximity to their startups, because immediate connections reduce information asymmetries (Cumming & Dai, 2010). In emerging markets, startup ecosystems play an important role in overcoming institutional voids and alleviating financial constraints (Ali et al., 2014; Karna et al., 2013). Previous studies confirmed that the market size of the startup's main target markets influences investment decisions (Bapna, 2019; Petty & Gruber, 2011).

Regarding startup characteristics as the second dimensions of determinants, previous research suggests that investors consider the founders' gender, race, ethnicity, or nationality as signals (Guzman & Kacperczyk, 2019; Zhang et al., 2016). This can be explained by the tendency of investors towards homophily (Hegde & Tumlinson, 2014; McPherson et al., 2001). This preference to invest in startups with founders that share similar characteristics leads to easier communication, lower coordination costs, and, therefore, reduced informational asymmetries (Hegde & Tumlinson, 2014; Zhang et al., 2016).

This argument is intimately linked with investor characteristics as the third dimension of determinants. Hegde and Tumlinson (2014) demonstrate that VC firms are more likely to invest in ventures whose founders are of the same ethnicity (see also Bengtsson & Hsu, 2015; Zhang et al., 2016). Transposed to the African context, given that non-African VC investors play an outsized role in Africa's VC market, a preference for non-African founders might thus indeed play important role in funding decisions. Investors from the Global North may prefer to invest in startups with non-African teams, as they may assign them a higher valuation or try to mitigate risks.

Furthermore, prior research has repeatedly shown that social networks, and particularly the association with Western institutions, are a reliable way for African firms to reduce the transaction costs associated with institutional voids (Ge et al., 2019; Guo et al., 2018; Narooz & Child, 2017). Connections between firms in the Global South to the Global North through international networks are important to acquire resources and increase the attractiveness for investors (Khan et al., 2018). Such networks can be build, for example, by emigrated individuals who later returned to their home country (Liu et al., 2019) or who founded a business in their home country (Nyame-Asiamah et al., 2020). Finally, a startup's SEVO has been identified as an important signal that can help firms in the Global South to distance themselves from institutional voids in their home markets and attract foreign investors (Ghoul et al., 2017; Marano et al., 2017).

Overall, our qualitative findings indicate that the funding success of African startups depends on a variety of factors, simultaneously. This includes how characteristics in the business environment configure with startups' own and their investors' characteristics. Several authors have stressed the usefulness of a configuration of different signals that startups might send and how these signals could complement or substitute each other (e.g., Bapna, 2019; Plummer et al., 2016). Hence, a configurational approach may help to

determine how said factors combine (Misangyi et al., 2017) to overcome institutional voids in Africa and attract high amounts of funding by VCs.

5.3 Configurations of (Un)Successful VC Funding in Africa: Qualitative Comparative Analysis

Based on these insights, we conducted a fsQCA to gain an understanding of how the different determinants together influence the success of VC funding in Africa-focused startups as well as potential changes over time.

5.3.1 Method

Research approach. QCA is a set-theoretic method that compares cases based on their membership in sets to determine which combinations of conditions (i.e., configurations) are sufficient or necessary for the emergence of a particular outcome (Schneider & Wagemann, 2012), and is increasingly being used in management and entrepreneurship research (e.g., Fainshmidt et al., 2020b; Fiss, 2011; Patala et al., 2021). QCA is fundamentally configurational in nature as it accounts for conjunctural causation, that is, the fact that an outcome is often associated not with a single but various causal conditions simultaneously (Schneider & Wagemann, 2012). Furthermore, QCA considers equifinality, that is, the fact that various different configurations may lead to the same outcome (Schneider & Wagemann, 2012). Thus, it is suitable for our scenario in which startups can use various different paths (configurations of signals) to obtain high funding amounts by VCs. We use fsQCA in an explorative way to inform systematic thinking about configurational phenomena and sharpen theoretical hunches that are configurational in nature, rather than the statistical approach of theory testing.

QCA allows to identify configurations of conditions that are sufficient and necessary for the emergence of an outcome of interest (Ragin, 2009; Schneider & Wagemann, 2012). It does so by using Boolean algebra to logically minimize so-called truth tables, that is, tables

containing all possible configurations of conditions and the outcome, until only configurations remain that are sufficient and necessary for the outcome's presence (Greckhamer et al., 2018). We specifically use fsQCA as it allows for a more fine-grained analysis by considering the degree of membership or non-membership in sets (Schneider & Wagemann, 2012).

Data. We gathered various information to be included in the fsQCA analysis for all 335 African fintech startups in our sample. We used the VC funding raised by these companies as outcome and furthermore, based on the findings of our qualitative study, collected data on the business environment, the startup characteristics, and investor characteristics as described in Table 18.

Outcome. An important step in QCA is the assignment of membership scores to cases (Schneider & Wagemann, 2012). These membership scores typically vary between 0 (full non-membership) and 1 (full membership) to determine cases' (non)membership in sets. Through calibration, the underlying empirical data of each case are translated into membership scores (Schneider & Wagemann, 2012), as outlined in detail below. Our outcome is each fintech's cumulative US\$ amount of funding raised throughout all funding rounds, obtained from Crunchbase. It can reasonably be assumed that the capital requirements of fintech startups in Africa are quite similar, as reaching scale and large transaction volumes is generally necessary for long-term profitability.

Table 18: Outcome and conditions

Outcome	Measure	Fuzzy Set Calibration			
		Method of Calibration	Fully in	Crossover	Fully out
Funding	<i>The total funding amount in US \$ a fintech has received throughout all funding rounds.</i>	Direct method	\$100,000	Early stage \$439,999	\$4,100,000
Conditions			\$125,000	Later stage \$1,350,000	\$7,814,765
Startup ecosystem	<i>Used StartUpBlink (a data aggregator that ranks all global startup ecosystems according to their performance) ecosystem ranking, based on a score. All ecosystems whose ranking was lower than Bordeaux (3.7) were coded as rather out.</i>	Direct method	1	3	8
Market size	<i>World Bank data of purchasing power adjusted GDP in US \$ for each startup's target market. All markets that were smaller than South Africa were coded as rather out.</i>	Direct method	\$1,050 bn	\$700 bn \$	\$ 251 bn
Non-African	<i>Coded as in, if 50% or more of a startup's founding team are non-African.</i>	Crisp	1		0
International network	<i>Coded as in if at least one of the founding members has studied or worked outside of Africa, or was affiliated to a prestigious international organizations (e.g., World Bank).</i>	Crisp	1		0
SEVO	<i>Social and environmental value orientation of startup. Determined through CATA of each startup's website which yielded a score (%). The median, 85th and 15th percentiles are used as crossover, full membership and full non-membership thresholds.</i>	Direct method		Early stage	
			3.8	6	8.7
			4.2	Later stage 6	8.45
African VC firm	<i>Was coded as in, if at least one of the startup's investors was headquartered on the African continent.</i>	Crisp	1		0
International VC firm	<i>Was coded as in, if at least one of the startups investors was headquartered outside of the African continent.</i>	Crisp	1		0

Thus, we use startups' relative funding performance compared to their peers. We used the median of the distribution as the crossover point for the outcome, that is, funding amounts that were above the median were categorized as high and below the median as low (see, e.g., Fiss, 2011; Dwivedi et al., 2018). We used the median rather than the average, because the distribution is significantly positively skewed. The thresholds for full exclusions and inclusion are the 25th and 75th percentile, respectively. To control for these choices, we used different inclusion criteria to ensure that our results are robust to such decisions (Greckhamer et al., 2018).

Conditions. To determine the favorability of the startup ecosystem, we use 2022 data from Startupblink, a private research organization that releases annual reports on the world's most competitive startup ecosystems (StartupBlink, 2022). The scores rank from 0.1 to over 550 in the case of the most prominent ecosystem, San Francisco. With scores between 4.8 and 8.4, Nairobi, Cairo, Lagos, Cape Town, and Johannesburg are the only African startup ecosystems in our sample that can keep up with their international counterparts. We put the crossover point at 3 to include a few international ecosystems that host some of the startups in our sample, given their locations in the Global North and because of a significant break in our sample's distribution. The remaining ecosystem are all located in the rest of Africa with a significantly lower score than the top African and international ecosystems. As Startupblink only ranks the top 1000 ecosystems globally, we assigned a score of 0 to non-listed ecosystems. We choose a score of 8 as the full membership threshold, that is, all ecosystems with a score equal or higher than Lagos. We choose 1 as the full non-membership threshold, covering all ecosystems with a score lower than Tunis.

To determine the market size, we use the purchasing power adjusted GDP of each startup's target market from the World Bank database. In case the information indicated that the startups were active in more than one market, we considered the combined market size of

its target markets. The crossover point for market size was a GDP of US\$ 700 billion so that all cases located in economies that are the size of South Africa or larger are classified as being located in large markets. We made this judgement because of another significant break in the data. The full membership and non-membership thresholds are US\$ 1,050 billion (cases headquartered in Nigeria or Egypt) and US\$ 251 billion (cases located in economies smaller than Kenya).

To collect data on the founding team characteristics, we used the founders' LinkedIn profiles and other available information (such as founders bios on the startups' websites). This included the nationality of the founders and their experience in an international context as crisp conditions, that is, we either assigned a score of "1" when the condition was met and "0" otherwise. We use founders' international experience as a proxy for international networks that they possess from having studied or worked abroad.

To assess the startups' SEVO, we use computer-aided text analysis (CATA) (McKenny et al., 2018). We web-scraped the "about," "how it works," "impact," and similar sections from all startups' websites in our sample and used the well-published and tested dictionary for SEVO from Moss et al. (2018) and complemented it by an inductive list of words and phrases that are specifically suited to indicate SEVO of fintechs in Africa. Such phrases include, for example, "financial inclusion" or "underbanked." We created a SEVO score for each startup in our sample based on the relative frequency of respective phrases on the websites. There are no objective criteria with which to evaluate whether a fintech is rather socially and environmentally oriented or not, other than its performance relative to its peers. We thus used the median as a crossover point and the 75th and 25th percentiles as full membership and full non-membership thresholds. To ensure the robustness of our findings with respect to this decision, we performed analyses with varied crossover points and

inclusion thresholds (see later). The detailed calibrations for each condition are included in Table 18.

We use VC investors' headquarter locations from Crunchbase to approximate their national origin and classified all investors headquartered outside of Africa as international investors and investors with African headquarters as African. Thus, we included two distinct crisp conditions into our model, one for each investor type. This differs from the approach we took for startups which included only a single condition (0 indicating that founders are predominantly African, 1 indicating non-African). In the case of investors, including distinct conditions is empirically relevant, because most startups have multiple investors and, therefore, they could have both international and African investors. Only including one crisp condition would not do this empirical fact justice.

Analytical technique. We seek to uncover the configurations that are sufficient for receiving high amounts of funding by VC firms. We used a rigorous consistency²¹ threshold of 0.8 (e.g., Fiss, 2011; Greckhamer et al., 2018) and excluded configurations with less than three cases from the analysis to avoid including random configurations. We used the conservative solution (see Schneider & Wagemann, 2012) that considers only the empirical data rather than counterfactuals that rely on assumptions. We additionally conducted a preliminary analysis of necessity to determine whether any single conditions was necessary for receiving high funding by VC (Schneider & Wagemann, 2012). As suggested by Schneider and Wagemann (2012), we used a cut-off value of 0.9 for the consistency of the necessity statement.

To capture the temporal aspect which surfaced in our qualitative study, we followed Verweij and Vis (2021) who propose conducting multiple QCAs over different time periods and

²¹ See notes under Tables 19 to 21 for an explanation of the consistency measure.

subsequently comparing results. Changes in the configurations or measures of fit across the different time periods enable observations and theoretical interpretations about the effect of time on results. We performed separate QCAs for startups which raised VC funds and operate in Africa across two points in time, while conditions remain identical.

The first QCA captures Africa's VC market at an early stage and considers the cumulative funds raised by 149 fintech firms for which data were available up to and including 2018. We set the frequency cut-off at two for this model to include at least 80% of cases (Greckhamer et al., 2018). The second QCA, captures all disclosed cumulative funding up to and including the third quarter of 2022. This includes all the fintech startups from the first QCA, the funds they have raised since then, plus all startups that newly raised since 2019, yielding 335 fintech startups. The decision to consider the period up to and including 2018 and the period after 2018 rests on the observation that data on VC funding in Africa have only been systematically reported since 2015 (Partech, 2023). Thus, this distinction splits our total observation period into two neat four-year periods. For the second model, the frequency cut-off was set to four to include at least 80% of cases.

Both QCAs, for the early-stage and late-stage VC market, are subject to model ambiguity. The early-stage solution yielded three models that possibly explain high funding amounts, although two configurations were present in all three models. In this case, we chose the model with the highest inclusion score. Thus, the solution represents the QCA's third model. All other models also possess inclusion scores well above 0.8 consistency. Furthermore, the other configurations do not substantively change theoretical implications. The late stage QCA yielded two possible models with roughly identical parameters of fit. However, both models varied only by one configuration. In this case, we chose the most theoretically salient configuration (configuration M4 in Table 20). The alternative model can be replicated using the R script in the supplementary materials.

5.3.2 Findings

5.3.2.1 Descriptive Statistics

207 of the 335 fintechs (62%) were located in Africa's five most prominent startup ecosystems: Cairo, Cape Town, Johannesburg, Lagos, and Nairobi. Another 39 (11%) were headquartered outside of Africa, such as in San Francisco, London or Paris. Only 89 fintechs (27%) were headquartered throughout the rest of the continent.

The mean funding amount was at approximately US\$ 19 million (from US\$ 1,104 to US\$ 570 million), while the median was approximately one million US\$, demonstrating the distribution's positive skewness. 73 fintechs (roughly 22%) had predominantly non-African teams (i.e., at least half of the founding team members are non-African). However, among fintechs in the top quartile of the funding distribution that fraction increased to 40.4% and among the top decile to 50%. This indicates that fintechs with predominantly non-African teams were overrepresented among fintechs with the highest funding amounts. Among predominantly African-led fintechs in the top funding quartile, 95% had worked or studied abroad.

5.3.2.2. Analysis of Sufficiency

Early-Stage VC Market. Table 19 includes the configurations that were sufficient for receiving high funding amounts in the early stages of Africa's VC market (up to year 2018). Following Ragin and Fiss (2008), black circles (●) indicate a condition's presence, crossed-out circles (⊗) its absence, empty spaces indicate that the condition does not matter for the outcome.

Table 19 exhibits four configurations sufficient for attracting high funding amounts from VC investors. All configurations have a sufficiency well above the 0.8 consistency threshold and the overall solution consistency is 0.90. Thus, the overall model exhibits an appropriate

fit. We followed best practice by considering proportional reduction in inconsistency (PRI) scores to avoid skewed results due to simultaneous subset relations of configurations in the outcome and absence of the outcome (Greckhamer et al., 2018). All configurations exhibit a PRI consistency above the minimum recommend threshold of 0.7 (Greckhamer et al., 2018). Considering the relatively high number of cases for a QCA, an overall solution coverage²² of 0.26 is substantial.

Table 19: High funding amounts in Africa’s early-stage VC market (until 2018)

Configurations	Non-African			
	N1	N2	N3	N4
Business environment				
Ecosystem	⊗	●	●	
Market size	⊗		●	⊗
Startup characteristics				
Non-African	●	●	●	●
International networks	●	●	●	●
SEVO		⊗	●	●
Investor characteristics				
International	●	●	●	●
African	●	⊗		●
Consistency	0.87	0.94	0.88	0.93
PRI consistency	0.83	0.92	0.84	0.91
Raw Coverage	0.10	0.07	0.09	0.12
Unique Coverage	0.01	0.05	0.05	0.03
Overall Solution Consistency				
Overall Solution Coverage				
0.90				
0.26				

N=Configurations of fintechs with high funding amount in the nascent ecosystem (until 2018). Crossed out circles = low level of condition. Black circles = high level of conditions. Consistency threshold = 0.8. Frequency cutoff = 4. Consistency captures the fraction of cases that are both members in the configuration and the outcome (subset). Consistency takes on values between 0 and 1, higher values indicating a better fit with the model.

²² The overall coverage is a measure that indicates the fraction of cases covered by each configuration and the model in general and is akin to R-squared in regression analysis.

All configurations associated with high funding amounts in the early stages of Africa's VC market have predominantly non-African teams. There are no configurations of conditions associated with high funding amounts available to predominantly African teams. The truth table analysis shows only very few outliers in which predominantly African fintechs had managed to raise high funding amounts. Their occurrence is not frequent or consistent enough to raise the consistency score of the configuration they belong to above the required threshold.

Configurations N1 and N4 cover fintechs with high VC-funding outside of large markets and prominent ecosystems (or irrespective of such ecosystems). Fintechs in both configurations exhibit a syndicate of international and African VC as investors. This may suggest that African investors play the role of intermediaries, particularly in situations of greater institutional uncertainty. In contrast, Configurations N2 and N3 are within prominent ecosystem or large markets. Fintechs in these two configurations managed to raise high amounts irrespective of African VC investors. This suggests that international investors may have been more comfortable investing alone in a business environment that is perceived to be safer.

In addition, Configuration N4 suggests that SEVO might have been crucial for fintechs to distance themselves from uncertain market environments to attract high funding. This is supported by the high SEVO exhibited by fintechs in this configuration and the fact that they operate outside of large markets and irrespective of prominent ecosystems. The relatively higher raw coverage score of this configuration indicates high empirical relevance. Furthermore, this interpretation may be supported by Configuration N3. Thus, high SEVO might have substituted the indifference of the presence of African investors.

Later Stage VC Market. Table 20 shows all configurations with high funding amounts at a later stage of Africa's VC market. It includes the cumulative funds raised by all 335

Africa-based fintechs in our sample until October 2022. Again, all configurations and the overall model exhibit consistency and PRI scores well above the recommended thresholds of 0.8 and 0.7 respectively. Considering the relatively large number of cases, the overall solution coverage of 0.45 is substantial as the model includes 45% of all cases in our sample.

Table 20 indicates an evolution of Africa's VC market regarding the funding of predominantly African founding teams. Other than for the earlier stages of the market, the later stage solution contains two configurations which also include predominantly African teams. Configuration M4 even exclusively contains predominantly African fintechs. According to this configuration, some predominantly African fintechs managed to raise high funding amounts outside of prominent ecosystems, if they operated in large markets and possessed international networks, high SEVO, and a syndicate of African and international investors. However, the configuration's relatively low raw coverage indicates that it includes only a small set of firms.

Configurations M5 is empirically the most relevant as suggested by its high raw and unique coverage scores, indicating that it contains the largest fraction of fintechs. It reveals that in later stages of the VC market, the ethnic composition of founding teams became irrelevant for raising high funding amounts as long as the fintechs operate in prominent ecosystems and large markets. Furthermore, fintechs in this configuration exhibited a syndicate of both national and international investors while they possessed low SEVO. This suggests that as the VC market has progressed, predominantly African fintechs' have more opportunities to raise high funding amounts.

Nevertheless, three configurations are still exclusively available to non-African startups. Thus, there were more paths to high funding available to non-African startups compared to African ones, as there is only a single exclusively African configuration.

Table 20: High funding amounts in Africa’s later-stage VC market

Configurations	Non-African			African	All
	M1	M2	M3	M4	M5
Business environment					
Ecosystem	●	⊗		⊗	●
Market size	●	⊗	⊗	●	●
Startup characteristics					
Non-African	●	●	●	⊗	
International networks	●	●	●	●	●
SEVO		●	●	●	⊗
Investor characteristics					
International	●	●	●	●	●
African			●	●	●
Consistency	0.84	0.93	0.90	0.81	0.85
PRI consistency	0.81	0.91	0.89	0.72	0.81
Raw Coverage	0.13	0.10	0.09	0.05	0.23
Unique Coverage	0.05	0.04	0.03	0.03	0.16
Overall Solution Consistency		0.85			
Overall Solution Coverage		0.45			

M=Configurations of fintechs with high funding amount in the maturing ecosystem (until Q3 2022). Crossed out circles = low level of condition. Black circles = high level of conditions. Consistency threshold = 0.8. Frequency cutoff = 4. Consistency captures the fraction of cases that are both members in the configuration and the outcome (subset). Consistency takes on values between 0 and 1, higher values indicating a better fit with the model.

Further, the findings suggest that African startups had to fulfil more difficult conditions to obtain high amounts of funding. For example, they always needed to operate in large markets and exhibit a syndicate of African and international investors (M4, M5). Meanwhile, non-African startups also obtained funding in less prominent ecosystems (M2), smaller markets (M2, M3), and irrespective of African investors (M1, M2). Notably, all African startups which raised high amounts (either in Configuration M4 or M5) possessed

international network. This suggests that even if African teams managed to raise high funding amounts, they were typically part of a more privileged group that studied or worked abroad.

Three configurations again exhibit high SEVO in small markets (M2, M4) or less prominent ecosystems (M4). This suggests that it was still important for startups to signal high SEVO to attract funds in more institutionally uncertain environments. However, in the most empirically relevant configuration (M5), SEVO is low. This could indicate a shift away from purely impact-driven or development finance investors to more conventional, commercial VC firms in large markets and prominent ecosystems. Still, SEVO is high in the only path containing exclusively African fintechs, suggesting its value as a signal.

Interestingly, all configurations that involve African teams exhibit a syndicate of international and African VCs, while configurations M1 and M2 reveal that non-African founding teams managed to raise high funding amounts irrespective of African VC's presence. Furthermore, all configurations involving African founding teams exhibit the presence of international network connections. A more in-depth analysis of some of the underlying cases reveals that African fintechs with high funding were frequently founded by returnee entrepreneurs who returned to their home countries and leveraged the connections they have cultivated during their time in the Global North. In some cases, for example, their fellow business school students or former colleagues were early angel investors.

Absence of the outcome. We follow best practice by also performing a QCA for the absence of the outcome (Greckhamer et al., 2018) to verify whether it supports the

conclusions drawn from the analysis of the outcome's presence (Schneider & Wagemann, 2012). We consider the full sample for this analysis.²³

Table 21 reveals the findings for the sufficiency analysis of the outcome's absence, that is, low funding amounts. All configurations sufficient for raising low funding amounts include fintechs with predominantly African funding teams. There is no configuration containing foreign-led fintechs with low funding amounts. Predominantly African founding teams paired with a combination of other factors explains why these fintechs were unable to raise high funding amounts. Some African fintechs did not possess international network connections (L1, L2, and L4), indicating their network did not enable them to attract sufficient resources or reduce international investors' risk perception. Second, in two configurations (L6 and L7), fintechs were unable to raise high funding amounts despite possessing international networks and operating in prominent ecosystems or large markets. This may be driven by their inability to rally a syndicate of both international and local VCs.

In many configurations, fintechs operated in small markets or less favorable startup ecosystems (L1, L2, L3), SEVO is low or irrelevant, and none of the configurations with low funding amounts exhibit a syndicate of African and foreign VC firms. Overall, we observe that all configurations in this solution exhibit none or not enough of the favorable conditions from our successful solution, which supports our earlier findings.

²³ We also ran the model for low founding amounts using the smaller early-stage sample. The results offer no substantively different interpretation.

Table 21: Low funding amounts

Configurations	African						
	L1	L2	L3	L4	L5	L6	L7
Business environment							
Ecosystem	⊗	⊗	⊗	●	●	●	●
Market size	⊗	⊗	⊗	●	●	⊗	●
Startup characteristics							
Non-African	⊗	⊗	⊗	⊗	⊗	⊗	⊗
International networks	⊗	⊗		⊗	⊗	●	●
SEVO		⊗	●	⊗	⊗	●	
Investor characteristics							
International	⊗	●	⊗	●	⊗	●	⊗
African	●	⊗	●		●	⊗	●
Consistency	0.89	0.93	0.92	0.89	0.81	0.83	0.87
PRI consistency	0.87	0.91	0.89	0.86	0.77	0.77	0.85
Raw Coverage	0.07	0.04	0.07	0.05	0.06	0.03	0.10
Unique Coverage	0.03	0.03	0.03	0.02	0.03	0.03	0.04

Overall Solution Consistency 0.88

Overall Solution Coverage 0.34

L=Configurations of fintechs with low funding amounts. Crossed out circles = low level of condition. Black circles = high level of conditions. Consistency threshold = 0.8. Frequency cutoff = 4. Consistency captures the fraction of cases that are both members in the configuration and the outcome (subset). Consistency takes on values between 0 and 1, higher values indicating a better fit with the model.

5.3.2.3 Analysis of necessity and robustness checks

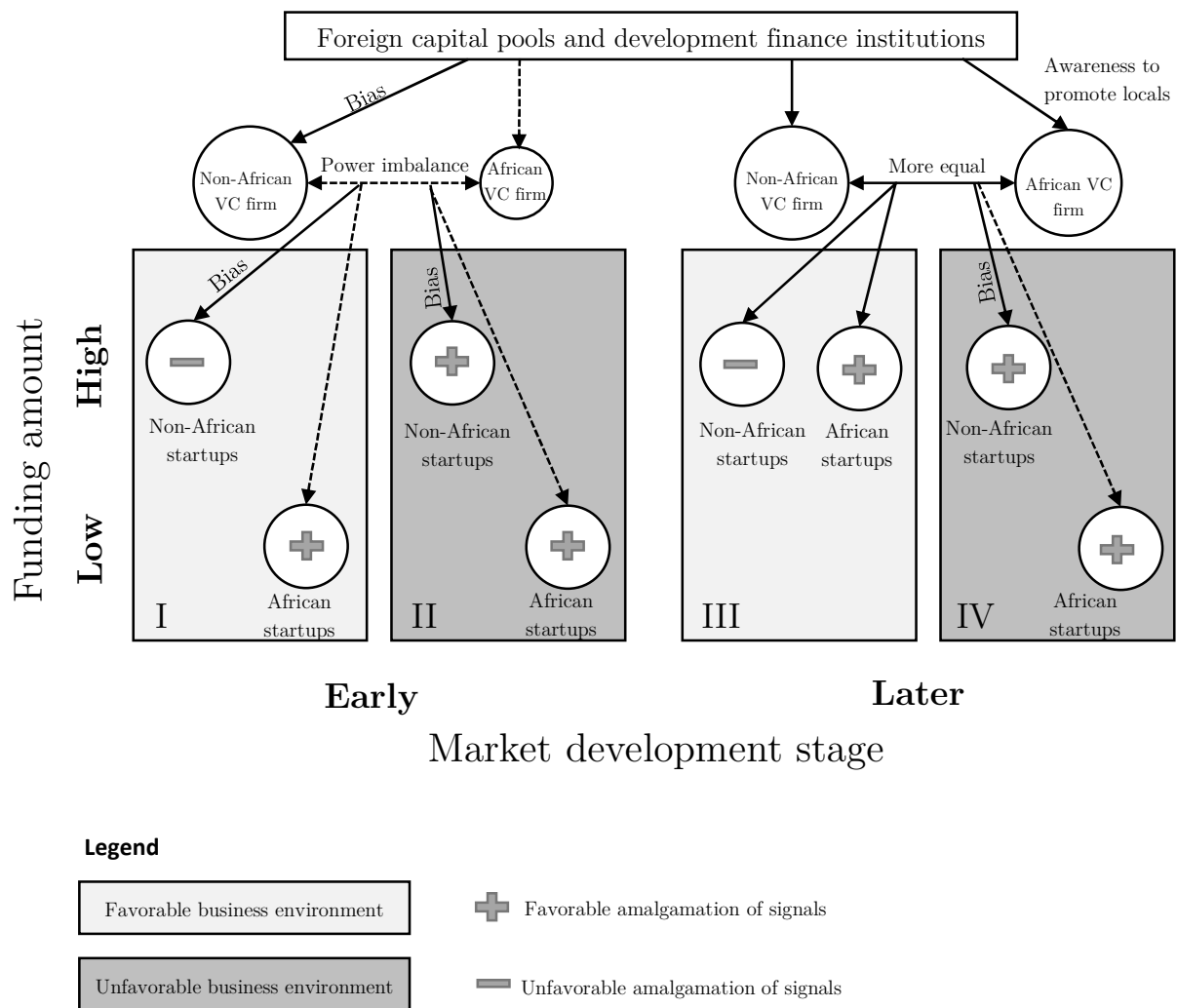
An a priori analysis of necessity as presented in Appendix 9 revealed the presence of international investors as the only necessary condition for raising high amounts of VC funding. This underlines the capital scarcity of the African continent, as purely African investors may not be able to provide the funding that fintechs require. Nevertheless, we kept the condition in the analysis of sufficiency due to the theoretical salience of its combination with other conditions. Furthermore, we followed best practice by performing various robustness tests to investigate how robust our findings and interpretations are with respect to the aforementioned judgements about calibration (Greckhamer et al., 2018). These tests

revealed that a few individual configurations are dropped or added, depending on the severity of changes. However, the overall interpretation remains substantively similar. The results are reported in Appendix 10.

5.4 Towards a Postcolonial Model for Raising Venture Capital in Africa

We split the following model (Figure 8) into an early and a later stage of Africa's VC market.

Figure 8: Postcolonial model of raising VC in Africa



The vertical axis indicates increasing VC funding amounts. The round circles represent fintechs or VC firms. We propose that a key dimension of Africa's financial subordination (e.g., Alami et al., 2022; Kvangraven et al., 2021) is represented by the outsized role foreign

capital pools (i.e., institutional investors who allocated capital to VC firms) play on the continent. VC investing in Africa seems to be primarily associated with development finance institutions, highlighting the continent's financial dependence on foreign capital. We argue that this structure of Africa's VC market introduced the potential for biases at upstream points of the VC value chain. Our findings show that some foreign capital pools perceive Africa's market environment as particularly risky. This view may be rooted in images of Africa that date back to the colonial period and have been shaped by unbalanced media representations (Nothias, 2020). As a result, we argue that their inert homophily preference was reinforced. Thus, they sought to mitigate perceived risks by investing in VC firms that resemble them. Indeed, our qualitative interview findings suggest that non-African VC firms were more likely to raise funds from international investors.

Especially in early stages of the VC market, illustrated in the left half of Figure 8, the aforementioned biases cascaded down the rest of the value chain. As a result of foreign capital pools' homophily preference, they allocated more capital to foreign-led VC firms. Most VC investments were made through syndicates of foreign and local VC firms. However, given the difficulty local VC firms had with raising funds, non-African VC firms had the upper hand in these relationships. Since the risk perception of foreign VC firms was just as high as for foreign capital pools, they tended to invest in non-African startups to reduce the perceived uncertainty. Local VC firms had to follow suit, given their smaller asset base.

As a result of this structure, non-African startups could more easily raise funds. In favorable and thus commercially more enticing business environments, they managed to raise high funding amounts even without sending other favorable signals (I in Figure 8). This corresponds to Configurations N2 and N3 in Table 19. In more unfavorable business environments, even non-African startups had to send additional positive signals to receive funding, given the higher uncertainty (II), relating to Configurations N1 and N4 in Table

19. African fintechs, meanwhile, did not manage to raise high funding amounts in these early stages of Africa’s VC market, even with positive signals and regardless of the business environment. Thus, the structure and power relationships in the early stages of Africa’s VC market — which was partially influenced by the continent’s colonial experience — contributed to the financial discrimination of local founders.

As illustrated in the right half of Figure 8, this dynamic changed in later stages of the African VC market. Both international investors and VC firms had gained increasing awareness about the discrimination of African founders. Development finance institutions, which had a clear mandate to contribute to local structures, were progressively allocating more funds to local VC firms. Therefore, there were now more local VC firms with higher capital endowments. As a consequence, the relationship between local and foreign VC firms was more balanced. Given local VC firms also exhibited a preference for local founders, these more equal power dynamics resulted in more funds being allocated to local founding teams. Furthermore, foreign VC firms had gained more knowledge about operating in Africa, reducing their perceived uncertainty. They may also have recognized that African teams were more suitable to operate in these often complex institutions, given their superior market knowledge.

Nevertheless, due to their advantages (e.g., superior connections and education) foreign founders had to exhibit fewer positive signals in favorable business environments (III) to raise an equal amount of funds, as demonstrated by Configurations M1 to M3 in Table 20. In less favorable business environments (IV), non-African founding teams were still preferred, although they now have to send more positive signals, as illustrated by Configuration M5 compared to Configurations M2 and M3 in Table 20.

5.5 Implications for the Literature

Our findings enrich the literature on homophily preferences in VC markets (e.g., Bengtsson & Hsu, 2015; Hegde & Tumlinson, 2014) by applying the concept to the discrimination of African-led fintechs in Africa. Our study concurs with prior work on VC financing demonstrating the disadvantages certain groups face when raising capital (Guzman & Kacperczyk, 2019; Malmström et al., 2017; Zhang et al., 2016). Furthermore, we extend the explanatory power of the homophily concept in the VC literature by integrating it with the institutional voids literature (Coase, 1937; North, 1991). Thus, the concept becomes more applicable to emerging market settings like Africa, which are subject to institutional voids (Khanna & Palepu, 1997). Our findings suggest that in such situations investors tend to reduce perceived uncertainties by exhibiting a preference for entrepreneurs who resemble them, hueing closely to Hegde and Tumlinson (2014). This may explain the overrepresentation of non-African fintechs among startups with high funding amounts, given the high proportion of non-African investors on the continent. Our findings also vindicate the literature on configurational signaling theory, and offers further insights into which configurations of signals a startup should send in emerging market settings (Bapna, 2019; Plummer et al., 2016). Thus, the theoretical insights generated by this Africa-specific context could also be insightful for other settings such as financial discrimination of female or minority entrepreneurs in the Global North.

Furthermore, we illustrate how investors' institutional environment intersects with homophily to reinforce or attenuate it. This represents a theoretical novelty, as the institutional environment has scanty been considered in the homophily literature on VC. In particular, prior studies on homophily preferences mainly considered net effects of founders' ethnicity on the likelihood of receiving funding from VC investors with a similar ethnic background. By taking a configurational approach, our study makes theoretical and

empirical contributions. Empirically, we provide novel insights into the phenomenon of financial discrimination of African founding teams as one of the first studies to rigorously investigate this phenomenon. Theoretically, the configurational approach enables us to consider homophily in conjunction with other theoretical concepts like institutional voids, enriching both literatures.

Our QCA results suggest that the hurdles faced by African fintechs may be the result of risk mitigation mechanisms employed by foreign investors in situations of uncertainty. However, this does not explain why non-African investors play such a predominant role in Africa's VC market in the first place. Our qualitative findings offer insights into this peculiarity. Various interviewees hinted towards a power imbalance between Africa and the rest of the world. Some respondents talked about Africa getting "the short end of the stick," "racism," and "prejudice." The fact that Africa's market seems to heavily depend on Western development finance institutions and other investors might be interpreted as a continuation of the continent's economic dependence since the period of colonization (Koddenbrock et al., 2022). Newly emergent literature on the financial subordination of Africa demonstrates that power structures dating back to the colonial period endow Africa with a subordinate financial system that is dependent on outside capital (Kvangraven et al., 2021). These findings are reminiscent of a long tradition of post-colonial literature that investigates the role of Africa within global power structures since the period of colonization (e.g., Mbembe, 2001; Taylor, 2016). This literature also suggest that negative views about Africa, such as high levels of perceived corruption, are perpetuated by media representations rooted in colonial images (Apata, 2019). By interpreting our findings in light of post-colonial literature, we are able to tie the disparate threads of our various findings and theoretical considerations into one common model.

Limitations. Naturally, our study is subject to limitations. Dealing with time in QCA has not yet been fully resolved (Schneider & Wagemann, 2012). Thus, we may wrongly attribute some variation in funding amounts to startup characteristics rather than the time since they were founded. QCA is also vulnerable to omitted variable bias (Radaelli & Wagemann, 2019). Despite the fact that parameters like consistency and coverage indicate a high fit between our model specification and the empirical data, other sufficient configurations of conditions that were not specified may exist. Furthermore, as is the case with qualitative case studies in general, it is unclear to what degree the findings from our interviews are generalizable to the overall population of actors in Africa’s VC ecosystem. However, the extension of the emergent concepts to a sample of 335 fintechs partly mitigates this concern. Nevertheless, even with the use of QCA, this study remains primarily explorative, as QCA is not an inference statistical method. Thus, validating our insights through the use of inference statistical methods and larger datasets would be worthwhile.

5.6 Conclusion

Our findings from a mixed-method research approach combining a qualitative study with a fsQCA indicate that in early stages of the African VC market, startups with high funding amounts almost exclusively had non-African founders, suggesting some kind of financial discrimination. As the ecosystem evolved, the fraction of predominantly African startups with high funding increased. Hence, founders’ ethnic background becomes increasingly irrelevant as the VC market matures.

We combine the literature on institutional voids with the literature on investor homophily and insights from post-colonial literature to explain these observations. We argue that deliberate discrimination is not the main cause of the disadvantages faced by African teams. Instead, this seems the result of the peculiar structure of the African VC market. The dependence on external capital paired with high institutional uncertainty, reinforces foreign

investors' homophily tendencies as a risk mitigation mechanism. Future research should extend this investigation to more industries. Furthermore, researcher should consider whether the trend towards a more level playing field continues in the future.

6. Venture Capital in Africa: Bridging Clashing Institutions and Colonial Legacies²⁴

Abstract

Recent years have seen strong growth of venture capital investments into African startups, a phenomenon which has barely been researched. Through an analysis of 27 interviews with venture investors in Africa, I investigate the institutional challenges they face and their mitigation strategies. By combining institutional theory with post-colonial literature and emergent research on Africa's financial subordination, my findings reveal three institutional challenges. First, institutional voids in Africa impede investors' operations. Second, investors struggle with meeting the high expectation of globalized financial actors. Third, Africa has a subordinate position in the global economy which complicates fundraising and successful exits. In response, investors utilize four strategies to overcome those challenges. First, they navigate local institutional voids to overcome operational hurdles. Second, they leverage international networks to acquire resources. Third, they bridge the institutional distance between local and international markets. Finally, they recontextualize African institutions in a more positive light.

Keywords: Venture Capital, Africa, Institutional Theory, Qualitative Research

²⁴ Single-authored working paper

6.1 Introduction

Recent years have seen the rapid expansion of technology-enabled entrepreneurship across Africa (Friederici et al., 2020; Hammerschlag et al., 2020; McDade & Spring, 2005). Africa’s financial technology (fintech) revolution in the last decade (e.g., Onsongo, 2019) has driven the emergence of world-class startup ecosystems in cities like Nairobi and Cape Town (Littlewood & Kiyumbu, 2018; Pollio, 2022). This development is mirrored by the growth of venture capital (VC) investments into African startups, which have increased from US-\$ 277 million in 2015 to US-\$ 4,912 million in 2022 (Partech, 2023).

While prior studies investigate the perspective of technology entrepreneurs in Africa (e.g., Hammerschlag et al., 2020; Nyame-Asiamah et al., 2020), research from the viewpoint of VC investors in Africa is scarce (see Espinoza Trujano & Phiri, 2022 for a notable exception). Consequently, we know very little about the challenges and strategies of VC investors in Africa. In their qualitative study, Ahlstrom and Bruton (2006) find that VC investors in emerging markets face institutional voids and, therefore, utilize different strategies than their peers in the Global North (Bruton & Ahlstrom, 2003). This has sparked a growing literature on VC investors’ strategic responses to institutional challenges in emerging markets (e.g.; Liu & Maula, 2021 Zheng & Xia, 2018). However, said literature almost exclusively focuses on Asia. Furthermore, most of the research after Ahlstrom and Bruton’s (2006) is quantitative, treating VC investors’ decisions and perceptions as a black box. To the best of my knowledge there are no studies offering in-depth, qualitative insights into the holistic decisions and perceptions of VC investors in Africa, akin to Ahlstrom and Bruton (2006) for Asia.

Therefore, the present study harks back to Ahlstrom and Bruton’s (2006) qualitative approach to explore the challenges that VC investors face in Africa and their respective strategic responses. In doing so, I follow numerous calls to shed more light on the African

context (e.g., George, Corbishley et al., 2016; Kolk & Rivera-Santos, 2018). The setting is particularly suitable for “taking the extreme conditions of some African countries and using them as a laboratory for modifying current theories” (Barnard et al., 2017, p. 467). As Africa remains the poorest region globally with particularly unfavorable institutions (George, Corbishley et al., 2016), investigating this phenomenon could help us understand how VC investors operate in such unfavorable institutions contexts. Against this background, I ask two research questions: *(a) What unique institutional challenges do VC investors in Africa face? (b) How do VC investors in Africa strategically navigate their institutional environment?*

To answer these research questions, I use a qualitative analysis of 27 in-depth interviews with VC investors who operate in Africa. Following Timmermans and Tavory (2012), I employ an abductive approach as it “aims at generating novel theoretical insights that reframe empirical findings in contrast to existing theories” (Timmermans & Tavory, 2012, p.174). Furthermore, abduction is well placed to move “from specific observation to particular explanation” (Behfar & Okhuysen, 2018, p. 325). This is suitable as I explore Africa’s VC market by drawing on existing theories, while complementing said theories with Africa’s empirical peculiarities. Hence, my coding was influenced by my knowledge of relevant literature streams (Kump, 2021). In particular, the data analysis was informed by a combination of institutional theory (e.g., Khanna & Palepu, 1997), post-colonial literature (e.g., Nothias, 2020), and the literature on Africa’s subordinate position in the global economy (e.g., Kvangraven et al., 2021).

My findings suggest that VC investors in Africa are impeded by three institutional dimensions: local institutional voids which complicate operations, stringent expectations of globalized financial actors, and Africa’s subordinate position in the global financial system. In response, they pursue four types of strategies. They navigate local institutional challenges

by trying to overcome operational hurdles, utilize their international networks to acquire resources, seek to bridge the institutional distance between international and local markets, and strive to recontextualize Africa's institutions in a positive light. I make an empirical contribution by presenting one of the first studies to analyze the challenges and strategies that VC investors face in Africa. My findings have practical implications for investors and policy makers. I also make a theoretical contribution by being one of the few studies to enrich institutional theory with post-colonial literature and the emerging literature on Africa's financial subordination, while drawing on an abductive, empirical approach.

The remainder of this paper is structured as follows. Section 6.2 provides a theoretical background and literature review. Section 6.3 outlines in detail my data and methodological procedure. Section 6.4 contains an in-depth analysis of my findings using exemplary quotes. Section 6.5 presents an institutional model of VC in Africa and discusses the findings in light of the literature. Chapter 6.6 closes the paper with a brief conclusion and research outlook.

6.2 Theoretical Background and Literature Review

6.2.1 Venture Capital Investing in Emerging Markets

Venture capital typically refers to a professionalized investment activity that involves high-risk investing in mostly technology-enabled startups with high growth potential in exchange for a minority equity stake (Gompers & Lerner, 2001). Typically, firms which manage VC funds are referred to as general partners (GPs) (Zeisberger et al., 2017). According to Gompers and Lerner (2001), the VC cycle can be subdivided into three stages: fundraising, the investment process, and exit. In the fundraising stage, GPs raise funds from so-called limited partners (LPs), which mostly consist of institutional investors like pension funds or family offices (Ramsinghani, 2021). In the investment phase, GPs source deals and select promising target companies (Bollazzi et al., 2019; Gompers et al., 2020), engage in due

diligence and structuring of contractual terms (Gompers, 1995; Kaplan & Strömberg, 2004), and monitor their investments (Sahlman, 1990; Gompers, 1995). Furthermore, VC firms provide active post-investment management, as they frequently have board seats and provide strategic and operational support to their portfolio companies (Sahlman, 1990; Gompers et al., 2020). GPs ultimate goal is to perform successful exits and return a significant multiple of invested capital to their LPs (Ramsinghani, 2021). Exits typically involve an initial public offering (IPO), a strategic acquisition by a third party or a management buy-out, in which the entrepreneur buys the VC firm's shares back (Cumming & MacIntosh, 2003).

While originally a US phenomenon (Gompers & Lerner, 2001), since the 1980s VC investments have expanded globally also in emerging markets such as parts of emerging Asia (Ahlstrom et al., 2007; Mallaby, 2022). Ahlstrom and Bruton (2006) have pioneered rigorous, qualitative research on VC in emerging market contexts. They demonstrate that in East Asia VC practices can significantly differ from the Global North due to institutional differences (Bruton & Ahlstrom, 2003). For example, East Asian VC investors rely more on their personal networks throughout the VC cycle to substitute for formal institutional voids (Ahlstrom & Bruton, 2006).

This has spawned a growing literature on strategies employed by VC investors in emerging markets, given their institutional environment. Various studies, for example, investigate the benefits for foreign VC investors who syndicate with local GPs when investing in emerging markets (Humphery-Jenner & Suchard, 2013; Khavul & Deeds, 2016; Khurshed et al., 2020). Others focus on due diligence and monitoring (Lu et al., 2006) or collusion with political authorities to increase investment success (Liu et al., 2021). Yet, rather than strategies of VC investors themselves, much of the literature is concerned with the institutional

antecedents of VC investing in emerging markets (Bustamante et al., 2021; Groh & Wallmeroth, 2016) or the effects on VC-backed firms (Liao et al., 2014).

The aforementioned studies predominantly focus on Asia and in particular China. In recent years, the importance of Africa as a destination for VC investments has increased (Partech, 2023). However, there are only a handful of rigorous studies on VC in Africa. As in the case of Asia, the latter focus mostly on institutional determinants or on the startup side (Hammerschlag et al., 2020; Jaoui et al., 2022). Some papers investigate the decisions of GPs in light of institutions. Adongo (2017) demonstrates that GPs in Africa purchase smaller equity stakes in weak legal systems. Similarly, using institutional theory, Hearn et al. (2018) indicate that VC investors in Africa retain more control post IPO, if the company is part of a business group rather than an independent entity.

Most of these studies use quantitative methods, with a few exceptions by Hain and Jurowetzki (2018) and Espinoza Trujano and Phiri (2022). However, Hain and Jurowetzki (2018) predominantly use secondary, archival data and findings are mostly descriptive as they develop a typology of Western VC investors in Africa. In contrast, Espinoza Trujano and Phiri (2022) qualitatively analyze interviews with female VC fund managers in Africa. However, they mainly focus on gender-specific approaches to fund management, while institutions in Africa and holistic VC strategies play only a marginal role (Espinoza Trujano & Phiri, 2022).

The aforementioned studies share three similarities. First, an overwhelming focus on China, while Africa remains insufficiently investigated. Second, most research after the initial impetus by Ahlstrom and Bruton (2006) uses quantitative methods that treat the decisions and perceptions of VC investors as a black box. Third, research demonstrates the importance and idiosyncrasies of institutions, which can require completely different strategic

approaches. Against this background, a rigorous qualitative study that focusses on Africa's institutional environment and VC investors' holistic strategic approaches to it seems salient.

6.2.2 Institutional Theory and Emerging Markets

Institutions are the “humanly devised constraints that structure political, economic and social interaction” (North, 1991, p. 97). They can be subdivided into formal institutions such as laws and informal institutions such as traditions and norms (North, 1991). Doing business in emerging markets like Africa can be particularly challenging because of their institutional environment. Emerging markets are frequently subject to formal institutional voids, meaning they lack market-enabling institutions and intermediaries (Khanna & Palepu, 1997, 2000; Webb et al., 2010). For example, the absence of proper reporting standards or regulatory authorities increases informational asymmetries between investors and investees, leading to capital market voids (Akerlof, 1970; Khanna & Palepu, 1997).

An extensive literature stream investigates approaches that organizations use to deal with these institutional challenges. The use of informal networks has emerged as a particularly potent strategy to substitute for the absence of formal institutional voids (e.g., Ge et al., 2019; Khavul et al., 2009; Narooz & Child, 2017 ;Puffer et al., 2010). In the absence of adequate property rights or legal enforcement, personal network ties engender the necessary trust to reduce the transaction costs that complicate operations in such contexts (Puffer et al., 2010). Family, kinship or political ties can also help with resource mobilization in environments where investors would otherwise withhold funds due to institutional uncertainty (Ge et al., 2019; Khavul et al., 2009).

These mechanisms are also employed by expatriates (expats) from the Global North seeking to gain a foothold in emerging markets (Guo et al., 2018). Similarly, diaspora entrepreneurs — that is, entrepreneurs from Africa who have studied in the Global North and returned to

their home countries to start businesses — use the networks they have acquired abroad and combine them with their local kinship ties to overcome institutional voids (Nyame-Asiamah et al., 2020). Closely related, the international business and entrepreneurship literature identifies the concept of institutional bridging — that is, translating business norms and practices across national context — as a crucial entrepreneurial capability (Karra et al., 2008; Leppäaho & Pajunen, 2018). While institutional voids were initially viewed as mere business impediment, later research pointed out their potential opportunity for institutional entrepreneurs (Mair & Marti, 2009; Mair et al., 2012; Tracey & Phillips, 2011). Institutional voids present institutional entrepreneurs with an opportunity to establish their solution as a commonly accepted standard (Onsongo, 2019; Karra et al., 2008).

In this context, the literature on institutional fields is also relevant. Institutional fields consist of organizations that offer similar products and services and, over time, develop a common set of institutions (norms, standards, requirements) through isomorphism (DiMaggio & Powell, 1983). Prior research suggests the emergence of institutional field among global financial actors, for example in sustainable finance or crowdfunding (Ahlström & Monciardini, 2022; Lehner & Harrer, 2019).

6.2.3 Africa’s Colonial Legacies

Africa’s very distinct colonial experience also contributes to the continent’s particular institutional environment. For example, empirical evidence suggests that former colonies with particularly extractive institutions, as in much of Africa, are poorer today than settler colonial states (Acemoglu et al., 2001). Furthermore, the arbitrary drawing of borders during the 1884/1885 Berlin conference had lasting negative consequences as they led to ethnic conflicts and the persistent economic disenfranchisement of split ethnic groups today (Michalopoulos & Papaioannou, 2016). In addition, the transatlantic slave trade has lasting consequences on Africa as countries with higher slave exports have lower income levels today

(Nunn, 2008), while interpersonal trust within affected societies remains lower (Nunn & Wantchekon, 2011).

Some authors argue that even after independence former colonial powers continue to exert economic influence on their former African colonies (Lassou et al., 2019, Odijie, 2022; Uche, 2015). These arguments are supported by recently emerging literature on Africa's subordinate position in the global financial system (Alami et al., 2022; Bonizzi et al., 2022; Koddenbrock et al., 2022, Kvangraven et al., 2021). Similarly, post-colonial literature contends that negative images about Africa, which first emerged during colonialism, persist in the public imagination through Africa's media and literary representation (Apata, 2019; Mbembe, 2001; Nothias, 2020; Spurr, 1993). However, post-colonial literature also proposes avenues to change these narratives (Beresford, 2020; Edozie, 2017; Makhulu et al., 2010)

Hitherto only few studies in the management and entrepreneurship literature consider the impact of colonialism on businesses. For example, Glaister et al. (2020) demonstrate that prior colonial relationships are positively related to inward direct investments from former colonizers to their previous African colonies. Meanwhile, Decker et al. (2020) expound that colonially determined borders and legal systems influence entrepreneurial growth aspirations in contemporary Africa. Similarly, Rivera-Santos et al. (2015) illustrate that social entrepreneurs self-perception in Africa is influenced by their countries' colonial history. Thus, calls for more entrepreneurship and management research on Africa's particular institutional environment have increased (e.g., George, Corbishley et al., 2016; Kolk & Rivera-Santos, 2018).

6.3 Method

This study is based on a qualitative, abductive analysis of 27 interviews with relevant actors in Africa's VC ecosystem. In the following section, I will outline my data collection and analysis process.

6.3.1 Sample and Data Collection

The following insights on the structure of Africa's VC market are based on initial conversations with interviewees and industry reports. Contrary to many other markets, LPs in Africa primarily consist of European and North American development finance institutions (DFIs). Furthermore, the fraction of GPs from abroad seems particularly large. In addition, a seemingly significant number of entrepreneurial support organizations operate across the continent, many of which also acquire equity stakes in companies. Once initial interviews revealed this specific structure of the VC market in Africa, I sought to ensure that all groups are adequately represented in my sample to obtain a comprehensive picture.

I employed a purposeful sampling approach to compile a sample of information rich cases (Palinkas et al., 2015). First, I used Crunchbase to create a list of all VC investors with publicly disclosed deals in Africa. Crunchbase is a database containing information on investors and portfolio companies. This approach was complemented by industry reports on Africa's VC markets (e.g., Briter Bridges, 2020). This yielded a comprehensive list of most VC investors operating in Africa. Subsequently, I reached out to every investor on that list. For the remainder of the data collection, I followed a snowball sampling approach (Patton, 2002). I first established contact with LPs who, in turn, referred me to their GPs. However, the overlap between my initial list of GPs and the interviewees was significant.

Interviews were held via video conference between December 2021 and August 2022, mostly by the author and occasionally another researcher. I used a semi-structured interview guide in order to ensure comparable data while allowing surprising findings to emerge. The interview guide contained open questions while making sure that the entire VC process was sufficiently covered. It includes questions like "please tell us about the fundraising process?" or "as how risky do you perceive investments in Africa compared to other regions and why?".

The interview guide was iteratively adapted throughout the data collection process. The final version of the interview guide can be found in Appendix 5.

I stopped collecting further data once theoretical saturation became apparent, that is, themes started repeating themselves making more insights from additional data unlikely (Glaser & Strauss, 1967). All interviews were recorded and later transcribed. Most interviews were held in English while four were held in German. German interviews were translated and their accuracy validated by the author. The final sample consists of 27 interviews with an average duration of around 50 minutes. In total, this yielded 21 hours and 53 minutes of recorded interview material corresponding to 361 pages of transcribed interviews. Table 22 gives an overview of all interviews, their types, and their assets under management (AUM). Of the interviews, seven are with personnel at local GPs, nine with international GPs, five with LPs, five with accelerators, and one with an angel investor, that is, a wealthy individual and former entrepreneur investing his private fortune into startups. Furthermore, I tried to ensure that as many interviewees as possible had senior positions to provide a high-level picture about their firm's activities. In many cases, the interviewees were partners or senior executives at their respective firms.

6.3.2 Data Analysis

My data analysis is based on an abductive approach (e.g. Dubois & Gadde, 2002; Timmermans & Tavory, 2012; van Maanen et al., 2007). Abductive reasoning involves combining inductive insights from empirical data with the researcher's knowledge of existing literature and their intellectual positions to produce theoretical innovations (Kump, 2021; Timmermans & Tavory, 2012). Therefore, some researchers argue that abduction offers "distinct advantages stemming from an explicitly tight connection between data and theory" (Behfar & Okhuysen, 2018, p.323).

Table 22: Sample

No.	Interviewee	Investor type	Firm description	AUM (US\$)
L1	Investment analyst	Local VC	West African micro VC fund manager	5-10 million
L2	Head of communications	Local VC	West African pre-seed and seed tech fund manager	50-100 million
L3	Director	Local VC	Southern African fintech-focused fund manager	-
L4	General partner	Local VC	North African micro VC focused on pre-seed tech startups	5-10 million
L5	General partner	Local VC	Southern African Series A VC investor	50-100 million
L6	General partner	Local VC	West African VC focusing on pre-seed to Series A technology investments	25-50 million
L7	Managing director	Local growth fund	East African growth fund with a primary focus on agribusiness related SMEs	5-10 million
F1	General partner	International VC	East Asian VC focusing on growing technology businesses in Africa	10-50 million
F2	Investment associate	Impact investor	European impact-oriented investment firm focusing on innovative solutions	>1 billion
F3	General Partner	International VC	European early-stage VC focusing on blockchain startups	1-5 million
F4	Partner	International VC	Major South Asian early-stage, technology-focused VC investor	50-100 million
F5	Partner	International VC	European-American early stage VC	100-500 million
F6	Founder & CEO	International VC	European advisory and VC firm investing in disruptive technologies	-
F7	General partner	International VC	American Africa-focused VC for cleantech and fintech startups	50-100 million
F8	Chairperson	International VC	Africa-focused, early-stage VC with US GPs	10-50 million
F9	Investment officer	International VC	European Africa-focused VC focusing on Series A	-
D1	Investment manager	International LP	Major European DFI focusing on PE and VC investments in emerging markets	>1 billion
D2	Vice president	International LP	Africa-focused European DFI focusing on VC and PE	100-500 million
D3	Chief investment officer	International LP	DFI-affiliated fund of funds investing in financial services companies in Africa	100-500 million
D4	Fund manager	International LP	DFI-affiliated fund investing in green energy across Africa	100-500 million
D5	Director	International LP	European corporate VC fund of funds investing in emerging markets	10-50 million
A1	Manager	Accelerator	US accelerator and pre-seed fund for emerging market tech startups	10-50 million
A2	Investment Manager	Accelerator	European venture accelerator and seed stage VC	10-50 million
A3	Analyst	Accelerator	European venture accelerator and seed stage VC	10-50 million
A4	Portfolio analyst	Accelerator	East African accelerator and seed stage investor	<1 million
A5	Founding partner	Accelerator	East African transaction advisor and early stage investor	<1 million
A6	Angel investor	Angel investor	West African angel investor co-investing with and advising foreign VCs	-

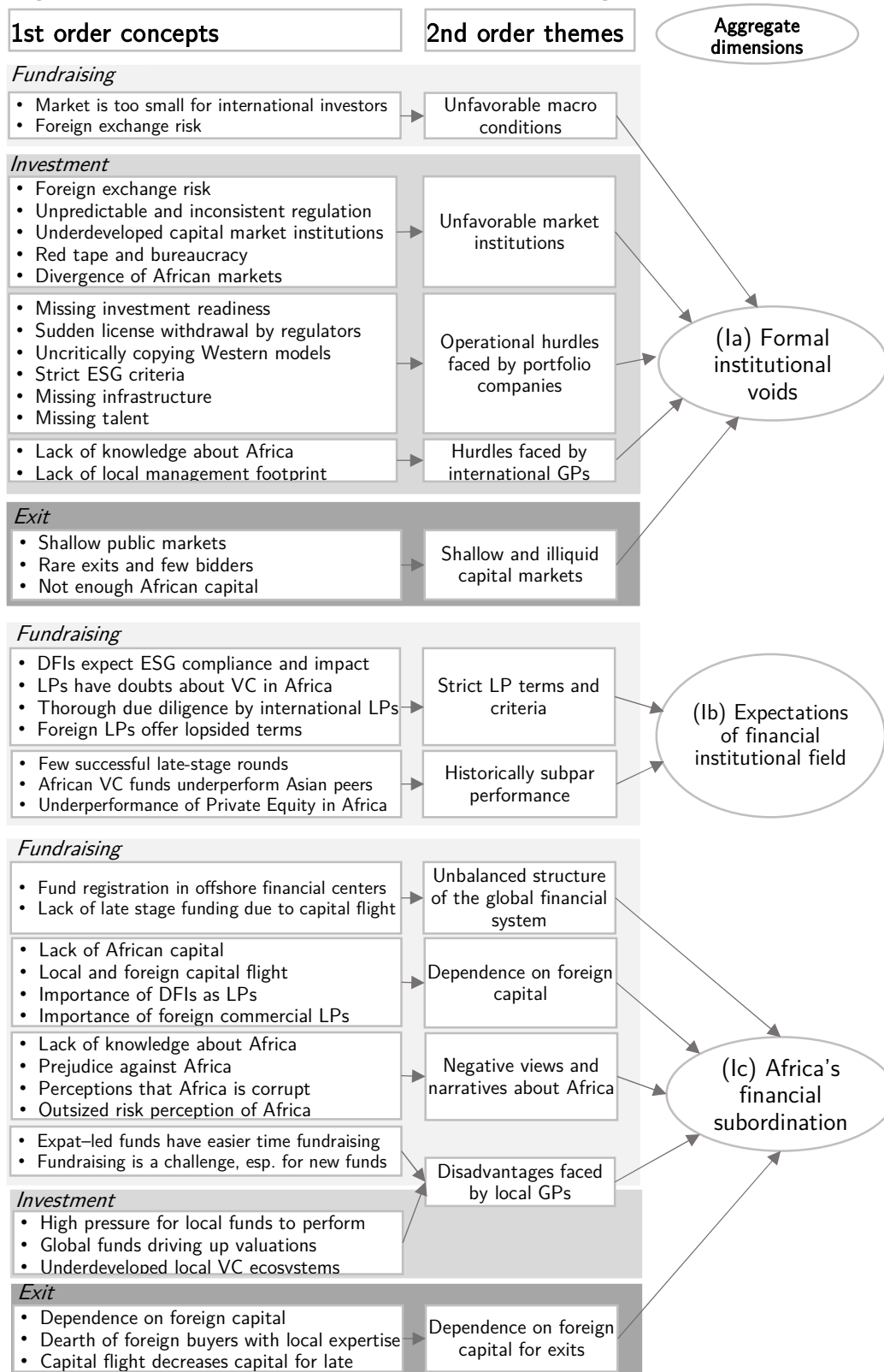
Hence, abduction may be suitable to create new theoretical insights and chiefly allows to move “from specific observation to particular explanation” (Behfar & Okhuysen, 2018, p. 325). This makes abduction highly useful in the present setting. While there exists literature on how VC investors and other organizations navigate institutions in emerging markets, VC in Africa is a hitherto underexplored phenomenon. Abductive approaches could allow to complement the existing theoretical literature through the particular insights that the African VC market offers. Thus, this abductive analysis involves moving “back and forth between data and theory iteratively” (Timmermans & Tavory, 2012, p. 168).

My analytical process involved three coding steps. First, I used open coding for my first order categories to create in-vivo codes that hued closely to the interviewees' statements (Corbin & Strauss, 1990; Gioia et al., 2013). Second, I engaged in axial coding by grouping my first order concepts into more abstract second order themes according to similarities and differences (Corbin & Strauss, 1990; Gioia et al., 2013). While second order themes are already theoretically salient, the connections between them against the background of the existing literature make them truly theoretically relevant. Hence, I created theoretically meaningful aggregate dimensions with the second order themes as constituents (Gioia et al., 2013). The entire coding process was informed by my knowledge of various relevant literature streams. However, the literature was particularly crucial for steps two and three of the coding process. The entire process was repeated separately for the institutional challenges and strategic responses, in line with the initial research questions.

Figure 9 presents the data structure for the institutional challenges VC investors in Africa face (following Gioia et al., 2013). For the purpose of transparency, the following paragraph lays out which literature streams have been particularly influential during the abductive process for each aggregate dimension. The aggregate dimension "formal institutional voids" was clearly informed by the expansive literature on institutional voids in emerging markets (e.g., Gao et al., 2017; Khanna & Palepu, 2000; Webb et al., 2010). Closely related, the dimension "expectations of financial institutional field" was informed by the literature on institutional fields (e.g., DiMaggio & Powell, 1983; Zietsma et al., 2016). Lastly, the institutional dimension termed "Africa's financial subordination" is informed by an emerging literature that investigates the subordinate position of emerging economies in the global financial hierarchy (e.g., Alami et al., 2022; Bonizzi et al., 2022; Kvangraven et al., 2021).

Figure 10 presents the data structure for GPs' strategic responses to institutional challenges (methodologically based on Gioia et al., 2013).

Figure 9: Data structure institutional challenges



Aggregate dimensions in this part of the analysis hue especially closely to the data. However, they were still influenced by relevant literature strands. In particular, the international business literature on institutional distance and institutional bridging (e.g., Karra et al., 2008; Liou & Rao-Nicholson, 2017; Leppäaho & Pajunen, 2018), the literature on networks as mechanisms for VC investors in emerging markets (e.g., Ahlstrom & Bruton, 2006; Liu & Maula, 2021), and the literature on institutional entrepreneurship (e.g., Chen & Sun, 2019; Tracey & Phillips, 2011). In Figure 10, the aggregate dimensions are driven from both sides to illustrate the differences in local and foreign GPs' strategic responses, as our findings revealed some important differences between these groups of subjects. Differences in first order concepts between local and foreign GPs are underlined and italicized.

The coding process for both data structures was also informed by postcolonial literature on negative portrayals of Africa (e.g., Apata, 2019; Mbembe, 2001; Nothias, 2020; Spurr, 1993) and avenues for Africa's more hopeful re-imagination (e.g., Beresford, 2020; Edozie, 2017; Makhulu et al., 2010). Furthermore, I assigned all challenges and strategies to one of the three stages of the VC lifecycle laid out by Gompers and Lerner (2001): fundraising, investing, and exit. This allows me to better capture the practical implications of my findings. Throughout the coding process, the emergent themes and dimensions were frequently reflected and adapted in light of the aforementioned literature. For both figures, I have also chosen to illustrate to which part of the VC process the challenges and strategic responses belong to demonstrate the practical salience of my findings. In the findings section, I have given each aggregate dimension a number for the reader's orientation.

Figure 10: Data structure GPs' strategic responses

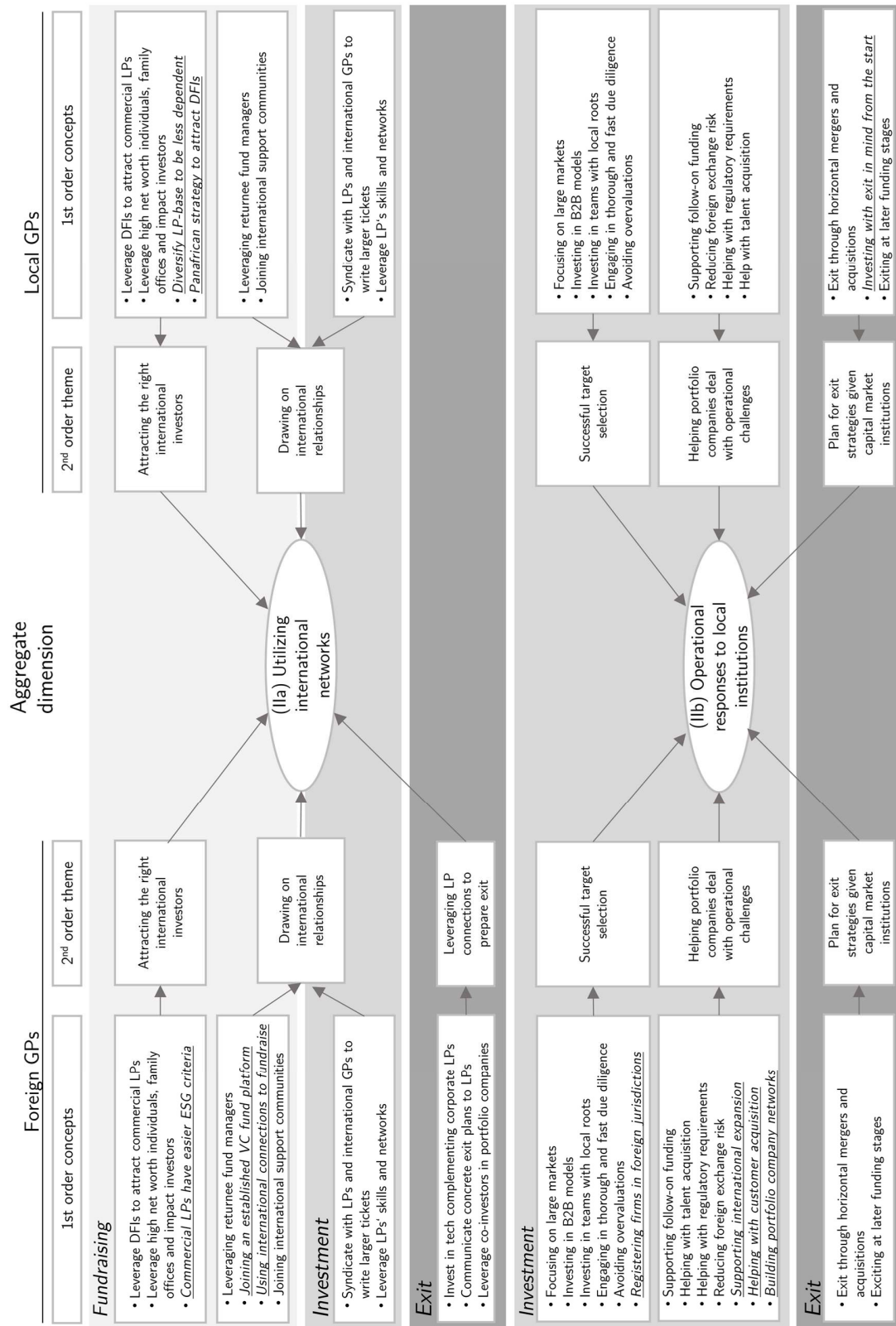
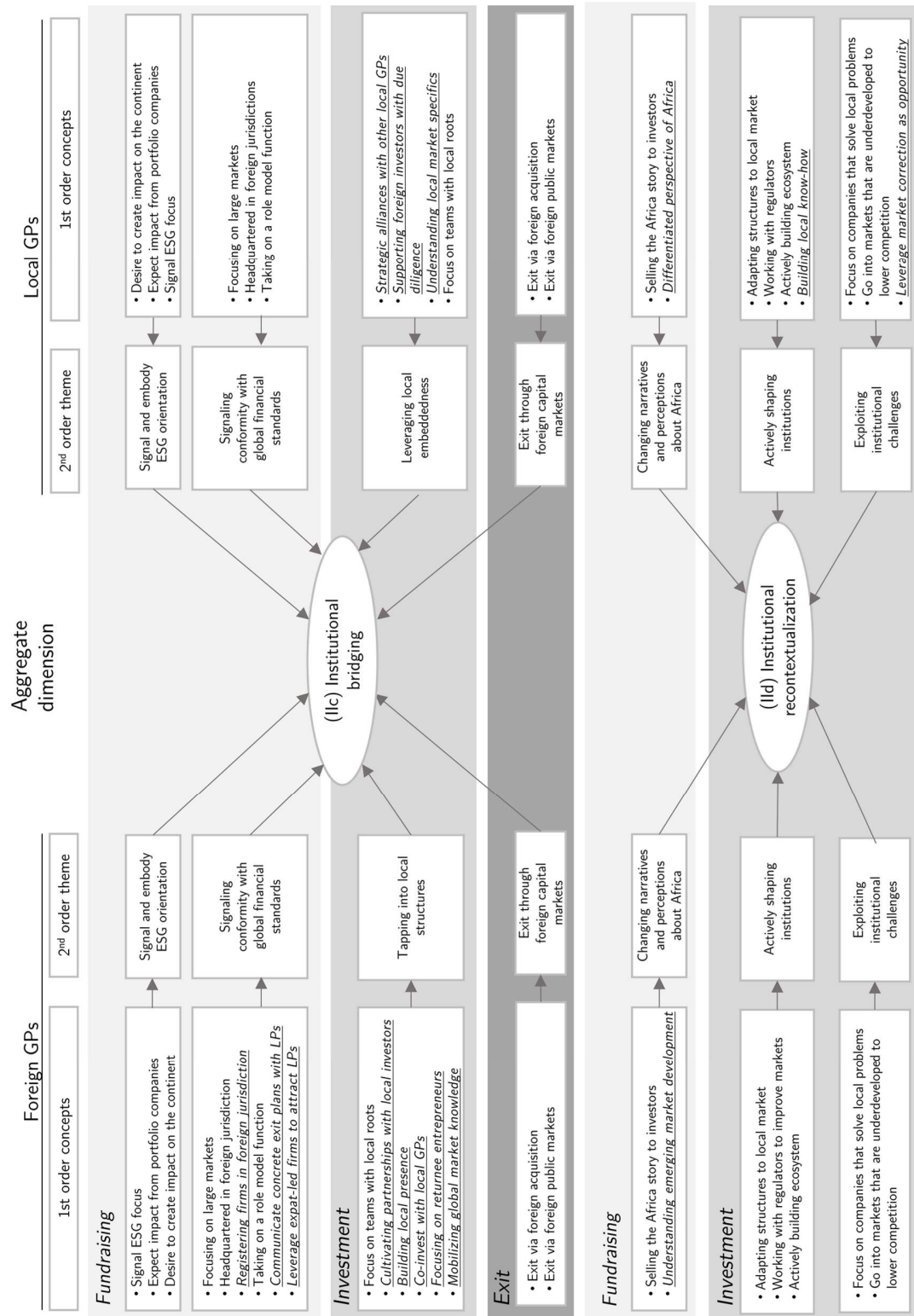


Figure 10: Data Structure GPs' strategic responses (continued)



6.4 Findings

6.4.1 Challenges in Africa's Market for Venture Capital

My findings suggest that VC investors in Africa are subject to significant institutional challenges. Figure 9 shows the first order categories, second order themes and aggregate dimensions for institutional challenges, while exemplary proof quotes can be found in Appendix 11. I will summarize the main institutional challenges in the following paragraph, and give detailed insights into the findings in the subsequent sub-sections. Findings are recounted consecutively, as displayed in the respective figure. Formal institutional voids (Ia) impede seamless operations throughout the entire VC cycle. Expectations of international institutional fields (Ib) refer to standards expected by the institutional field of globalized finance and that may be more challenging to fulfil in African markets. The financial subordination of Africa (Ic) refers to its inferior position in the global financial hierarchy, which is interrelated with the other dimensions.

Challenges of Formal Institutional Voids. The data reveal that formal institutional voids within Africa's market environment pose significant operational challenges throughout the VC cycle for all interviewees (Ia). In the fundraising stage, this seems primarily related to unfavorable macroeconomic conditions due to inappropriate economic policies and institutions. Hence, Africa either appears unattractive to investors or exposes them to outsized risks, causing LPs' reticence to invest. One of the most frequently mentioned challenges are unfavorable foreign exchange effects and capital controls, limiting the repatriation of profits. Various interviewees also mention that African markets are too small to entice many international investors, raising a second challenge. Small market size, in turn, may be directly related to ineffective political institutions that have failed to drive growth and harness the continent's potential. One foreign DFI poignantly notes:

You always have to keep in mind that the whole of Africa has a smaller GDP than France. So if you subtract oil, gas and mining, then you know what we're talking about. So that's absolutely small and irrelevant for really big investors. (D2)

The challenges posed by institutional voids are perhaps most numerous once GPs enter the investment process stage. According to our interviewees, in this phase, institutional voids pose significant challenges for GPs during target selection, post investment management, and monitoring. Interviewees frequently mention the operational hurdles that portfolio companies face and which therefore endanger GPs' returns. For example, many companies exhibit a lack of investment readiness due to subpar reporting standards (F2). According to the data, a sudden license withdrawal by unpredictable regulators represents another hurdle, especially in sectors like fintech that require regulatory approval. One GP mentions that "the Central Bank of Nigeria has been the biggest problem [...] in terms [...] of arbitrary rulings" (F8).

Interviewees also suggest that insufficient infrastructure presents another challenge. Business models like e-commerce, for example, may struggle because, "if you have a transportation system that's broken, it's really hard to imagine that people will enjoy buying online" (F6). Therefore, uncritically copying business models from the Global North could be detrimental, as some interviewees suggest. Further, many interviewees mention that their portfolio companies struggle with recruiting, as Africa has "a talent squeeze for top talent" (L4). Many educated applicants have degrees from universities in the Global North and chose to work abroad due to better opportunities and higher wages. Meanwhile, some interviewees argue that local educational institution may not be sufficiently developed to provide their graduates with the necessary cutting-edge skills (e.g., L4). In addition, many LPs that are active in Africa have rigorous environmental, social and governance (ESG) requirements. GPs frequently pass these requirements on to their portfolio companies. Thus, some GPs

mention that ESG requirements, while generally sensible, may impose a “administrative and financial burden on these early stage companies” (F8).

Beyond the operative challenges for portfolio companies, the data suggest that formal institutional voids also create direct hurdles for non-African GPs in particular. Many interviewees mention a lack of knowledge of the African institutional market environment, which reduces foreign GPs’ ability to understand the problems local populations face. This, in turn, lowers their ability to make good investment decisions, as many interviewees view startups that solve local problems as the most promising investment targets.

Furthermore, many international GPs have no local presence and try to make decisions and monitor their portfolio companies from abroad. The data indicate that this investment approach is less likely to be successful, possibly due to informational asymmetries related to institutional voids which complicate target selection and monitoring. This is aptly described by an investment associate at a European impact investment firm:

[...] it's difficult for some of the investors who have offices in London or in Paris or in New York, not to have a presence on the ground, because access to information is much more difficult than in other geographies [...] it takes really local network to have this kind of information. (F2)

Lastly, local institutional voids also create challenges for VC investors in the exit stage. Many interviewees note that Africa has very shallow and few public markets, meaning “you don't see many IPOs “(A1). The data also suggest that secondary markets tend to be illiquid, intransparent, and have few bidders. Correspondingly, many interviewees lament a lack of African capital as local investors fail to allocate funds towards VC. Similar to fundraising, this makes GPs dependent on external capital to exit investments. As a result, large VC exits still appear to be rare in Africa.

Expectations of International Institutional Fields. International LPs in my sample reveal more or less consistent standards regarding VC fund administration, lifespan, compensation, ESG criteria, and performance. Similarly, international GPs appear to have somewhat consistent expectation regarding deal sourcing, due diligence, reporting and legal requirements. These expectations appear to derive from the institutional field that has emerged among globalized VC players (Ib). The data suggests that this creates two types of challenges. First, international VC investors may struggle with having to adapt their institutional models to the realities of investing in Africa, as their expectations may not always be met. Second, GPs in general and local GPs in particular may find it more difficult to meet these expectations than in the Global North.

This institutional dimension appears to be particularly relevant throughout GPs' fundraising stage. Strict LP criteria consistently emerge as a theme. This is closely related to the outsized role that DFIs play among Africa's LP-base. Given their development mandates, DFIs in my sample express rigorous ESG and impact criteria to their fund managers (D1, D2). These criteria concern both GPs' own internal processes as well as their portfolio companies. However, expectations appear to go beyond mere compliance. Some DFIs also expect their fund managers to demonstrate their portfolio companies' developmental impact on issues such as job creation, gender equity, carbon reduction and electrification (D3, D4, G6).

However, GPs stress that these strict criteria can be challenging. Fund managers often do not have sufficient ESG processes in place. Yet, building such capacity appears to be time-intensive and costly. Some GPs suggest that, given how expensive operating a VC fund in Africa is, management fees are too small to properly implement such processes (L5). Failing to do so, however, can significantly reduce the chances of raising funds from DFI-related LPs. One GP from a Southern-African VC fund voices their frustration as follows:

They come and say we're going to give you \$5 million, but in return you have to get all kinds of ESG stuff done. [...] it's going to cost \$5 million just to do that. Then what are we going to invest with [...] It's so hard, so I understand why people give up. (L5)

Some interviews suggest that international LPs have doubts about the ability of the VC model to work in Africa. Given Africa's institutional environment, LPs expected returns or diligence requirements may not be met. When asked about what might be interesting about VC investments in Africa one international LP suggests that "it is not so obvious that it really is interesting, because otherwise more people would go in" (D2).

Potentially due to doubts about whether institutional expectations will be met, a number of quotes suggest that LPs' due diligence in Africa is stricter than elsewhere. Furthermore, some GPs report that they are being offered lopsided terms. Africa-focused GPs' inability or unwillingness to abide by these harsh terms may make their fundraising process more challenging. One GP rather sarcastically remarks:

[...] they don't want to put money into African structures. That's why we are now set up in Jersey. It's great, it costs us so much money to do it. But as I said....compliance... and....they insist on the right to fire us at any time without us having done anything wrong. (L5)

A second theme related to expectations of the institutional field of globalized finance relates to doubts about African VC funds' ability to deliver returns that are on par with other markets due to historically subpar returns in the region. For instance, the relative rarity of successful late stage rounds may decrease the likelihood of achieving high returns when exiting (e.g., A1). Furthermore, despite being generally bullish about Africa, one director at a large corporate LP from Europe tempers his exuberance by alluding to the superior performance of Asian VC funds (D5). In this context, some interviewees in my sample have voiced their concern about the historic underperformance of private equity funds in Africa (F7, L6).

Africa's Financial Subordination. The third and final institutional dimensions relates to Africa's financial subordination (Ic) in the global financial hierarchy. Based on interviewee responses, I conceptualize Africa's financial subordination in two ways. First, some investors express biased views or make biased decisions. Second, some institutional structures cement Africa's subordinate position in the global financial system and therefore create challenges for VC investors.

Africa's financial subordination emerges as particularly acute in the fundraising stage. This appears ultimately rooted in an unbalanced structure of the global financial system. Some GPs suggest that the chances of attracting international LPs may increase when they are domiciled in offshore financial centers (L5, F8, D2, A5). One executive from an international Africa-focused fund recounts that they are "a Mauritius domiciled fund [...] the investments we make are into holding companies in Delaware [...] completely safe jurisdictions where international investor [...] don't feel any friction" (F8). As a result, some African GPs may be unable to participate in large deals, as respective investment vehicles are often registered in places like Mauritius, Luxembourg or Cayman Islands while some African jurisdictions prohibit investing abroad (D2).

These institutional structures may encourage capital flight out of Africa, despite the fact that the investment targets are often local. This may accelerate the tendency of African elites to invest their money abroad leading to a dearth of local capital especially for later stage rounds. One local fund manager pointedly remarks:

...a lot of people, when they generate some wealth, they prefer to put it in environments they perceive as safer [...] Swiss bank accounts, US capital markets [...].a home in London or Paris... (L4)

Therefore, the structure of the global financial system is intimately linked to a second emerging theme: Africa's high dependence on foreign capital for VC funding. A variety of interviews in my sample suggest that this is driven by a lack of African capital. In addition

to the aforementioned capital flight, local institutional investors do not invest in VC as “the interest rates on government paper tend to crowd out private capital” (D4). As a result, Africa-focused GPs rely mostly on foreign capital. In particular, given that “not enough capital is allocated by corporates and others, most of the capital that's allocated for funds in Africa comes from DFIs” (F9). The outsized dependence of DFIs as LPs for Africa-focused funds is reiterated by numerous interviewees in my sample.

Nevertheless, some participants suggest that recent years have also seen increasing interest by purely commercial investors. However, this development has proven volatile as “whenever there's some [...] tumultuous environment, they withdraw” (F9). Thus, the dependence on external capital makes VC investors vulnerable to sudden outflows by international LPs, complicating fundraising. This dependence on foreign LPs creates significant power imbalances. One DFI executive admits that they “dictate everything [...] the reins are very tight, because you have too much power...” (D2). This dependence on international investors is also raising challenges in the exit stage. Similar to fundraising, Africa-focused VC investors are dependent on international buyers for late-stage funding rounds and consequently exits. However, some interviewees mentioned a lack of foreign buyers (D2, D4, F1). Against this background, the previously mentioned outflow of foreign capital due to market uncertainty may exacerbate this problem.

This dependence on a few international LPs also exposes Africa-focused VC investors to biases external LPs may have. Negative views and narratives about Africa are some of the major themes that emerge from the data. These views seem to be often connected to a lack of knowledge about the continent. A manager from a US-based technology accelerator for emerging markets recounts how seasoned venture investors from the US “were still mixing up Kenya and Nigeria” (A1), even after several weeks of advanced negotiations. This lack of knowledge makes international LPs susceptible to prejudices about Africa (A3). This

includes “perceptions that Africa is corrupt” (L5), which many foreign LPs exhibit according to local investors. Furthermore, some local GPs suggest that these narratives may be driven by “the way the media portrays the region” (L6). Thus, the data suggests that these biased narratives may be deeply rooted in the imagination of investors from the Global North. One local GP poignantly summarized this by saying:

Africa is still for most people [...] begging, poor children with tears and flies in their eyes. And quite honestly, I understand it when I go to Germany and hear what is being reported on Africa. (L5)

The data suggest that these biases also extend to Africans. An investment analyst with an Africa-focused accelerator from Europe suggests that “we Europeans [...] have a certain image of Africans” (A3). When asked about why many international investors view Africa as particularly corrupt, an American GP made the following unequivocal statement:

Racism? Yeah, right. No, absolutely. Right. Wirecard! Like Really?? Like, there are people being opportunistic globally, you know, it's a tiny minority. (F8)

Possibly as a result of these biased narratives, many international investors have a very high risk perception of Africa. In fact, most interviewees in my sample seem to indicate that international investors overestimate the risks involved with investing in Africa. Even DFIs, who have the mandate to de-risk VC transactions to draw in private investors, agree that risks may sometimes be overestimated. A portfolio manager with a European DFI, for instance, notes “I have the impression that sometimes they are overestimating some aspects” (D4), referring to commercial investors from the Global North. This is mirrored by a commercial GP from Europe who suggests that “there is more perceived risk than what there truly is” (F6). As a result of this high risk perception, many international LPs may refrain from investing in Africa or reduce their African allocations. This may make fundraising much more challenging for Africa-focused GPs.

This dynamic may also lead to disadvantages for local GPs compared to their Africa-focused peers from abroad when raising funds. Some DFIs in the sample suggest having a preference for fund managers with African roots who have studied or worked in the Global North (D2). This is reiterated by a partner from a local advisory and investment firm who talks about “the benefits of having worked and lived in the West” (A5). In consequence, local investors without such credentials may struggle to raise funds. Furthermore, various interviewees suggest that international LPs prefer to invest in funds that are led by expats (L1, L4), possibly as a mechanism to mitigate the perceived high risk. This is particularly relevant, given that LPs prefer to invest in funds with a track record (F9), which may be harder to obtain for local fund managers.

Such disadvantages for local GPs may also play a role in the investment phase. A number of local GPs suggest, for example, that they feel under a lot of pressure to perform, given that their failure would reflect poorly on the whole market (L1, L5, A4). Furthermore, the inflow of global funds led to high valuations (F9). Given fundraising difficulties, this may make it harder for local GPs to compete. An analyst at West African VC firm suitably remarks there being a “pressure from foreign funds like the Tiger Globals of the world, who can come in and write bigger checks” (L1). Some local GPs suggest that this may be reinforced by the lack of a well-developed VC ecosystem that they can leverage, whereas international GPs can often draw on the strength of their domestic VC ecosystems abroad.

6.4.2 Strategies for Dealing with Institutional Challenges

Figure 10 illustrates four strategic dimensions that VC investors in Africa use to respond to the aforementioned institutional challenges. The juxtaposition between local and international GPs highlights differences in their strategic approach. Utilizing international networks (IIa) allows local and international GPs to acquire resources. Operational responses to local institutions (IIb) refers to measures undertaken by investors in response to the

operational challenges presented by local institutions. Unlike the three other dimensions, which are more strategic, these responses are more operational. Institutional bridging (IIc) denotes strategies that GPs engage in to bridge the institutional differences between the African VC market, which is characterized by institutional voids, and the expectations of the institutional field of globalized finance. Institutional recontextualization (IIId) involves strategies through which GPs try to counter and emancipate themselves from the financial subordination that Africa's VC market is exposed to. Subsequently, I will derive each of these four strategic dimensions in detail.

Utilizing International Networks. The data suggest that both international and local GPs extensively utilize international network throughout the entire VC lifecycle, primarily to acquire resources. In the fundraising stage, attracting the right types of international investors is one theme that emerges from the data. Given that commercial LPs are hesitant to invest in Africa-focused funds, both international and local GPs try to attract DFIs who may act as “first risk capital” (F7) and “be catalytic” (L6) to draw in other investors.

Both types of GPs also try to attract other types of international LPs that appear inclined to invest in Africa including high-net-worth-individuals, family offices and impact investors (e.g., F6, F7). In general, the breadth of investors available to international GPs seems to be larger than for locals. One executive at an American VC firm even mentions that the firm's LP-base consists of “mostly retail investors” (F8), and suggests this is related to their more lenient ESG requirement and therefore less administrative burden. The option of having exclusively commercial LPs is not mentioned by locals. This may indicate international GPs' superior networks.

The data reveal a peculiarity of local GPs when it comes to attracting the right international investors. Some local GPs make sure to keep their “LP base quite diverse [...] to have resilience” (L6). This may make them less vulnerable to potential biases by particular

investors and sudden outflows. The fact that this is not mentioned by international GPs may indicate that they are less affected by these problems. Furthermore, local GPs suggest the need to diversify across African countries as foreign LPs “prefer a pan-African strategy” (L5), possibly to reduce risks.

Both types of GPs also utilize international partnerships in the investment phase. They may for example co-invest with their LPs or other international GPs to increase ticket sizes (F8, F2, L7). Furthermore, GPs appear to use their LPs’ connections and experience to increase their portfolio companies’ chances of success. An investment officer at a European GP, for instance, mentions that some LPs “are super helpful in terms of connecting our companies to different corporates” (F9).

Closely related, GPs appear to use their LPs to orchestrate successful exits. This includes investing in companies that strategically complement their corporate LPs’ businesses in the hope of a strategic acquisition (F1, D5). This requires communicating concrete exit plans to LPs, as the latter will be able to assist with the exit by using their own network (F8). For example, one GP stresses the importance to have the right international co-investors for their portfolio companies’ as they “ultimately will buy this company if it succeeds” (F7). However, notably leveraging LP connections for exit was exclusively mentioned by international GPs. This may indicate that the relationship with their LPs may be more evenly balanced than may be the case for local GPs.

Operational Responses to Local Institutions. Strategies that involve dealing with the operational challenges arising from institutional voids in local markets are particularly relevant once GPs enter the investment stage. How to successfully select targets in contexts of institutional voids emerges as one theme. As outlined above, most African markets are comparatively small. To ensure their startups have significant markets to grow “a number of the VCs in Africa today are mainly focusing for larger markets” (A1). Multiple

interviewees stress their primary focus on Nigeria, Kenya, Egypt and South Africa. However, GPs do not merely appreciate these markets for their sheer size but also because “they have the best pools of talent” (L4).

Closely related, some of the GPs in my sample seem to mostly focus on startups with business to business models (L5, F7, F8, L5), due to much lower purchasing power of African consumer. In order to understand these market specificities and reduce the operational challenges, many investors stress the importance of investing in teams with local roots. One local GP argues that “these founders have experience in these markets and know what the pain points are and they know who their customers are” (L1). Consequently, in their experience “local teams are [...] generally better performing” (L1). Furthermore “once it gets more challenging [...] local founders are a lot more prudent”, according to one South Asian investor operating in Africa (F4). Therefore, investing in local teams may enable GPs to mitigate some of the operational risks in Africa. Although both local and international GPs see the value of investing in local teams, this seems to be more heavily emphasized by local and emerging market investors.

In order to mitigate some of the aforementioned operational risks, GPs stress the importance of performing rigorous due diligence before investing. This includes screening the individual founder to make sure that they are honest, trustworthy and resilient. It also includes regulatory due diligence to reduce the risk of sudden regulatory withdrawals. Nevertheless, GPs highlight the importance of maintaining a fast and agile due diligence process, for example, through the use of technology (e.g., L4, F8).

Some international GPs go beyond sound due diligence in order to mitigate operational risks arising from the institutional environment. An executive with an American VC firm outlines that “most of the investments we make [...] have a holding company in Delaware where the IP is protected in completely safe jurisdictions” (F8). By registering their portfolio

companies in offshore financial centers, this GP opts completely out of African institutions and obtains legal protection that is on par with standards in the Global North. However, at the same time, the intellectual property is effectively exported. Interestingly, none of the local GPs in the sample allude to this particular strategy. Furthermore, some GPs mention their efforts to avoid the overvaluations that have recently increased in Africa due to the influx of foreign investors, and insure that their targets are valued fairly.

A second theme relates to measures that VC firms take to help their portfolio companies deal with operational challenges in African markets. In general, the majority of GPs in the sample take a very active approach to post investment management as even tech startups in Africa can be quite “operationally intensive” as they often still require a physical footprint (F9). Thus, post investment management in Africa may require more involvement. This indicates that given the depth of institutional voids, offering value added services is particularly crucial in Africa.

Crucially, most GPs help their portfolio companies with access to follow-on capital, for example, by leveraging their networks and “making a lot of investor introductions” (A3) or providing them with “reputational backing” (F3). Further support includes talent acquisition (e.g., F8, L2) and dealing with regulatory requirements (F8), including “getting their finances in order” (A5). Some GPs also try to reduce their portfolio companies foreign exchange risk by encouraging them to make US-Dollar revenues (L6) or diversify across countries. Similar to their use of networks, the breadth of support activities appears larger for international GPs. Unlike local GPs, they also recount actively helping portfolio companies with international expansion plans (F8, F6, F4), customer acquisition through their networks (F8, F7, F1), and building out active peer networks between their portfolio companies (F8, F2). Again, this may indicate international GPs’ superior resource endowments and networks.

In the exit phase, GPs tend to form plans for how they will exit their investments, given the challenging capital market institutions in many African countries. Most GPs mention their willingness to eventually exit investments by either horizontally merging multiple similar companies or through a corporate acquisition. Furthermore, many GPs plan to exit at later funding stages by selling their shares to new investors. The data suggest that local GPs are particularly forward-looking as they invest with a clear exit plan in mind from the start. This may be an indicator of their superior local market knowledge, concerning the lack of liquidity in Africa's VC market.

Institutional Bridging. Institutional bridging denotes strategies that Africa-focused GPs engage in to reduce the institutional distance between African VC markets and the institutional field of globalized finance. One theme that emerges from the data in the fundraising stage involves the importance of signaling and embodying an ESG orientation, as mentioned in a number of interviews (e.g., L4, L5, F6, F8). This is crucial as “a lot of the capital being attracted to the continent comes with an SDG attachment” (F6). This is likely related to DFIs' development mandate, given they are the most important LPs on the continent. As a consequence, GPs pass these requirements to their portfolio companies and use various metrics to assess the ESG contributions of potential targets (G6). However, beyond just being a means to an end, most of the GPs in my sample exhibit a genuine aspiration to make an impact. For example, one GP voices a desire “to make sure that the majority of Africans are included in the financial sector” (L3). Thus, GPs with a genuine impact-orientation and who signal their emphasis on ESG appear better poised to bridge the institutional distance between Africa and international financial institutions, given expectations of international financial actors.

Another theme that emerges in the fundraising stage involves GPs signaling their conformity with global financial standards. This includes making sure that their startup solutions are

“reaching a large market” (F6), which may reassure LPs who have reservation about Africa’s relatively small markets. Some GPs are themselves headquartered in offshore financial centers (e.g., F8, L5) or insist their portfolio companies do so (F2). Notably, the latter approach is particularly emphasized by international GPs. By doing so, GPs ensure they are subject to the international standards that LPs expect. Hence, they essentially try to circumvent institutional voids in Africa. To circumvent international LPs biases against Africans, some GPs deliberately invest in expat founders as they help them attract foreign LPs (F8).

Some GPs stress the importance of acting as role models by delivering returns which would then facilitate fundraising for all GPs in the ecosystem (F7). After having successfully realized their funds, one GP points out that they “have proven that VC can work in Africa” (L5). Thus, ensuring good performance may guarantee that LPs will become more enthusiastic about investing in Africa. This includes the importance of clearly communicating exit plans to LPs and hence alleviating their worry about unsuccessful exits in Africa (F8). Interestingly, communicating exit plans seems something that is particularly stressed by foreign GPs and could indicate their superior familiarity with requirements of international capital markets.

In the investment phase, the differences between local and international GPs are particularly pronounced. Local GPs leverage their local embeddedness, while international GPs try to tap into local structures. Local GPs, for example, form strategic alliances with other local GPs. This enables them to share insights and opportunities. Furthermore, they tend to leverage their local embeddedness by supporting foreign investors with due diligence (e.g., F6, L1, L2). This may allow them to participate in deals and raise larger tickets by syndicating with foreign VC funds. The latter, in turn, benefit from local GP’s superior market knowledge (e.g. L1, L2). This gives them a better understanding of suitable business

models for the continent as “copy and paste solutions may not work” (L1). It also enables them to assess a market’s true size. While international investors may have a singular focus on large markets, local GPs caution that the market may seem vast but the fraction of the population with significant purchasing power only represents a small segment (L1). Thus, local GPs tend to intermediate between foreign investors and local markets. An African angel investor summarizes this as follows:

We do not, under any circumstances, encourage any international investors to invest in Africa without local investors because it is high risk and if you don't have a local presence, you will lose your money. (G6)

International GPs try to tap into local structures by building a local presence (A3). This seems important for target selection as proper monitoring requires close proximity, especially in Africa. The founding partner of a local advisory firm notes that “what we call the fly-in model, you know, everyone is sitting in London, New York, Dubai [...] it's not going to work.” (A5). One European DFI manager supports this by saying that “in the case of investments that are not going well, if you analyze the management, the people are not on the ground.” (D1). International GPs also appear to seek co-investments with local GPs. One manager with an American accelerator shared that many international GPs will not invest without the involvement of a local partners (A1). Some local GPs encourage “bringing diaspora back to the continent” (F6). Such returnee entrepreneurs may present them with the right mix of highly-skilled talent that is familiar with both local markets and international standards.

Whereas local GPs leverage their local market knowledge, international GPs seem to mobilize their global expertise to make sense of the African market environment. Part of that derives from drawing parallels with other emerging markets. A director with a corporate VC from Europe, who had also gained experience in Asia, is convinced that “the next big wave we will see is Africa” (D5). A partner with a South Asian VC firm compares their

home market to Africa noting that having gone through similar experience in their home market allows them to leverage this experience (F4). One common denominator between both local and international GPs is their focus on teams with local roots. Despite international GPs' willingness to support expat-led startups, one executive from an American VC firm notes that most of their founders are local as "they are able to navigate [...] some of the friction and potential regulatory issues" (F8).

In the exit phase, GPs try to exit through foreign capital markets thereby circumventing local capital market voids. Thus, they essentially try to bridge the distance between local VC and foreign capital markets. In this context, the most frequently mentioned exit strategy by both local and international GPs involves foreign acquisitions (e.g. F7, L6, L5, F9). Hence, GPs strive to make their portfolio companies "interesting for [...] international corporates that are looking to get exposure to this market" (F9). More rarely, GPs note the potential to exit through "public foreign markets like New York or London" (L2).

Institutional Recontextualization. Institutional recontextualization refers to strategies through which GPs try to emancipate Africa's institutional environment from negative perceptions and reframe it in a positive light. In the fundraising stage, one emerging theme involves changing narratives and perceptions about Africa. To counter international LP's negative perception, GPs try to sell them the African development story. One GP, for instance, draws parallels with China's development in recent decades and warns LPs against missing such a lucrative growth market (F7). This may convince some investors to make small allocations to Africa in order not to miss the upside. A local deal advisor confirms that "foreign investors follow the macro story [...] if you can prove middle class demand [...] you'll have a lot of interest" (A5). Drawing connections with other emerging markets appears particularly prevalent among international GPs who have prior emerging market experience. Some GPs also stress "the obvious ability to make an immediate impact" (F8), given the

impact-orientation of many LPs. One local GP tries to promote a more differentiated and realistic view of Africa, highlighting the opportunities without downplaying the risks. He notes that “the first misconception is that Africa is a singularity.” (G6).

In the investment process phase institutional recontextualization involves very proactive strategies. First, GPs appear to actively shape African institutions. This goes beyond merely trying to appeal to international standards, but includes changing local institutions to support a genuinely native VC market. This involves, for example, adapting the structure of VC deals to increase fund terms, changing fee arrangements, and introducing new types of investment vehicles to be more suitable to local market conditions (F4, F6, F7, A5). Similarly, some GPs mention actively working with regulators and governments to shape regulation that facilitates VC investments on the continent (e.g., L4, F8). Beyond the formal institutions, many GPs in my sample voice “an obligation to the ecosystem” (L6). Thus they tend to be involved in developing the local entrepreneurial ecosystem. Hence, they strive to develop hubs that match the innovation capacity of other regions globally. Local GPs, in particular, express the desire to build local know-how and talent (L4). Similarly, they encourage founders to build their own infrastructure where it currently does not exist (L1).

Furthermore, instead of seeing institutional voids as mere impediments, many GPs exploit institutional challenges as opportunities that their portfolio companies can address. GPs in my sample seem to overwhelmingly invest in startups that “are targeting large problems which can be solved” (F4). This involves everything from “supporting small scale farmers” (D3) to “financial inclusions” (A1). Investing in businesses that solve problems for millions of people could allow tremendous upside with relatively simple business models as one director from a European corporate LP suggests (D5). This approach involves purposefully moving into more underdeveloped markets as the problems to be solved are larger and

competition is more limited (L3, F8, F9). Possibly due to this positive mentality, some GPs express the market downturn in 2022 as an opportunity, as the resulting lower valuations may allow local GPs to make more competitive bids (L4).

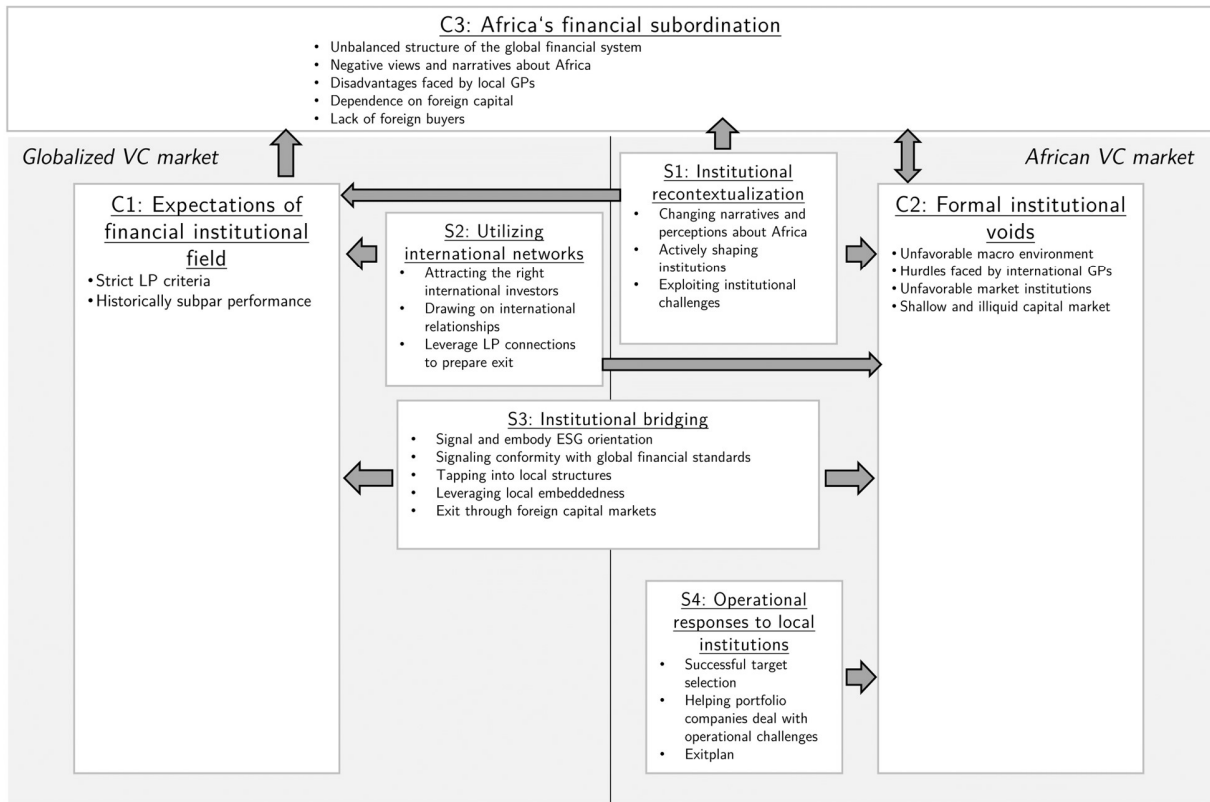
Thus, institutional voids are perceived ambiguously by GPs. While institutional voids may often impede smooth operations, many interviewees understand that they could also be the source of business opportunities in Africa. Furthermore, some interviewees view Africa's institutional environment as a genuine source of cutting-edge innovation that could be applicable to other contexts (L5).

6.5 Discussion

6.5.1 Towards an Institutional Model of Venture Capital Investing in Africa

Based on my findings, I propose a model for VC investing in Africa which Figure 12 illustrates. The model demonstrates which strategies VC investors in Africa engage in and which institutional challenges they address. Thus, it unifies the institutional challenges and strategic responses that are investigated separately in the prior section. It also demonstrates how strategies mitigate said challenges. This connection will facilitate the theoretical contextualization of the findings and the clarification of their practical implications. VC investors in Africa are exposed to clashing institutions. My findings indicate three dimensions of institutional challenges, abbreviated C1 to C3 in Figure 11. Challenge 1 is rooted in the institutional field that surrounds globalized financial institutions and the associated expectations of international investors. Challenge 2 derives from local, African VC markets. They are subject to institutional voids posing operational challenges to VC investors. Africa's financial subordination (C3) towers above and is interrelated with the other two challenges. In the context of the unbalanced structure of the global financial system, the stringent expectations of globalized finance can reinforce Africa's financial subordination.

Figure 11: Towards an institutional model of VC in Africa



Similarly, the lopsided structure of the global financial system contributes to Africa's institutional voids. At the same time, institutional voids and the related underperformance of Africa in economic terms further cement its subordinate position.

Against this background, GPs in my sample use four strategic dimensions, abbreviated S1 to S4. These strategies dimensions allow them to engage with one or more of the aforementioned challenges. Strategy 1, institutional recontextualization, involves reframing Africa's institutional environment in a positive light. By changing the narratives about Africa, GPs try to counteract Africa's financial subordination (C3). This could also lead to a shift in expectations of the financial expectations of globalized finance with respect to Africa (C1). At the same time, by exploiting Africa's institutional void as an investment opportunity rather than merely operational hurdles S1, represents a direct reaction to C2. Strategy 2 involves using international networks. On the one hand, this allows GPs to get

in tune with expectation of globalized financial markets. On the other hand, GPs are able to leverage these networks to acquire resources and circumvent African capital market voids.

Strategy 3, institutional bridging, involves reducing the institutional distances between the two clashing sets of institutions. This entails conforming with the expectations of international investors while leveraging specialized knowledge about the local structures to invest successfully. Lastly, Strategy 4 refers to approaches that allow GPs to navigate local institutional challenges. This includes target selection approaches suitable to the African environment and active post investment management to help portfolio companies overcome operational impediments.

6.5.2 Theoretical Implications

Most of the empirical research on VC in emerging markets in the last two decades uses quantitative methods, which treat the decisions and perceptions of VC investors as a black box (e.g., Khurshed et al., 2020; Zheng & Xia, 2018). Thus, with the present empirical study, I hark back to the seminal qualitative work by Ahlstrom and Bruton (2006). Indeed, my findings are partly in line with Ahlstrom and Bruton's (2006) work on Asia. Unsurprisingly, institutional voids create challenges for VC investors in Africa. As with Ahlstrom and Bruton (2006), my findings suggest that VC investors' network ties are an important strategy to navigate such institutional challenges. However, I go beyond Ahlstrom and Bruton's (2006) initial work in a number of ways. First, while they try to reflect the entire VC cycle, their primary focus seems to be on target selection, screening, and monitoring (Ahlstrom & Bruton, 2006; Bruton & Ahlstrom, 2003). Most importantly, they do not reflect the fundraising process and LP relationships. Meanwhile, my findings consider the VC cycle more holistically and pay particular attention to the challenges GPs encounter when fundraising and to their relationships with LPs.

Second, through my geographic focus on Africa, I make an empirical contribution by demonstrating how institutional theory can explain the VC market in Africa. I also make a theoretical contribution by drawing on the institutional peculiarities of Africa to extend institutional theory. For example, while Ahlstrom and Bruton (2006) exclusively focused on institutional voids, the present study leverages post-colonial literature to demonstrate that VC investors also contend with Africa's subordination in the global financial system and expectations of globalized finance.

I join a small number of studies in the management and entrepreneurship literature which combine insights from institutional theory and post-colonial literature (Jackson, 2012; Zoogah, 2021). In doing so, I am able to demonstrate the challenges VC investors face in Africa, which to a large extent are still influenced by its colonial past and related power relations. However, I also address one criticism according to which post-colonial theory frequently views Africans as passive victims of their circumstances. By drawing on the institutional entrepreneurship literature (Mair & Marti, 2009; Mair et al., 2012; Tracey & Phillips, 2011), I indicate that local actors practice a lot of agency in shaping their institutional environment.

I also contribute to other relevant literature streams. For example, my findings concur with Espinoza Trujano and Phiri (2022) who also find stereotypical views about Africa among LPs. Furthermore, the institutional bridging dimensions supports the case for syndication among foreign and local GPs in emerging markets (Humphery-Jenner & Suchard, 2013; Khavul & Deeds, 2016; Khurshed et al., 2020). I also add to the growing literature on the political economy of globalized financial markets and Africa's subordination within them by illustrating a concrete example of what related authors discuss on a more abstract level (Alami et al., 2022; Bonizzi et al., 2022; Koddenbrock et al., 2022; Kvangraven et al., 2021).

6.5.3 Practical Implications

My findings have practical implications for LPs, GPs, and policy makers. In general, GPs should actively promote a positive image of Africa with international LPs. All GPs should strive to attract DFIs as LPs, as this may enhance the confidence of prospective commercial LPs. However, local GPs in particular should diversify their LP-base to be less vulnerable to capital flight during market downturns, for example by adding local LPs. Furthermore, local GPs should strive to recruit a team with an international track record but deep knowledge of local markets, as foreign LPs tend to gravitate to such team. This will also allow local GPs to position themselves as intermediaries between the local markets and international GPs. Such syndications are crucial for both local and foreign GPs to bridge the institutional differences between both contexts.

All Africa-focused GPs should have a local presence as this increases the likelihood of raising funds from DFIs. This is particularly important for foreign GPs who are less familiar with African markets. Having a local footprint facilitates screening for targets and monitoring portfolio companies. However, for the time being GPs may want to consider setting up their legal and financial fund structures abroad in order to appeal to international LPs. Furthermore, all GPs should put ESG processes in place and credibly demonstrate their willingness to incorporate ESG criteria into their investment decisions, given the ESG-orientation of many LPs in Africa.

As Africa's most important LPs, DFIs should consider the drawbacks of LPs' insistence on registering funds in offshore financials centers and whether this is line with their development mandate. Regarding ESG, DFIs should consider the effects their ESG requirements have on their funds' portfolio companies and try to reduce the administrative burden. Policy makers, in turn, should improve financial reporting and compliance requirements on the continent to make international investors more comfortable with

investing in local structures. In addition, they should incentivize local capital pools to allocate more funds to the VC industry to reduce the dependency on foreign LPs.

6.6 Conclusion and Research Outlook

My initial research questions asked (a) what institutional challenges VC investors in Africa face and (b) how they strategically navigate said institutional environments. The present study answers those questions by drawing on an abductive analysis of 27 interviews with VC investors in Africa and by combining institutional theory, post-colonial literature and the emerging literature on Africa's financial subordination. I illustrate that VC investors in Africa face three dimensions of institutional challenges: local institutional voids, hard-to-fulfil expectations of globalized financial institutions, and Africa's financial subordination. Further, I demonstrate that, in response to these challenges, GPs in my sample employ four strategic dimensions: utilizing networks to acquire resources, formulating operational responses to local institutional voids, bridging the institutional distance between local markets and globalized institutional fields, and recontextualizing local institutions.

Therefore, the study makes two contributions. First, it makes an empirical contribution by being the first empirically rigorous, qualitative study to shed light on the perspective of VC investors in Africa. Second, it makes a theoretical contribution by demonstrating that the combination of institutional theory, post-colonial literature and the literature on Africa's financial subordination is suitable to explain Africa's VC ecosystem. It also enriches institutional theory by drawing on the empirical peculiarities of Africa's VC market.

Naturally, this study has some limitations. First, as with all qualitative research, it is unclear how generalizable my findings are to the population of VC investors in Africa. Future studies should strive to operationalize some of the concepts uncovered in the present paper and apply them to larger, more representative samples through the use of quantitative methods. Second, determining which of the interviewed VC firms was actually African and non-

African required some qualitative judgement by the author. Many firms have GPs of African origins but are headquartered abroad and vice versa. Expanding the study to a larger representative sample of VC firms could help to verify whether the identified difference remain. Third, while I uncover strategic approaches used by GPs, it is unclear which of these strategies is most effective in maximizing VC funds' returns. Future research could seek to evaluate which of these strategies is most effective to increase the confidence of practical recommendations. This ties directly into the final point. Africa's VC ecosystem is still in relatively early stages as hardly any funds have passed through the entire VC cycle. Future studies should compare VC performance in Africa relative to other regions once enough funds are realized.

7. Concluding Discussion

7.1 Theoretical Implications

This dissertation makes various contributions to the theoretical literature. In particular, it contributes to the discussion around institutional theory in emerging markets. Through its findings, it transcends the prominent view that institutional voids are necessarily an impediment for business success that need to be overcome (Khanna & Palepu, 1997; Khanna & Palepu, 2000; Khanna et al., 2005; Webb et al., 2010). Therefore, I join the growing literature that conceptualizes institutional voids as an opportunity (Mair & Marti, 2009; Onsongo, 2019; Tracey & Phillips, 2011), and demonstrate the real entrepreneurial potential that emerging markets unleash when companies position their offerings as solutions to institutional voids.

Furthermore, this dissertation transcends the current discussion on the institutional void versus support perspective in the social entrepreneurship literature in a number of ways (e.g., Beule et al., 2020; El Ebrashi & Darrag, 2017; Estrin et al., 2013; Stephan et al., 2015). While most existing studies on institutional voids versus institutional support use quantitative approaches on a country- or company-level (Beule et al., 2020; Stephan et al., 2015), the current dissertation is pragmatic and proposes concrete strategies that entrepreneurs can leverage to manage the ambiguous effect of institutional voids on their mission achievement. Thus, it moves beyond the either-or perspective by illustrating that both institutional effects can persist simultaneously. However, my findings join other studies (e.g., Torres & Augusto, 2020; Sydow et al., 2022) in leaning more towards the institutional voids perspective. I demonstrate that, given the size of the voids present in Africa, technology-driven entrepreneurship creates much more opportunity to scale solutions to these voids than non-technological approaches. Furthermore, as various studies in this dissertation suggest, technology also enables the more effective management of institutional

impediments. Thus, the dissertation brings the debate around institutional voids versus support, which hitherto primarily focused on social entrepreneurship, to the mainstream entrepreneurship literature. This conceptualization of institutional theory also makes it more compatible with the empirical reality of tremendous entrepreneurial growth that some emerging markets have experienced in recent decades (Estrin et al., 2018; Khanna, 2007).

My dissertation's regional focus on emerging markets, and Africa in particular, follows calls in the management literature to contribute to context-specific theory development (Filatotchev et al., 2022; Shirokova et al., 2022; Zahra et al., 2014). I do so in two ways. First, my findings evaluate the usefulness of institutional theory in explaining empirical reality in Africa. Second, institutional theory is also enhanced based on my context-specific empirical findings in Africa. By modifying and combining institutional theory with theoretical approaches like social capital theory (Khavul et al., 2009; Khayesi et al., 2014; Nyame-Asiamah et al., 2020) or post-colonial literature (Apata, 2019; Koddenbrock et al., 2022; Nothias, 2020), this dissertation enhances the explanatory power of institutional theory for emerging markets and particularly African settings. However, at the same time, these modifications allow the institutional voids concept to be more universally applicable. For instance, we show that institutional theory could be suitable to explain why investors' homophily preference (e.g., Hegde & Tumlinson, 2014) and therefore potential biases are reinforced under situations of institutional voids. There is a growing awareness that such institutional voids may not only exist in emerging markets. Markets in the Global North, like the US or Europe, exhibit a growing degree of institutional dysfunction and decay, as evidenced by the 2008 financial crisis and other upheavals (Anheier, 2014; Brady & Kent, 2022; Khanna, 2012; Prakash & Potoski, 2016). Hence, this approach may also be useful to explain instances of economic discrimination in more advanced markets, like the female

funding gap in VC markets (Guzman & Kacperczyk, 2019) or the underrepresentation of ethnic minorities (Calder-Wang et al., 2023).

Beyond institutional theory, my findings also have implications for the literature on entrepreneurial ecosystems (Audretsch et al., 2019; Cao & Shi, 2021). The evolutionary model of VC market development in Study 4 could also have implications for how entrepreneurial ecosystems in general evolve over time. Thus, I join a growing literature focusing on the evolutionary dynamics of entrepreneurial ecosystems (Cantner et al., 2021; Cho et al., 2022; Mack & Mayer, 2016). I argue that in an entrepreneurial ecosystem's early stages a lot of know-how is brought in from outside, for example, through foreign firms or diaspora entrepreneurs. As spin-offs occur, the concentration of locally founded startups will increase after a few 'generations'. This, in turn, will spawn local investors, as successful entrepreneurs often become business angels or VC investors later on.

This model could apply equally to entrepreneurial ecosystems globally, from Silicon Valley to Shenzhen. It may only be the fact that ecosystems in Africa are the most recent iteration of this development that allows us to gain these insights. Further, while earlier research on ecosystems mentions the importance of MNEs (Ryan et al., 2021) or transnational entrepreneurs (Harima et al., 2021), their role is only seldom considered. Therefore, we contribute to the literature by reflecting the consequences of a foreign-driven ecosystem inception on inequality in that region. For instance, a large number of Silicon Valley firms have foreign founders (Pekkala Kerr & Kerr, 2020), yet the effect on the region's ability to benefit from this activity differs from many regions of Africa. Thus, an ecosystem's ability to capture value from outside resources and know-how may ultimately depend on its position in the global power hierarchy.

In addition, through various studies in this dissertation, I follow calls for more configurational theoretical approaches (e.g., Fiss, 2011; Furnari et al., 2020; Misangyi &

Acharya, 2014). The practicability of this theoretical lens is supported by the frequent use of QCA which allows me to assess how various factors combine to explain an outcome (Greckhamer et al., 2018). This configurational approach improves my ability to conduct better context-specific theory development. Given the complexity of institutional settings in emerging markets, various theoretical streams are often necessary to explain a single phenomenon (Boso et al., 2023). For example, in Study 4, I integrate theories adjacent to institutional theory (e.g., social capital theory and signaling theory) to explain under which combination of conditions fintech startups in Africa are able to raise high funding amounts.

My use of QCA allows me to undergird these configurational theoretical deliberations with an appropriate method to explain this complex empirical context. On the one hand, this vindicates the usefulness of QCA as a method, especially for contexts with high degrees of complexity (Misangyi et al., 2017). On the other hand, these approaches are theoretically useful in a research field that is exposed to increasing criticism about the proliferation of a high number of untested theories which outstrip useful empirical settings that they can be tested on (Hambrick, 2007; Prasad, 2023). Therefore, this dissertation demonstrates the usefulness of configurational thinking and methodology in assessing how different theories interact and combine to explain a certain empirical phenomenon. This configurational approach could be used to counter the aforementioned criticism and aid in the development of more holistic metatheories in management and entrepreneurship (Robledo, 2014).

7.2 Empirical and Practical Implications

This dissertation makes a number of empirical contributions with important practical implications for business executives, entrepreneurs, investors and policy makers. Therefore, I seek to avoid falling into the habit of ‘empty’ theorizing that is increasingly criticized in contemporary management studies (Hambrick, 2007; Prasad, 2023; Tourish, 2020).

The studies in this dissertation cover the entire empirical breadth of the eclectic paradigm by Audretsch et al. (2015). By exploring mitigation strategies and effective interventions for MSMEs, I shed light on the largest segment of the entrepreneurial population in emerging markets (Jamali et al., 2017; World Bank, 2023). I also analyze high-growth, technology-driven startups and their financing activities through VC (Goedhuys & Sleuwaegen, 2010). This provides insights into what is frequently regarded as one of the most important levers for private sector development in emerging markets (McKenzie, 2017). Closely related, I investigate the entrepreneurial ecosystem by exploring strategies through which VC investors could succeed in emerging market settings (e.g., Ahlstrom & Bruton, 2006). My investigations on how social entrepreneurs pursue their mission in emerging market could facilitate their impact creation (El Ebrashi & Darrag, 2017). Correspondingly, I illustrate how more established firms can leverage social innovations to seize institutional opportunities (George et al., 2012). Thus, I expand knowledge about entrepreneurship as a holistic phenomenon by focusing on organizational status (MSMEs), entrepreneurial behavior (opportunity recognition by MNEs), and entrepreneurial performance (high-growth startups, social entrepreneurship, and VC).

I make a contribution by focusing on Africa as an empirical context, a region that is frequently neglected in management and entrepreneurship research (George, Corbishley et al., 2016; Kolk & Rivera-Santos, 2018). The continent has the fastest growing population in the world (OurWorldInData, 2022) and dynamic economic development (African Development Bank, 2023). Therefore, it is likely to become a crucial growth market for businesses globally (Leke et al., 2018). Since my findings shed light on how businesses and investors can succeed in Africa, they are highly relevant for the economic reality that many business in the 21st century face. For instance, informal MSMEs account for a significant share of employment and livelihoods in Africa (Medina et al., 2017). Thus, increasing their

productivity has large potential reverberations for sustainable development. My findings highlight possible interventions to this end.

Furthermore, high-growth firms are considered crucial for a fundamental transformation of the private sector on the continent (Goedhuys & Sleuwaegen, 2010). My findings illustrate how enterprises in Africa can leverage innovative technologies to achieve growth and how they can acquire the necessary financial means to scale. Correspondingly, the region becomes more attractive to global investors (Partech, 2023). Therefore, I lay out strategies that venture investors on the continent can use to mitigate institutional impediments and succeed, an aspect that has previously largely been ignored or only considered for Asia (Ahlstrom & Bruton, 2006).

I also investigate the challenges that doing business in Africa entails. For instance, I illustrate that markets for VC are still dominated by foreign LPs, potentially exposing local funds and startups to biases. In consequence, my findings suggest that African-led startups are facing disadvantages when raising funds. This contributes to the empirical discussion about investor homophily (Hegde & Tumlinson, 2014), extends the concept to emerging markets and reflects how it interacts with institutional power dynamics. For example, the role of DFIs in this process is critically reflected. I take on a balanced position between the afro-pessimism and the afro-optimism lenses that are frequently invoked in popular discourse about Africa (Adegbola et al., 2018; Nothias, 2014). Therefore, this dissertation offers insights that are relevant for poverty alleviation and sustainable development in what is still the poorest region globally. Hence, my empirical findings could contribute to solving grand challenges (Howard-Grenville, 2021).

Moreover, I contribute to the growing literature about the effects of fintech on firms in emerging markets (Abbasi et al., 2021; Chen et al., 2022). In particular, I contribute to the ongoing discussion about the effects of fintech such as mobile money on firm productivity.

Previous studies had uncovered partially contradictory effects of mobile money on firms (Gosavi, 2018; Islam, A. et al., 2018). Instead, my findings suggest that whether mobile money is associated with higher productivity depends on the configuration of firm characteristics, owner attributes and the business environment. Hence, I add nuance to the discussion about the effects of mobile money. While practitioners and researchers have hailed the benefits of mobile money in recent years, my findings indicate that mobile money is not a silver bullet. Especially for formal firms, policy maker still have to provide an improved business environment.

In addition, I add to the literature on technology adoption (Frost, 2020 ;Werth et al., 2023). Prior studies on mobile money adoption focus primarily on the country-level (Evans & Pirchio, 2014; Lashitew et al., 2019). Meanwhile, studies on the provider-level are scarce and often only consider isolated cases (e.g.; Onsongo, 2019; Suri, 2017). We contribute to this empirical discussion by demonstrating how providers interact with their institutional environment to achieve high adoption rates.

The findings throughout this dissertation allow me to make recommendations to various actors in emerging market entrepreneurial ecosystems. All studies demonstrate that policy makers should strive to ensure the necessary institutional framework for entrepreneurship to thrive. This also includes the provision of adequate infrastructure, education and funding. Enterprises should consider how their use of technology could either help them to exploit opportunities emanating from their institutional environment or help them deal with the latter. To access the necessary means to scale, they need to rely on associations with Western institutions to gain resources and credibility in the eyes of foreign investors. A similar behavior can be observed from African venture funds. Policy makers could reduce this reliance on foreign funding by establishing or encouraging indigenous venture investment vehicles. Foreign investors should re-evaluate whether their biases towards the African

market environment are accurate, as local teams may be better able to navigate the challenging local institutions. All actors need to put particular emphasis on business models that could create social impact while being commercially viable, as they may offer significant growth potential.

7.3 Methodological Contributions

The use of multimethod research is suitable in contexts “which are multidimensional and complex” (Wellman et al., 2023, p. 1007). This is clearly the case in emerging markets. Therefore, I use a combination of various primarily explorative methodological approaches throughout this dissertation. At the core lies the QCA method, which I employ in three of five studies. The QCA method has gained significant traction in the entrepreneurship literature (Berger, 2016). However, various limitations of QCA have been noted, for example, its sensitivity to calibration decisions, omitted variable bias, difficult interpretation, or inability to capture time (Fainshmidt et al., 2020a; Meuer & Fiss, 2020). Thus, QCA may not always be the most suitable method to gain the desired empirical insights.

In this dissertation, I evaluate the explanatory power of QCA relative to other methods through a three-pronged approach. In Study 1, I contrast QCA with a quantitative methodological approach. Study 2 is a standalone QCA. Finally, Study 4 contrasts QCA with a purely qualitative research approach. This holistic comparison and combination allows me to assess how QCA and other methods can complement each other. In Study 1, QCA is unable to isolate the net effect that mobile money has on firms’ labor productivity *ceteris paribus*. Thus, QCA alone would be unsuitable to resolve the ongoing debate in the literature. However, it offers some complementary insights that give more context to the findings. For example, it highlights some boundary conditions that seem important for firms to truly benefit from the productivity-enhancing potential of mobile money — insights that a net effect regression approach would be unsuitable to provide. Furthermore, while the

regression approach demonstrates that on average mobile money has no effect on productivity of formal firms, QCA reveals that a small fraction of formal firms can benefit. Equally, the regression findings revealed that women-led, informal firms are more likely to benefit from mobile money. Nevertheless, the QCA reveals that women-led firms fulfil more favorable conditions in order to receive the productivity boost from mobile money, compared to their male-led counterparts.

Overall, while QCA and regression analysis seem to point in the same direction along some dimensions (e.g., larger benefits for informal firms), QCA reveals some surprising nuance that the significant regression coefficient would not be able to. Therefore, QCA appears to be a suitable method for what Wellman et al. (2023) call a “test and explore” (p. 1009) approach, whereby an initial deductive method is used to test hypotheses and a secondary explorative one is used to deepen an understanding of the findings. In contrast, Study 4 uses an inductive qualitative approach to reveal elements that appear crucial for startups’ ability to attract VC funding. These elements are subsequently used as conditions in a QCA and applied to a much larger sample. This approach resembles “explore and test” (Wellman et al., 2023, p. 1009), although the QCA employed resembles more a rigorous application to a larger sample to support the purely qualitative hunches. However, it is well suited to reveal broader patterns of discrimination of African teams, beyond the anecdotal statements of my interviewees.

Hence, depending on the nature of the data and the sophistication of the related literature, QCA can both be suitable as a mainly explorative as well as a partly confirmatory approach (Meuer & Fiss, 2020). However, it is not a purely quantitative approach that allows us to make inferences about representative samples, as demonstrated by the contrast to regression analysis. Nevertheless, depending on the perspective one takes, QCA can reveal significant additional nuance to mainly quantitative or more generalizable empirical hunches for mainly

qualitative approaches. Study 2 is ideally suited for a standalone QCA. On the one hand, the literature is developed enough to isolate important explanatory conditions and suggest a configurational nature of the phenomenon. On the other hand, available sample sizes are too small to meaningfully apply statistical analysis. In such cases, QCA is a good middle of the road analysis, combining more in-depth cases analysis with larger-scale case comparison. These methodological deliberations could help researchers to assess which empirical and theoretical settings are most suitable for the use of QCA in entrepreneurship research and which method QCA could most effectively be combined with in such situations.

7.4 Limitations and Research Outlook

As all research projects, this dissertation has some limitations. First, the question arises how generalizable my findings are to Africa or emerging markets at large. Relative to the population, most of the samples used throughout this dissertation are small. Furthermore, bar Study 1, none of the samples are randomized and representative. This curtails my ability to make inferences about the underlying population of firms. However, I am transparent about this fact throughout the dissertation by consistently highlighting the explorative and qualitative nature of the studies. Nevertheless, I still believe that the findings offer insights that can be useful to increase our understanding about Africa and emerging markets, as the empirical deliberations are often well rooted in theory and the literature. Furthermore, for some of the investigated phenomena, a significant albeit non-randomized fraction of the population was considered. For example, in Study 2, we considered around 40% of all mobile money services at the time. Against this background, future, quantitative studies should strive to operationalize the more explorative findings presented in this dissertation to verify the proposed effects.

Another limitation arises from occasionally problematic data quality. Challenging data availability in emerging markets may force researchers to use data of suboptimal quality

(Kolk & Lenfant, 2010; Rivera-Santos et al., 2015). Some of the data in this dissertation are subject to limitation. In Studies 2 and 4, for instance, data quality and reliability can only be taken as rough estimates, as the data partly stems from various heterogeneous sources such as the press or other internet sources. Especially the estimates for the agent and subscriber numbers in Study 2 stem from various sources and differing, albeit close years. Thus, the data and consequently the findings only represent an approximation. Ideally future research would replicate these findings with actual survey data, which were not available at the time Study 2 was written, due to the commercial sensitivity of the data. Closely related, the measure for social and environmental value orientation of fintech startups in Study 4 only is a rough proxy. Phrases on firm websites may allow only very limited insights into founders' actual social and environmental values, let alone the startups' actual sustainability performance.

My use of QCA partly mitigates the aforementioned issues, as it is only a qualitative, explorative and not an inference statistical method. Data of this quality would likely be unsuitable to estimate effect strengths. However, QCA only needs reference anchors to categorize observations as high and low outcome. Therefore, some of the findings in this dissertation can only be taken as a rigorous, explanatory models for overall trends and developments of theoretical and empirical propositions, rather than claims for absolute causality. Study 1, which offers comparatively high data quality, also has a reliability issues, as it may suffer from endogeneity bias. In particular, it misses data that would allow me to determine causality by using an instrumental variable approach. Prior studies use the agent density as an instrument (Islam, A. et al., 2018), which is unavailable for my set of countries. I try to mitigate this through the use of robustness of inference to replacement (RiR) and Gaussian copulas (Park & Gupta, 2012). Nevertheless, future research should consider

replicating this study by using a instrumental variable approach, once respective data become available.

While I strive to be nuanced with respect to the specific context in which the investigated entities operate, I occasionally theoretically generalize when talking about Africa or emerging markets. An even more context-oriented investigation of the issues at hand would likely reveal significant institutional differences and therefore divergent viable strategies across the different markets covered in this dissertation. Closely related, in some cases concrete decisions remain a black-box and deeper insights into the psychological rational for specific decisions would offer even more theoretical understanding. This applies, for example, to the psychology behind social entrepreneurs' strategic decisions in Study 3, as some of the navigation approaches might be contingent on entrepreneurs' individual attributes. Correspondingly, in Study 1, a view on how MSMEs actually use mobile money would help to evaluate the theoretical propositions more effectively. Future research should strive to investigate these issues through the use of qualitative research approaches.

This dissertation is subject to limitations regarding temporality of the underlying data or the inability of the methods to capture time. Study 1 does not have panel but merely cross-sectional data, limiting our ability to fully explore the hypothesized relationships. Furthermore, as frequently criticized in the literature, QCA has only limited ability to explore time (Schneider & Wagemann, 2012). For example, in Study 2, some of the higher adoption rates may be driven by the fact that providers were early movers. In Study 4, we try to apply some proposed approaches from the literature to mitigate these problems (Edelman et al., 2021; Verweij & Vis, 2021). The findings show the benefit of an evolutionary approach. However, in some cases, the challenges are produced by the novelty of the investigated phenomenon. For example, Africa's VC market is still in its early stages. As many VC funds have 10 year time horizon (Ramsinghani, 2021), almost no Africa-focused

funds have yet been realized. Once this changes, future studies should compare the average performance of Africa-focused VC funds to other regions. This would allow an evaluation of whether many foreign LPs' views on VC in Africa are accurate.

7.5 Conclusion

This dissertation's ultimate goal is to investigate how enterprises and related actors in emerging markets navigate their institutional environment, by paying particular attention to how they leverage technology. The studies in this dissertation contribute to this goal. Study 1 illustrates how MSMEs can leverage fintech to better navigate their institutional environment and thereby increase their productivity. Study 2 demonstrates which strategies providers of inclusive fintech innovations can use to reach high adoption in emerging markets by interacting with their institutional environment. Study 3 investigates how social enterprises can navigate seemingly contradictory institutions to pursue their dual missions. Study 4 explores how fintech startups in Africa can attract VC and whether they are exposed to potential financial discrimination. Finally, Study 5 analyzes strategies that venture investors in Africa can use to react to institutional challenges.

Overall, the findings in this dissertation constitute a holistic perspective on the entrepreneurship concept as understood by Audretsch et al. (2015). My findings reflect a variety of different enterprises from informal MSME to large corporates and from social enterprises to innovative startups. By focusing on emerging markets in general and Africa in particular, this dissertation sheds light on frequently neglected contexts in entrepreneurship research. The dissertation also contributes to the literature on institutional theory in emerging markets by revealing that institutions in emerging markets have ambiguous effects on enterprises. Furthermore, the studies suggest a number of important recommendations for enterprises, investors and policy makers.

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Appendix

Appendix 1 – Research protocol: details on data construction, sources, and analysis

1. GSMA Mobile Money deployment tracker as starting point

See “MobileMoneyQCA-RawDatafile.xlsx” attached to this submission. The newest version of GSMA deployment tracker can be downloaded here: https://www.gsma.com/mobilefordevelopment/m4d-tracker/mobile-money-deployment-tracker/?utm_source=homepage&utm_medium=button

The GSMA mobile money deployment tracker is regularly updated and contains all mobile money services that are globally active and known to the GSMA. The database contains a number of relevant industry metrics for each mobile money deployment, including parent companies, the types of services they offer, and the country in which they are active. As of early 2019, 276 unique mobile money services were available in the database.

2. Obtaining estimates for user numbers to assess the adoption rate of each mobile money service

We contacted the GSMA, which conducts regular surveys among its members, to ask for the provision of service-level data. The request was declined due to the commercial sensitivity of the data. Thus, we conducted an internet search on each mobile money services from the GSMA deployment data to obtain the most recently available user numbers. First, we parsed the central bank or telecommunication authority websites of each country, as some countries such as Cote d’Ivoire, Kenya, and Benin²⁵ regularly publish such data of all their national providers. For countries where public data were not available, we checked the firm websites and/or annual reports. Additionally, in some instances industry we used research reports by development organizations like US Aid, the GIZ, or the World Bank, which collect data on the mobile money industry for some countries. If none of the aforementioned data were available, we used estimates from the business press. The attached raw data file contains all data sources and dates for user numbers. To further increase transparency, we saved the sources of subscriber numbers (websites and/or documents) as PDF files to keep a permanent record. They can be provided upon request. We calculated penetration rates to make the services internationally comparable by dividing absolute user numbers by the adult population in each service’s country (which we obtained from the most recently available United Nations Population Division data²⁶), a metric that is frequently used for comparable services such as mobile phone or internet coverage.

²⁵ See example for a telecom report from Benin: https://arcep.bj/wp-content/uploads/2019/12/Rapport-Annuel-2018_Final.pdf

²⁶ <https://population.un.org/wpp/>

3. Collecting the number of available mobile money agents

The same process was repeated to collect the most recently available agent numbers, although they were much more readily publicly available, as many services have a list of available agents on their websites. Sources and dates are included in the raw data file. To calculate the density, we considered agents relative to 100,000 inhabitants in each country. Analogous, the IMF and other organizations calculated ATM density as an indicator for the availability of traditional financial services in a country.

4. Qualitative assessment of parent organization characteristics (MNO and international group membership)

The GSMA mobile money deployment tracker also contains information on each services parent organizations. We used the Thomson Reuter's Eikon database to determine the organization's core business. Thus, it was relatively easy to qualitatively assess whether the provider is a mobile network operator, a bank, or a fintech firm (those were generally the three categories of providers).

The same process was repeated to make a qualitative assessment of whether providers were part of international groups or not. In many cases this was quite clear. Often country level providers were part of MTN, Vodacom, Etisalat, or other international telecom groups with services across various countries. In cases where it was less clear, we again used Thomson Reuter's Eikon to evaluate the ownership structure of the firm and assess whether international firms had a significant ownership stake or not.

5. Institutional factors from secondary datasets

We followed a common approach and used *ATM density* as a proxy condition for access to traditional financial services by referring to the IMF Financial Access Survey database (see here: <https://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C>)

The condition on the quality of mobile money regulation was taken from the GSMA's mobile money *regulatory index*. It ranges from 0 to 100 and incorporates a total of 27 indicators along six dimensions such as agent network regulation, KYC requirements, infrastructure, transaction limits, consumer protection, and authorization. (see here: <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/a-fresh-look-at-the-mobile-money-regulatory-index/#:~:text=In%202018%2C%20the%20GSMA%20launched,in%20establishing%20enabling%20regulatory%20environments> for a more detailed explanations of the index). We assigned each case with the regulatory index score of its respective country.

We extracted the condition on the quality of mobile infrastructure and consumer readiness from the publicly available GSMA Mobile Connectivity Index (see here: <https://www.mobileconnectivityindex.com/>). The Mobile Connectivity Index (MCI) captures the performance of 170 countries with respect to mobile internet connectivity along four dimensions and a few dozen indicators and assigns a score ranging between 0 and 100 to each country. We extracted

two dimensions from the MCI that serve as good proxies for education and quality of the mobile infrastructure and are therefore equally useful for mobile money service. The two dimensions are infrastructure (which include network coverage, performance, availability electricity, and the available mobile spectrum) and consumer readiness (which includes basic skills such as adult literacy, average years of schooling, gender equality, and mobile ownership). We then calculated a composite index (which we call mobile index) by equally weighing the scores for each of the two dimension. We assigned the score of the respective country to each case.

6. Data on scope of service offerings (use cases of each service)

The GSMA deployment database contains information on the scope of service offering (use cases) that each service provides. This includes whether the services allow more than just P2P transfer, for example, bill payments, merchant payment, international remittances, cash-in cash-out, or bulk disbursements by organizations to multiple parties (e.g. salary payments by firms). We complemented the GSMA data by looking up the websites for each service (which generally contain information on all available use cases). Thus, we complemented the GSMA data with information on whether the service allowed online payments, included interest-bearing savings products, micro-insurance products, or allowed to take on micro-loans (column T to W in the raw data file). Based on the assumptions that more sophisticated services allow users to bridge more institutional voids in the financial system, we manually assigned a QCA membership score between 0 and 1 to each case based on the scope of its service offering. The following coding scheme served as an orientation for assigning the scores:

0 = Most basic functions of mobile money (traditional use case) = P2P, cash-in, cash-out, and airtime top-up solve the most basic market problem, i.e. high transaction cost associated with transferring cash (e.g., crime etc.)

0.1 = International remittances allowing an international transfer of funds

0.2 = Bulk disbursements from government and firms to individuals = allowing an even more efficient transfer of money

0.4 = Merchant payment + bill payments, allowing the mobile money provider to create a market ecosystem on their platform

0.8 = Online payment allows an even more sophisticated way of bringing buyer and seller together, by markedly increasing market size, especially in a developing country context; also QR payments and other technologically sophisticated payment methods

1 = Creating use cases that help underpinning the creation of a veritable capital market allocating funds from savers to borrowers, and helping customers to buy securities such as insurance products

This assignment is not purely quantitative but rather qualitative yet transparent, as is encouraged in QCA studies. The reason, for instance, for the smaller distances between P2P services, international remittances, and bulk disbursements is that we estimate the qualitative jump from one

service offering to the next to be much lower than the jump from merchant payment to online payments. While merchant payments may increase the convenience for both customers and firms, online payment capability may actually contribute to the creation of veritable market supporting institutions, as firms and customers can drastically increase their available market size.

7. Qualitative Comparative Analysis

The aforementioned data was available for 110 unique mobile money services used for the QCA. We provide the data file that we used to perform the QCA (“QCAmomodata.csv”) with the submission. The QCA underwent various iterations, as is customary in QCA studies of an explorative nature. For example, we started out with a higher number of conditions. However, eight to ten conditions are commonly viewed as the absolute maximum degree of complexity a QCA can meaningfully handle, as results beyond that become very difficult to interpret. We subsequently iteratively lowered the number of conditions to arrive at the seven most important ones. We estimate that the final model represents an ideal balance between doing justice to the complexity of the underlying phenomenon while maintaining a level of abstraction that allows to uncover insights that go beyond idiosyncrasies of the individual cases. We also used different indicators for the various conditions and ended up taking the ones that we assessed as being most fitting. For instance, we initially used the fraction of the population which has a bank account as a proxy for the development of the financial service industry in each country. However, we settled on ATM density as a more appropriate proxy, as in some countries the fraction of people with a bank account is high but they are essentially useless, because of low availability of bank branches and ATMs in rural areas. Furthermore, we dropped some deviant cases, as is usual in QCA (Duşa, 2019; Greckhamer et al., 2018; Schneider & Wagemann, 2012). For example, we excluded the mobile money service “WOW!” from Indonesia. It was the only mobile money service in the “Fintech” configuration that exhibited a low adoption rate and therefore skewed the consistency score of the configuration downward, although still above the 0.8 threshold, while all other services in the configuration achieved high adoption rates.

Appendix 2 – Details on conditions and outcomes

Condition (outcome)	Explanation	Measure	Data sources
Penetration Rate (outcome)	Percentage of a mobile money service’s country of operation’s adult population (> 15 years) that has an account with the respective mobile money service.	PEN_{ij} = $\frac{\text{Absolute no. of users of service } i}{\text{Adult population in country } j}$	-Firm websites -Central banks -Telecom authorities -Third parties -United Nations
MNO	Indicates whether a service is a mobile network operator.	= 1 If parent firm is MNO =0 if parent firm is bank or fintech	-GSMA mobile

			deployment tracker -Thomson Reuter's EIKON database
International group	Indicates whether a service is part of an international group, i.e. whether an international group has a controlling ownership stake in its parent company.	= 1 if part of an international group = 0 if not part of an international group	-GSMA mobile deployment tracker -Thomson Reuter's EIKON database
Regulatory index	Index score for over 90 countries based on how enabling their mobile money regulation is. Considers six regulatory dimensions: ease of authorization, consumer protection, transaction limits, know-your-customer requirements, agent network, and infrastructure. The dimensions consist of a total of 27 indicators. The dimensions are weighted according to the importance for mobile money as estimated by the GSMA.	0 to 100, 100 indicating the most favorable mobile money regulation	-GSMA Regulatory Index
Mobile index	A composite index that reflects the quality of the mobile network infrastructure and consumer readiness (e.g. education) in each country. The index is constructed by extracting the infrastructure and consumer readiness dimensions (which consist of 24 indicators) from the GSMA's Mobile Connectivity Index. Both dimensions are equally weighted to calculate the new mobile index.	0 to 100, 100 indicating the most favorable mobile mobile market conditions.	GSMA Mobile Connectivity Index
ATM density	Amount of ATMs available per 100,000 inhabitants in each country, as a proxy for the quality of the financial service sector.	$ATMdens_j = \frac{\text{Total no. of ATMs in country } j}{\text{Adult population of country } j} \times 100,000$	-IMF Financial Access database
Agent density	Number of mobile money agents of each service available per 100,000 inhabitants of the service's respective country of operation.	$Agentdens_{ij} = \frac{\text{Total no. of agents of service } i}{\text{Adult population of country } j} \times 100,00$	-Firm websites -Central banks -Telecom authorities -Third parties -United Nations

Service scope	Qualitative assignment of QCA membership scores based on the breadth of each service's offering and their ability to span institutional voids in their respective target market.	<i>0 = basic functions of mobile money (i.e., P2P, airtime top-up)</i> <i>0.1 = international remittances</i> <i>0.2 = bulk disbursements</i> <i>0.4 = merchant payments and bill payments</i> <i>0.8 = online payments, QR and NFC payments</i> <i>1 = savings and investment products, loans, insurance products</i>	-GSMA deployment tracker -Firm websites
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Appendix 3 – Exemplary illustration of archival sources

Perception of institution	Country	Year	Type of source	Catalyst / impediment (if applicable)	Quote	Source (Link)	Accessed on
informal catalyst(s)	Kenya	2021	Online article	Partnerships to start and grow	The partnership will boost African data science graduates' employment prospects through a fully funded, three-month fellowship program. The fellows will be equipped with technical and soft skills to prepare them for the international job market.	http://africasciencenews.org/new-partnership-to-connect-african-data-science-graduates-to-international-opportunities/	04.08.2021
informal catalyst(s)	Kenya	2021	Online article	Ban of plastic	Additionally, countries with plastic pacts, including the UK, US, Canada, France, Chile, South Africa, Portugal and the Netherlands, are increasing job creation in the collection, sorting, recycling and manufacturing sectors, spurring action and boosting foreign investments among other milestones.	https://www.businessdailyafrica.com/bd/opinion-analysis/ideas-debate/a-new-plastics-kenya-contain-pollution-3351734	04.08.2021
informal catalyst(s)	Rwanda	2021	Online article	role of hubs/accelerators ; awareness creation	The support from QCT helps us in our daily operations of our programme, including the access to online platforms that we use to deliver the programme.	https://www.newtimes.co.rw/featured/queens-commonwealth-grantee-inspires-youth-upskill-development	28.07.2021
informal catalyst(s)	Rwanda	2021	Online article	coaching and business development programme	Norrskan Foundation will offer different help to entrepreneurs, including providing infrastructure in the form of world-class working space, capital and connecting them to famous foreign entrepreneurs who achieved big things to mentor local entrepreneurs.	https://www.newtimes.co.rw/business/new-entrepreneurship-hub-fund-start-ups-rwanda	28.07.2021
formal catalyst(s)	Kenya	2020	Online article	support by local government, churches etc	The coronavirus messaging was so westernised; it did not work for people who live in informal settlements. We needed a radically different approach. Information had to come from people they trust, either religious leaders or local people on the ground. That is how we managed to contain the virus Read more:	https://www.tuko.co.ke/397605-kennedy-odede-kenyan-feeding-educating-slum-dwellers-awarded-hsc.html	05.08.2021

					https://www.tuko.co.ke/397605-kennedy-odede-kenyan-feeding-educating-slum-dwellers-awarded-hsc.html		
formal catalyst(s)	Kenya	2020	Online article	International event called 'Commonwealth Youth Awards' that recognizes and promotes social entrepreneurs	Elizabeth Wanjiru Wathuti is the founder of the 'Green Generation Initiative' which focuses on promoting environmental education and food security in schools, particularly by encouraging a tree growing culture and through its 'adopt a tree' campaign.	https://www.the-star.co.ke/news/2020-02-19-kenyan-elizabeth-wathuti-among-commonwealth-youth-awards-finalists/	25.08.2021
formal catalyst(s)	Rwanda	2021	Online article	government and NGO support to start business	The company has been able to develop through the support of government institutions, and Non-governmental organizations.	https://www.newtimes.co.rw/business/agri-prenuers-introducing-urban-farming-and-agriculture-tourism	28.07.2021
formal catalyst(s)	Rwanda	2021	Online article	government support for females in tech	However, for Rwanda, there's a lot to celebrate. There's a number of women entrepreneurs who are behind the start-up ecosystem in the tech industry.	https://www.newtimes.co.rw/opinions/editorial-global-tech-gender-gap-wide-thats-just-part-problem	28.07.2021
formal & informal catalyst(s)	Kenya	2017	Online article	local contextualized platforms are needed to spur social entrepreneurship, instead of copied models from the West	Imagine a collaborative platform for urban innovation that brings together urban leaders, academia, the technology hubs, business leaders, young entrepreneurs and civil society. Such a platform would identify a set of priority urban challenges and design solutions.	https://www.the-star.co.ke/opinion/columnists/2017-03-27-young-innovators-key-to-prosperity/	25.08.2021
formal & informal catalyst(s)	Kenya	2016	Online article	encourage and promote effective public, public-private and civil society partnerships aimed at creating an inclusive, employment-creating and sustainable growth strategy geared towards addressing the special needs of the youth.	They are creating cutting-edge mobile technologies to solve African problems in communities closest to them. Young people in Kenya and on the continent at large are more upbeat about their ability to become entrepreneurs than their peers in any other region and therefore the need for us as private sector players and investors to either make access to finance for startups easy or offer mentorship programmes that support their business growth.	https://www.theeastafrican.co.ke/tea/oped/comment/private-sector-continues-to-play-an-integral-part-in-job-creation--1349160	09.08.2021
informal impediment (s)	Kenya	2021	Online article	'technophobia', missing skills to use technology, esp. For women		https://businesstoday.co.ke/fear-of-technology-costing-women-entrepreneurs-profits-wandia-gichuru/	05.08.2021
informal impediment (s)	Kenya	2020	Online article	missing support of government and NGOs to foster social entrepreneurship	Market-based business models can address some of the issues of health care delivery and ease the burden on the public sector. However, government and philanthropy need to focus on providing the proper support for social enterprise to thrive.	https://www.businessdailyafrica.com/bd/opinion-analysis/columnists/why-social-enterprise-could-be-the-cure-for-ailing-medical-sector-2282062	04.08.2021

informal impediment (s)	Rwanda	2020	Online article	role of women in society	Giving women decision making power within the household and the community will allow them to have access to economic opportunities	http://www.rnnews.com/vulnerable-to-risks-vital-to-recovery-the-reason-why-fao-and-un-women-are-investing-in-rural-women-to-achieve-sustainable-development-in-africa/	28.07.2021
informal impediment (s)	Rwanda	2020	Online article	role of women in society	They also contend with gender-based social expectation, resistance to women in leadership roles and lack of a support network. The fund will empower Africa's women by giving them access to financial resources and investment management expertise.	http://www.rnnews.com/africas-female-fund-managers-to-receive-major-boost-through-launch-of-a-multi-million-dollar-fund/	04.08.2021
examples of necessity-driven social entrepreneurship and other	Kenya	2021	Online article	n/a	Njoki was inclined towards social justice, which earned her the Phoenix Award for her significant contribution to the City of Atlanta, USA in 1999. Karjee Industries, established in 2014, produces affordable regular and maternity pads.	https://www.theeastafican.co.ke/tea/magazine/exec-turned-menses-rights-activist-3465424	09.08.2021
examples of necessity-driven social entrepreneurship and other	Kenya	2020	Online article	n/a	Africa Enterprise Challenge Fund (AECF) is a development finance organisation that supports businesses to innovate, create jobs and leverage investments to create resilience and sustainable incomes in rural and marginalised communities in Africa.	https://www.theeastafican.co.ke/tea/news/east-africa/jobs-for-refugees-and-host-communities-3224714	09.08.2021
examples of necessity-driven social entrepreneurship and other	Rwanda	2021	Online article	n/a	new entrepreneurship hub in Kigali	https://www.newtimes.co.rw/business/new-entrepreneurship-hub-fund-start-ups-rwanda	28.07.2021
examples of necessity-driven social entrepreneurship and other	Rwanda	2021	Online article	n/a	Byiringiro is a co-founder of BuniTek, a student-led social enterprise that introduces young people in Africa to new technology through interactive activities. Together with other computer science and technology scholars from Africa, he inspires young people from other African countries to come into technology.	https://www.theeastafican.co.ke/tea/magazine/rwandan-wins-rhodes-scholarship-3321386	09.08.2021

Appendix 4 – Exemplary evidence for navigation approaches

Navigation approach	Mechanism	Exemplary cases (including quotations)
Adaptation-as-necessary-evil	Organizational adjustments to stakeholder & market demands → Weakening institutional conflicts	Social entrepreneur #14: “We discovered that some of the group members could not read or write; so, we first stopped learning how to use the sewing machines and decided to first teach our fellow members how to read and write so that we could all join the sewing course together.” Archival data case 88: “Like many bright-eyed medical students, [the social entrepreneur] joined medical school with the hopes of specialising in a clinical field. But instead, as she was introduced to the health care system, she found the scope of healthcare was vast. She thus ventured into health communication, in the hopes that she could bridge the gap that seemed to exist between the system—doctors, policy makers, administrators, and consumers—the patient, the community. [...] ‘I quickly learned that communication was a tool. [...] Healthcare has not been understood to be a public good with the same primary significance as good laws, good roads and public security. In my view, public health care is more important and even more fundamental than free education,’ Diana said.”
Adaptation-as-accelerator	Signaling conformity and actions of compliance with institutions → Collaborative work	Social entrepreneur #28: “What the accelerators have done, for example, for us in our company is just expose it to resources that you can tap into, whether these resources are manpower or they're financial exposure to investors. [...] they coached us on finances and investor readiness, how to prepare your company structure, [and] company documentation. It was intense, but at least, for us, it helped us elevate our weakest side.” Social entrepreneur #28: “I have mentors and also advisers, so a few industrial designers because I need them in the sort of production. [...] I have a few guys who have started successful startups in Kenya, and they advise me also on such items, and also on finance because that is our weakest point. We are so passionate about this social and environmental, we are not very aware of our finances. So, we needed a lot of input.”
Interwoven circumvention	Developing alternatives to or bypassing of an institutional status quo → Weakening institutional conflicts	Social entrepreneur #25: “[organizations] always had an issue with the talent deficit. So, organizations want to develop their talent, but usually the human resource is the problem. The cost of upskilling employees is a big hindrance. [...] One of the things that these business owners were always saying is, we have work, but we don't have people with the requisite skills to actually deliver effectively. [...] Particularly when we talk about soft skills.” Archival data case 71: “Women and girls collect most of the firewood, spending an average of 2.1 hours per day on the task. [...] This is time that could be spent on education and income-earning activities, costing sub-Saharan African economies as much as \$29.6 billion per year, the World Bank estimates. [...] Electricity access can thus be transformative for women but the

		<p>links between energy access and gender equality and the role that women can play as agents of change in the transition to sustainable energy are sometimes overlooked. [...] Women are not only the end-users of these technologies—they are also key players in the success of any enterprise that develops and markets them. Women are best positioned to tell designers what they want and need, so the resulting products are desirable to consumers and seen as worth the cost. [...] Close to their customers, women entrepreneurs have the potential to lower customer acquisition and servicing costs; they can also operate distribution networks and microfinance schemes.”</p> <p>Social entrepreneur #15: Despite “in some places husbands were not flexible to allow their woman [to work], because it was the first time they’ve seen women leaving houses,” this social entrepreneur has overcome the hurdle of mistrust by starting small with a bottom-up approach that relied on grassroots leaders who specifically recruited “the poorest of the poor” and those “women whose husbands committed genocide”. Such families’ apparent lack of alternatives for survival and limited access to sincere work, weakened men’s dismissive attitude toward working women.</p>
Distinct circumvention	<p>Developing alternatives to or bypassing of an institutional status quo</p> <p>→ Despair of the institutional environment</p>	<p>Social entrepreneur #28: “If a building material doesn’t sound like concrete or a building block, it’s very hard for people to accept it. In Kenya in particular people only believe in something they can touch and feel; people believe in something called the knock test.”</p> <p>Social entrepreneur #29: “Until you actually show them the value for it, they won’t change—which is a big challenge. So that’s why we’re trying to reach as many as we can [...] Imagine a small-scale farmer is using [the smartphone], and then the first thing they open the application, they need to pay this, too. They won’t use this. This is my country. You know my people. They will not [use it].”</p>

Appendix 5 – Interview guide investors

General Investment Structures
<ol style="list-style-type: none"> Please start by telling us about [name of investment firm/fund] Please share the following information about your firm: <ol style="list-style-type: none"> Assets under management? What kind of companies do you invest in? (sector, geography, stage) Do you have a dedicated Africa-specific fund or is it a fund with a global mandate? Your firm’s investment approach/thesis? Is there a regional focus, what role does Africa play in your portfolio? → Why? Where do you see opportunities of investing in African companies?
Personal Characteristics
<ol style="list-style-type: none"> What is your own role in [name of investment firm/fund]? <ol style="list-style-type: none"> What does your job consist of?

b. What [experience; origin; education; personal relation to Africa] do you have?
Fundraising process
4. Please tell us about the fundraising process? <ul style="list-style-type: none"> a. How does it differ from raising funds in other regions? 5. What kind of LPs does the fund have? 6. How is the relationship with your LPs? 7. How is the relationship among your LPs?
Investment Process
<i>[if appropriate: ask for specific examples!]</i>
8. Please describe your deal sourcing and target selection process? <ul style="list-style-type: none"> a. In how far does this approach differ in the context of African companies? (compared to other regions) 9. Which selection criteria do you perceive as particularly important when selecting African companies and why? <ul style="list-style-type: none"> a. In how far does the headquarter location of the company play a role, why? → entrepreneurial ecosystems b. In how far does the market size play a role, why? → size of target market c. In how far does the background of the founder/founding team play a role, why? → experience and education of founder/founding team d. In how far do sustainability aspects play a role, why? → Social and environmental value orientation e. Which aspects about your investment targets' business model are crucial? Why? f. What sectors do you view as particularly promising? 10. In your view, what strategies are crucial for successfully investing in Africa? 11. Have you already exited an investment? What did that process look like? <ul style="list-style-type: none"> a. How do exit opportunities and strategies differ in Africa, compared to other markets? (what does the typical exit in Africa look like?) 12. From your experience, what are the main challenges of investing in African companies? 13. How do you deal with those challenges? (describe the process) 14. Are there any signals (red flags) that would certainly hold you back from investing in an African startup? Why? 15. Please describe your relationship (post investment) with the companies you have invested in (in the African context)? <ul style="list-style-type: none"> a. Do you offer any value added services? b. How do you monitor them? c. Do you take on a specific role, e.g. as a board member? d. Is that different in Africa compared to other continents? 16. Do you co-invest with your LPs or with any other funds? What is the relationship with your co-investors like?
Sustainability aspects in investment decisions
<i>[circling back to the question about sustainability aspects]</i>

17. How would you describe the role of social and environmental impact in your investment decisions, especially in the African context? Does it differ from other contexts?
Investors' perception of the African context <i>[circling back to the questions about opportunities and challenges of investing in African companies]</i>
18. How do you perceive Africa as a market environment, in general? 19. How risky do you perceive investments in Africa compared to other regions? Why? 20. From your experience, what characteristics are typical for African entrepreneurs? a. In how far do they have different characteristics than Non-African entrepreneurs? b. In how far do these characteristics play a role in your investment decisions? 21. If you think about the finance sector in general: in your experience, in how far are other investors or LPs influenced by prejudices about the African market? a. What kind of prejudices have you observed/experienced? 22. How do you think Africa will develop going forward? 23. How will the current monetary policy tightening of central banks in advanced economies affect Africa's VC market?

Appendix 6 – Interview guide entrepreneurs

Personal Characteristics
1. Please tell us about yourself. a. What is your own role in [name of company]? b. Education, previous (work) experience, background/origin and experiences abroad?
General Startup Information
2. Please tell us about [name of company]. a. How does your main business model work? b. The role of technology, main markets (why did you choose this market?), how many employees? c. In how far do you achieve social and ecological improvements with your business? 3. You founded [company] in [year]. Can you please tell us how your company evolved from its founding until now?
Funding
4. Can you please tell us about the funding you receive? a. Which sources of funding do you have, which is the most important one? b. How did your funding evolve from the startups inception to now? Tell us about your funding journey. c. How would you evaluate the funding amount you received [low/high/moderate]? Does it allow you to achieve your growth objects?

<ol style="list-style-type: none"> 5. What did you do to attract your current investors? <ol style="list-style-type: none"> a. Was there a concrete strategy that you followed to make your company attractive for investors? b. In how far did you have any previous connections to your main investors? c. In your view which aspects of your business were particularly crucial for your investors/what made you an attractive investment target? 6. When you think about the funding process: What were your main challenges in the funding process and why? <ol style="list-style-type: none"> a. In how far did your personal background play a role? b. In how far did the concrete location of the company play a role c. In how far did the market size play a role d. In how far do sustainability aspects play a role 7. How would you describe the relationship with your investors? <ol style="list-style-type: none"> a. Tell us about the background of your investors? → Africans/internationals b. Do they provide services other than funding, if yes, what exactly? c. How do these services add value to your business? d. Who are your main communication partners at your current investor? 8. How would you describe the challenges in your current relationship with your investors? 9. In your view, in what way, does your business being active in Africa affect the funding process? 10. In your experience, in how far do African investors differ from non-African investors? <ol style="list-style-type: none"> a. In how far are the ways of attracting them different? b. In how far do the role of location, market size, founder background and social/environmental value orientation differ for African vs. non-African investors? c. How does your relationship with African investors differ from that with non-African investors?
Perception of African context
<ol style="list-style-type: none"> 11. How do you perceive the African market environment in general? <ol style="list-style-type: none"> a. Opportunities for startups like yours? b. Access to (financial) resources? 12. In your view, how do international investors/market actors perceive the Africa?

Appendix 7 – Interviewee sample

No.	Interviewee	Investor type	Firm description	AUM (US\$)
1	Investment analyst	Local VC firm	West African micro VC fund manager	5-10 million
2	Head of communications	Local VC firm	West African pre-seed and seed tech fund manager	50-100 million
3	Director	Local VC firm	Southern African fintech-focused fund manager	-
4	General partner	Local VC firm	North African micro VC focused on pre-seed tech startups	5-10 million
5	General partner	Local VC firm	Southern African Series A VC investor	50-100 million

6	General partner	Local VC firm	West African VC focusing on pre-seed to Series A technology investments	25-50 million
7	Managing director	Local growth fund	East African growth fund with a primary focus on agribusiness related SMEs	5-10 million
8	General partner	International VC firm	East Asian VC focusing on growing technology businesses in Africa	10-50 million
9	Investment associate	Impact investor	European impact-oriented investment firm focusing on innovative solutions	>1 billion
10	General Partner	International VC firm	European early-stage VC focusing on blockchain startups	1-5 million
11	Partner	International VC firm	Major South Asian early-stage, technology-focused VC investor	50-100 million
12	Partner	International VC firm	European-American early stage VC	100-500 million
13	Founder & CEO	International VC firm	European advisory and VC firm investing in disruptive technologies	-
14	General partner	International VC firm	American Africa-focused VC for cleantech and fintech startups	50-100 million
15	Chairperson	International VC firm	Africa-focused, early-stage VC with US GPs	10-50 million
16	Investment officer	International VC firm	European Africa-focused VC focusing on Series A	-
17	Investment manager	International investor	Major European development finance institution focusing on VC/PE investments in emerging markets	>1 billion
18	Vice president	International investor	Africa-focused European development finance institution focusing on VC/PE	100-500 million
19	Chief investment officer	International investor	Development finance affiliated fund of funds investing in financial services companies in Africa	100-500 million
20	Fund manager	International investor	Development finance affiliated fund investing in green energy across Africa	100-500 million
21	Director	International investor	European corporate VC fund of funds investing in emerging markets	10-50 million
22	Manager	Accelerator	US accelerator and pre-seed fund for emerging market tech startups	10-50 million
23	Investment Manager	Accelerator	European venture accelerator and seed stage VC firm	10-50 million
24	Analyst	Accelerator	European venture accelerator and seed stage VC firm	10-50 million
25	Portfolio analyst	Accelerator	East African accelerator and seed stage investor	<1 million
26	Founding partner	Accelerator	East African transaction advisor and early stage investor	<1 million
27	Angel investor	Angel investor	West African angel investor co-investing with and advising foreign VCs	-
28	CEO and Co-founder	Fintech	Inclusive financial service provider from Western Africa	-
29	CEO and Co-founder	Fintech	Insurance technology provider from Southern Africa	-
30	CEO and Co-founder	Fintech	Agricultural fintech provider from Western Africa	-
31	CEO and Co-founder	Fintech	Technological payment facilitator from Northern Africa	-
32	CEO and Co-founder	Fintech	E-commerce and payment platform from Eastern Africa	-
33	Managing Director and board member	Fintech	One of the largest African fintech providers for mobile money interoperability	-
34	CEO and Co-founder	Logistics	Tech company enabling smooth cross-border trade processes in West Africa	-
35	COO and Co-Founder	Fintech	Tech provider of asset management solutions for retail clients	-
36	CEO and Co-founder	Fintech	Crypto platform for renewable energy in Southern Africa	-
37	CEO and Co-founder	Fintech	Technology startup that helps businesses automate sales and payments	-

Appendix 8 – Exemplary proof quotes chapter 5

	First-order codes, <i>second-order themes</i> , exemplary quotes
Aggregate dimension; Business environment	Ecosystem <i>Network connections in local ecosystems enables fundraising</i> <i>And then I called a friend [from a larger startup], who then basically said just can you get...can you have another look? And they had another look. And then were interested enough [...] I can remember how I got into...got engaged directly, but they didn't really take it take it seriously at all. Until such time as basically a one of their network gave or kind of a warm recommendation. (29)</i> <i>So that doesn't work. I mean, we're able to raise money, you know, ways. That's why you get to Lagos is just to build better networks. Because all these startup events, they all Lagos. So what we do is we fly to Lagos more clearly to kind of have meeting connects with the ecosystem. (28)</i> <i>Unique combinations of ecosystem elements create opportunities</i> <i>Kenya is a little bit of the specific case in the sense that there is one very important innovation catalyzer that took place in Kenya back in 2007, and that's M-Pesa. So, you have your fintech rails that they've been there for 13 years now that have allowed, you know, a lot more innovation to come. That's one of the reasons. And then obviously there is a number of other regulatory and ecosystem reasons that facilitate that. It's a fairly unique mix. The other thing I would like to mention there is that, especially in the case of South Africa and Egypt, you also have a lot of strong universities locally that have allowed local founders to emerge. And it's quite interesting to see that most of the funding in these markets goes to funders from these universities which is not necessarily the case in these two markets. And the third element is local investors and that we're seeing a lot in Nigeria, we're seeing that as well in Egypt and South Africa like so should take the example of Egypt. Most of the startups that get funding are started by local funders, backed by local angel investors and sometimes backed by local VCs. And so that's really what allows this ecosystem to fast track (22)</i> <i>So Nigeria and Egypt, the valuations tend to be bigger in those markets are obviously big domestic markets, high concentration of tech talent, big diaspora, you know, supporting the investments. (15)</i> <i>VCs contribute to ecosystem development</i> <i>...we started off as an accelerator. All of that has created goodwill. We have spawned-off a nonprofit foundation that does a lot of work in the ecosystem. And that, that continues to be that continues to prove beneficial for us. So we speak at events, we volunteer, we are part of the ecosystem. So were active.(6)</i> <i>We want to build the whole value chain. We have to find the people and build them up at the beginning when they are very young and just starting out, that's the [Seed] Accelerator and [Seed Fund]. Then we can invest in Series A and only for the very best we can invest in Series B... (5)</i> <i>VCs use local ecosystems to source deals</i> <i>We do a lot of entrepreneur showcase events. [...] But as I said, it's also open-source event. It's not just it doesn't only get access to deals to start, it also gets access of deals to other investors as well. So, you know, any investor who attends has access to the same needs. That's true. And thirdly, obviously, like we make sure we try to build team locally as much as possible. Right. For Africa. The other know we have a three-member team actually sitting in Nairobi, [names of employees] that are local. So, you know, they have their own local and they bring their own network. (11)</i>

	<p>We just did a co-investment last week actually together with an angel community here. And of course, we also have teams that come directly to us. And since we've now had 152 founders actually going through the program, it's a lot of referrals based. Yeah, we're founders nominate other founders, which is really nice. So yeah. So, I guess we're getting the cases from different places, primarily referrals either from VCs, Angel Networks, or our founders. And then of course, the primary weight is on the team and the ability of the team to, to yeah. To make stuff happen interesting actually. (13)</p> <p>Well, because I've been at it forever, okay. I have relationships across entrepreneurship universities across the continent. So the students coming out of those universities and going into innovation hubs to start their companies, we have, you know, one site off on an annual basis. [...] So we are privileged that we've been there from when the ecosystem started (27)</p>
	<p>Market size</p>
	<p><i>African markets are small in international terms</i></p> <p>I mean, on the other hand, you always have to keep in mind, all of Africa has a smaller GDP than France. And then, if you also subtract oil and gas and mining, then you know what we are talking about. That's absolutely minor and irrelevant for really big investors. (18)</p> <p>If you actually look at Africa after the taking out and I would keep saying Africa, I should say sub-Saharan Africa, but in South Africa. So, from sub-Saharan Africa, you take out Nigeria, you take out Kenya, right? The market size is very small. Ethiopia has a relatively larger economy, but on a per capita basis is much smaller. It's less than 1,000 dollars. So, the market sizes are much smaller. It's very difficult to scale funds. (11)</p> <p><i>International expansion to compensate for small market size</i></p> <p>We considered Mali as a testing ground to then go into bigger markets. If the guy told us, hey, Mali is my final stay would say, look, I think I don't know the population of Mali, but I would think it's 15 million people or maybe more, maybe less. Actually, I should probably know Mali population 20 million. But yeah, it's too small. (12)</p> <p>Deliver that big market. Then use that capital and positive cash flow that you generate to expand. (14)</p> <p><i>Market size is important for scalability and VC returns</i></p> <p>...the reason I moved to Fintech is all my companies are now in multiple markets, so start in one and but are now in seven. My last investment is launching in eight countries at once. So FinTech can scale okay, but I needed you to start in Nigeria, Kenya, Egypt first? I'm not going to go to Chad. Start in a big market, demonstrate you can do this. Deliver that big market. Then use that capital and positive cash flow that you generate to expand (14)</p> <p>We really look for mass market solutions. Yeah. So that's in terms of profile then in terms of market, we look at least a billion-dollar market across the continents. What's important in an African context I think is to, is that each geography, each country per se, except Nigeria, but otherwise each country per se, it's difficult to find billion-dollar market in one specific country. (9)</p> <p>So, market size is really important for us because it kind of mirrors how large the opportunity is and the revenue. You're able to generate returns for us as well. (2)</p> <p><i>Investors carefully consider true market size</i></p> <p>I also think there's like a, like an incorrect assumption that people make when they look at market size. They think of population. That's really crazy. Because that's not how it works in emerging markets. In the US, maybe you can say, okay, like, there's 300 million people. And so we're building</p>

	<p><i>this app, and our services, like our market is like these 300 million people, because anybody can use it. And it's Instagram, or something like Instagram, you can make that argument, right. But in Africa, there's always qualifiers. Okay, fine. There's 200 million people in Nigeria, but like, how many of them have access to a smartphone? If you're building an app? Right, that cuts the population down significantly? And how much can they actually spend from [...] their earnings on average? Can they actually spend on that? That's your, your market size significantly as well. So I think that that like, Yeah, I think that when people are like, Yeah, you know, much larger market, 200 million people like, okay, but like, you know, that's not that's not enough in emerging market, you can't use that as a as like a paragon for market size. (16).</i></p> <p><i>Well, you can think about the small markets, but at the end of the day, if you're looking at a very young population, there's no better place than Africa. Like 50% of the population, I think, is below 25 years old. So, I think you will not see this in any other place in the world. So, for sure, you have a small market. But I think this is also debatable, because if you look at markets, if you look at the results sent by the IMF or the World Bank, you're talking about, it's in the legal economy. So, and then you have the underground economy, which is most of the economy in Africa. So those people actually are not in the numbers. They are not in the reports. Doesn't mean they don't exist. This is why actually we are working with companies addressing issues for informal traders, because they also have needs. They also participate in the economy. So, they exist and they need to be addressed. I think the assumptions that small markets and the African markets are very small markets. I think you are talking about people don't know necessarily the African economies who haven't been on the ground. If you want if you want to know about the German economy, the French economy, it's very easy. There's plenty of statistics and so on. Everything is on the paper. If you want to know the African continent, you need to go there. Actually, you need to go to the small markets of Abidjan, of Dakar and in Lagos, and then you will learn about the economy in Africa. (23)</i></p> <p><i>More investment opportunities in larger markets</i></p> <p><i>Senegal is still possible, but think like Burkina Faso, Guinea. There is actually no chance at all because the costs are just so high, the standard costs. If you say I commission a law firm, and do due diligence there, do an external environmental check, and have people flown in, and then you just don't find any deals there. (18)</i></p> <p><i>[...] I'm not going to pretend that like most people's deal flow, including our's, is not from the major markets. [...] because more capital has been fed into it. So there's a lot more pipelines sort of coming out and it's like a cycle right? (16)</i></p>
Aggregate dimension: Startup characteristics	<p>Non-African</p> <p><i>Non-African VCs are more likely to invest in non-African founders</i></p> <p><i>[...] yes, it is a challenge and I think it's something that we are increasingly aware of. It's also linked to the fact that, unfortunately, and again this is changing, but most of the VCs are foreign investors. Uh, and you have a tendency to basically, as an investor, invest in who looks like you, basically. Uh, and so, yeah, you're investing in Africa. You think there is a risk. But then there's this founder who went to the same university as you, are also American and, you know, actually, you have a couple of things in common. So that's like for you the way to limit the risk. You go for that. It's not something completely abnormal. But it's true that it's something that present some challenge to the future of the ecosystem. (22)</i></p> <p><i>And that's why I would say someone who is maybe white, from America and whatever, has already worked at, I don't know, a big corporate is obviously more attractive for other investors. And to be</i></p>

honest, we always look for something in people that we see in ourselves, right? So it might be a bit more interesting for a big VC that comes from the United States to invest actually in Americans, right? Or people that look like them, that act like them. (24)

Yeah, I mean it's prejudice. But again I don't like to make things into like evil conspiracy, right. That's kind of the really easy way out. To talk about oohhh...playing the victim. People like to work with people they are familiar with. This has been the problem for women for like...from the beginning of time. If all of the men have the power, you know, and they interview somebody, they want to be somebody that is familiar, that they can make jokes with, that they can understand, and things like that. And then if you take the next layer it's about race. You being more comfortable with somebody. (4)

But I mean, I think it's good to see the recent focus now on kind of black founders, I'm obviously not. But I think there was a, there is still a bit of an issue around...around that. So again, there may have been an advantage that, sadly, I'm pale, and, you know, got UK qualifications. And but even with that, it still...still pretty tough. And I think, again, we need a big seismic shift to encourage greater focus on the black talent [...]So...so much of this is racially tinged (29)

Non-African founders have stronger networks

So I went to Harvard Business School. There's a lot of Harvard Business School alumni that are in East Africa raising money and they raise money in a heartbeat because they're white. (26)

Many, many early-stage companies, the founders are from North America. They come with their investors, you know, they know them. Whereas early stage African founders finding it very difficult to access capital because they don't have that network of investors. (19)

Totally true, because they have trust networks, you know, they...they can go to their classmates or their friends and family for money. Oh, sure. So for sure, that's true. And that's been a huge issue in Kenya, right, because Kenya has been home to a lot of especially American expats, who find it much easier to raise capital. (15)

[...] so from my experience the expat-led companies have connections before. Like they know people who know people and so fundraising is like, you know, reaching out to someone that they already have had a relationship with them and just because they have probably executed a business before and they're trusted as a businessperson to execute. And so they get to raise often a lot of funding that way because of their existing relationships and because of the track record that they have in terms of executing and running businesses. (25)

African founders have disadvantages

When I need to travel in Europe or the US, I use my US passport. There have been events, where startup founders that I know, that I know personally, couldn't go to the event, but I could because I have a US passport. And so I think that as we ease off the COVID restrictions, and travel becomes more common [...], I do think it's going to cut against people who don't have sort of that, you know, passport, capital, or whatever you're going to call it, because it makes it very difficult for them to physically build relationships with investors. And that's, that's a key key part of raising. (34)

You get the startup, you know, the founder that's coming out of Soweto that potentially hasn't gone to university, but has a great idea, doesn't know about the US Aid project and [...] doesn't have the same level of access. So that is problematic. It doesn't mean that they don't have great ideas, but they're just not coming from a setting context where they can quickly understand how this sort of ecosystem for developing the tech early-stage works. Whereas your student from Stanford does and he is going on a one-year sabbatical to Johannesburg to check it out and is better placed to actually tap into those kinds of opportunities. (19)

	<p>International networks</p> <p><i>Many local founders studied or worked in the West</i></p> <p><i>So I grew up in the States, but most of my family lives in Accra, Ghana, I went to school undergrad at Harvard, went to law school at Stanford, at a time where a lot of my classmates were either starting their own startups, or they were joining other people's startups. And I got bitten by the startup bug as well. I taught myself how to code, Ruby on Rails and did a marketplace startup back in 2014, and coded my own platform. It was an incredible experience. But we ran out of funds, and the startup had to wind down and instead of going into sort of a more traditional job, I decided to continue the startup journey, but in in Ghana, where I knew that there was just a lot more opportunity for technology to make a big economic impact (34)</i></p> <p><i>[...] I think for a large portion of the time. It was really friends, families, and in particular, his MBA network. That and that is still quite a significant portion of the cap table...at INSEAD. (33)</i></p> <p><i>But you see an increasing amount of African entrepreneurs. You know, it's funny because when you say that, I'm trying to think there is...you have a lot of these expats raise. And then the second and it's not a tier, but the second group of people that you see are African who studied in Europe or the US. (12)</i></p> <p><i>Founders with international networks are more investor ready</i></p> <p><i>Well, I mean, number one, so in Kenya, we have the whole white founder problem, in Nigeria we have got IJGB Yes. IJGB. I just got back. Yeah. And even...even myself, Oh, my background, international experience, went to good schools, worked for international brands. I know how to speak to fund bases. I know how play the game, you know, like, you can switch, you can switch the camera off, you don't know where I'm from. (14)</i></p> <p><i>I would say if you had the opportunity to study in a very good business school in Europe or in the US, and you can see actually a lot of founders, African founders, raising huge rounds, actually from top to University of Western universities. Then you have, like, a social network that you can bring back home. And on the other side, you have entrepreneurs, very good entrepreneurs, but who don't know the codes, basically, of venture capital. (23)</i></p> <p><i>Local founders leverage international accelerator programs</i></p> <p><i>[...] we also applied to [prestigious US-based accelerator program] in the US. And then we got into it. So we actually fly to the US [...] about three or five months in the US, right. And that kind of opened us up to [San Francisco-based VC firm], investing in San Francisco. And then after that we raised about, about 500k [...] just from independent investors in San Francisco. And then continued to execute. So that was kind of the time that we pivoted. And then once we pivoted, we gained some traction, which was great. And then we applied to [prestigious US-based accelerator] and got into [prestigious US-based accelerator]. And then after [prestigious US-based accelerator] we raised \$1,000, to keep to just keep improving the products, right. And then last year, we raised \$2.5 million in equity last year, mostly from also VC firms. (28)</i></p> <p><i>[...] by 2017 [prestigious US-based accelerator program]. [...] So obviously, that enabled us to reach more of our investors, institutional investors outside of the continent. (30)</i></p> <p><i>VCS like African founders with international networks</i></p> <p><i>On the table where people saying, you know, I left Nairobi twelve years ago. I went to Cambridge and then Harvard worked for GE and McKinsey. So, employees started in Nairobi. This is high quality stuff. I came back to the continent. Well, that was our dream. And we get people from all over the world to come to Nairobi. So, it's not only Kenyan or African. The people from South Korea and the US and Europe coming to the continent. So, one of the big contributions we have is</i></p>
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	<p>to not only bring capital but also talent to the continent. So that being said. Our model now is also to identify some very early-stage companies in addition that can come into [name of project]. And [name of interviewee 2] can talk more about that. But I just want to highlight the uniqueness in our model. We went for talent first and this, of course, came partly by the fact that we all came from McKinsey. McKinsey is only one thing, and that's talent. So, we thought that approach could work like, it's working. (13)</p> <p>[...] they worked at Facebook, they worked at Google. They have some sort of like connections. And I think, again, that's where people maybe they, you know, they hold onto it like, oh, they've worked at Google. It's an American company. So therefore, they must have understood how we work. (12)</p>
	<p>Social and environment orientation</p>
	<p>Many VCs operating in Africa have a high impact orientation</p> <p>But we also see more and more players in the kind of impact investing sector or field. That's why I think also in the future it will be more and more important to actually be able to show growth in impact, saying customers reached, CO2 mitigated, etc., et (24)</p> <p>[...] we define ourselves as a commercial investor and not as an impact investor, because the definition of impact is always a bit blurred. You have very different kinds of investors who define themselves as impact. And so, what we do is that we don't use the term impact, but we believe that if we do our job well building champions in access to health care, access to education, access to food, then by definition it will generate impact [...] (9)</p> <p>VCs see promise in business models that solve local problems</p> <p>[...] because we think non-consumption is the most is the most probably dominant thing. In in the region, folks are low income, and not able to buy the things that they need. And we think that that one way to flip that around is to view that as an opportunity, as opposed to...as opposed to viewing it as a... as a problem. And so to that extent, we view the, this non-consumption as an opportunity, one to invest in folks that are that are capturing that opportunity and solving for it. (6)</p> <p>So, we invest in early-stage, very early-stage startups, even pre-revenue investments and very much, as you said, focused on financial inclusion. So, trying to make sure that the majority of Africans are included in the financial sector and a lot of them don't have access to bank accounts and access to lending and access to insurance and all that stuff. So just trying to find those sorts of fintechs that are going to provide those services to the underserved majority of the population (3)</p> <p>So we said, let's double down on energy and fintech because we believe if you keep the money moving and the lights on, you're solving the problems. So we're now an energy FinTech focused fund (14)</p> <p>ESG story facilitates fundraising due to international investor criteria</p> <p>So I think the fundraising process generally, in Africa, when you're trying to raise a sizable fund, you usually have to work with DFIs. Which like, can be a bit more of an intensive process in terms of like diligence requests and stuff, because rightfully, they have their own requirements and things around how the money is governed, that we have to meet as a fund. And they have their own, like, expectations around things like ESG and other things. (16)</p> <p>First of all, of course, a lot of environmental and social criteria take precedence, because that's important to us, including reputational damage. We have also always implemented an environmental management system that tells you what you have to fill out and check to ensure that there is no environmental damage or social damage, that there is no child labor and things like that are very clear. But of course it's much more detailed, that they're allowed to set up a union, that they pay minimum wages, [...] and take vacation days into account. So that's a big topic. The second</p>

	<p>thing is, as I said at the beginning, we are also very clear about what sectors are allowed. They're not allowed to do nuclear, that they don't invest in tobacco in any way. There's such a long list, which is simply impossible, which is not allowed at all. (18)</p> <p>The approach is a bit different, because a DPI has to fulfill certain goals. This is measured very strongly by how many concrete jobs have been created, even across the different genders. How is it distributed, how much CO2 is saved? (21)</p> <p>It is critically important because as investors, we believe in impact. And I don't invest alone. I have co-investors, all of whom in different aspects of, remember I talked about thesis earlier, there are those, for example, me now, if you don't have a female member on your board that has part of the control shares, I won't invest. It's that simple, okay? So that speaks to SDG 2. I think it is all five of them. But a (27)</p> <p>And the best way is to assess actually the impact of this company and that it will have on society, on the economy. So, I think on one side, actually, we are looking at metrics, for example, when it comes to when it comes to gender equality, we will be looking at startups generally with at least one female founder. So, it's important actually that the workforce gives some space, actually, to women, but also management. So, this is actually a very important criterion. Then we'll be looking at all the other indicators, such as CO2 emissions and so on. (23)</p> <p>I think there's no question that a lot of the capital being attracted to the continent comes with an SDG attachment at the moment. And like I just said, with the [another company name] fund, we are unilaterally focused on SDG three, which is extending lives and improving lives. And a lot of the government kind of support for venture in Africa tends to come with the link to climate. So, we would fund our partner in [name of project] just started the climate specific fund for Africa. So, I think to your question, I think in a way it's easier if you are a startup in Africa, if you have a strong SDG impact story. Just more available commitment and capital, I think. (13)</p> <p>[...] definitely 95% of all the capital we have raised has, has, to some extent been raised on an impact story. [name of asset management firm] one of the world's biggest impact Asset Management funds wouldn't ever invest in us, if we didn't have the story. We accessed some, a pretty nice grant by [name of organization] when, just before COVID [...]. So there is a connection, you can actually you can access quite a lot of funds if you have your story right. (32)</p>
Aggregate dimension: Investor characteristics	<p>International VC</p> <p>High risk perception and lack of knowledge among foreign investors</p> <p>[...] I can tell you an example of a very seasoned VC in the US that want to invest in the state of Kenya. And that due diligence on them and so on. And after several weeks of talking, they were still mixing up Kenya and Nigeria. But like it was not a typo. It was a real error, like asking the founder, so how is the market in Nigeria that it's saying, we're in Kenya. So, it's like, I mean established VC in the US, but I really known VC and I was quite shocked to see that. And this is not rare. I mean so. Because when you understand that this kind of knowledge gap, then of course, this creates some perceived risks. And if you think you're investing in Nigeria and then look for information and currency in Nigeria, that is a big currency question. That is less of the case in Kenya. And so, this risks from there. So, yeah, it's just the lack of knowledge creating now perceived risks. (22)</p> <p>So, on one side, I think they overestimate the risk, but on the other side, they decide probably not to invest on the continent because they don't know the ecosystem, they don't know how to operate them. If you invest on the African continent, there's plenty of stuff that we take for granted in</p>

	<p>Europe or in the US that you will not get on the African continent because the legal framework is not there because of this and tha (23)</p> <p>Yes, I definitely think the risk is overestimated, I think. Again, a lot of the views from the private equity world have come into the VC world. But yeah, I think there's as everything Africa always gets the shorter end of the stick. And I think that's what that's what you have here as well. (6)</p> <p>Outsized role of international investors and DFIs among LP-base</p> <p>[...] most of the capital that's allocated for funds in Africa comes from DFIs. So I think the fundraising process generally, in Africa, when you're trying to raise a sizable fund, you usually have to work with DFIs (16)</p> <p>Nothing would work without the DFIs. Actually almost no fund would have come about without us, I mean the whole community, all the European DFIs and a little bit the Americans too, that's just the way it is (18)</p> <p>[...] even if it was the first Africa fund that we were trying to raise as dedicated Africa, which we ended up expanding to make it a global fund, we were expecting 95% of the capital to come from the DFIs. And I know for a fact that even managers who are on the third or fourth fund, dedicated Africa Fund, more than 90% of the capital is DFI. (11)</p> <p>Some foreign VCs have prejudices about Africa</p> <p>Racism! Yeah, right. No, absolutely. Right. Wirecard...Like Really?? Like, there...there are people being opportunistic globally, you know, it's a tiny minority. So, you know, I, you know, and for sure as like a white American working in Africa. There's a lot of inbuilt trust when you're talking about LPs and fundraising, like people, people are like, okay, you don't have to work in Africa. Why are you doing it? (15)</p> <p>Instability or all the prejudices that you probably had of about the Africa and the African continent and indicated population, instability, blah, blah, blah. Part of it is true. I guess there's instability. But you see, the mistake that most investors would make is to look at Africa as a country. Africa is a country is not a country. It's several countries, very different attractions. You look at Rwanda, you look at Nigeria, you look at Senegal, three different stories. (23)</p> <p>International LPs tend to prefer expat or returnee GPs</p> <p>Yeah, I think one of the things that's not really spoken about is that the same problem exactly is in the fund management business. All of the big funds, their all based in nice places like London and Paris and stuff. If you look at the level of funding, like 95% is going GPs that are not from this continent. And so, their heart might be in the right place, but at the end of the day, their already showing that they're going to be putting their wealth....not returning their wealth to here. So they're very happy to make wealth here, and they're very happy to take it and have nice houses in London and Paris, and so on. So that's fine, that's OK. That's not a problem. But I think that's this is not just a problem for the startups, it's a problem across the industry. It's not spoken about enough to be honest with you. I think that's a really big problem. (4)</p> <p>Of course what we really like, I'll give you a classic example. Someone from Uganda, went to America for five years, studied there, then worked at Goldman Sachs, comes back and sets up funds in Uganda. Because he knows the locals, but did the training in America. Something like that is a classic case where we say, okay, we'll invest it, because they have the best of both worlds for us. (18)</p> <p>African VCs</p> <p>Local VCs exhibit a preference for local founders</p>
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	<p>We have mostly people in Nigeria, so... And I think anyone can. I mean, I don't know if every like every VC fund practices this, but I think local teams are always...generally better performing, but I don't know how much of that is an active conversation or if that's just something we just kind of notice and take into consideration subconsciously, if that makes sense (1)</p> <p>This goes to like the core of our mission. So our mission is to actually empower Africans, and we don't invest in tourists. Full stop. (4)</p> <p>[...] some of the local VCs actually have a mandate and only investing in local Kenyan entrepreneurs as well. And I, I understand the investment mandate, back to what I said before you need, you need some successful people to exit successfully for a trickle-down effect in the ecosystem [...] But so we've been in, we've actually had VCs turning us down for us being white, because we're majority shareholders of the company, right. (32)</p> <p>African VCs co-invest and co-operate with foreign VCs</p> <p>For non-Africans, Africa is a risky market. And that is why we do not, under any circumstances, encourage any international investors to invest in Africa without local investors because it is high risk and if you don't have a local presence, you will lose your money. (27)</p> <p>[...] a number of international VCs make that actually the requirements of the don't leave deals, they co-invest and they only do it with local investor is involved. For some of them, it's hard to do like plug and play funds and really, really big VCs and they have to have a team on the ground. Now two teams in the one in Brooklyn, in South Africa. Uh, so one could say that they have really good knowledge of the continent and so on, but still, it will never go alone. And they will only invest if there is a local investor. And that's the case for a number of VCs. Sometimes it can be a local angel investor. Sometimes it can be an international investor that has a strong focus on Africa. But it's really often the case that they see what we're doing on this. Someone wants a better understanding. (22)</p> <p>We co-invest with other investors, both locally in Africa and also international investors as well. So, yeah. Yeah. So that's it's when we have deals, we sometimes trade deals with co-investors. We have. We have notes on the startup and we think it's a go (1)</p> <p>Local VCs are operationally involved</p> <p>I think the African investors are more involved post investment. And I do think that the African investors that actually live in places like Nigeria, we have a good number of investors who lives in Nigeria, like they personally, personally care about the problem that we're solving (34)</p> <p>[...] we have an advisory group consisting of, of the local investors that we have, that we actually use quite a lot in, you know, understanding market market dynamics, accessing talent and stuff like that. (32)</p>
Aggregate dimension: Ecosystem evolution	<p>Market maturation</p> <p>Africa's currently young ecosystem is evolving</p> <p>Keep in mind that this is still we're still really at the beginning of what the ecosystem is. And if you take five years ago. The entire the entire ecosystem, the entire Africa, all the startups across Africa had raised 2015 just a bit more than 250 million dollars. So, this is basically really not much. It's accelerating really fast. We are at four 4.2 billion today for 2021. So, you can see the multiplier is huge. It's space of five or six years. But still, it's the beginning. So, it's normal that we're not seeing a lot of it. We should see more and more. So, these are way more exits this year than they were before, and they said it would be in more. But still, it's a little bit early to see significant returns for most of the time. (22)</p>

	<p><i>So specifically in Africa. Well, the first the first thing is that the ecosystem is fairly recent. If you look back ten years ago, they were not really for startups in the continent. So, it's really still very, very much the beginning of the ecosystem. (22)</i></p> <p><i>Increase of purely local VCs</i></p> <p><i>And that's why we're starting to see the rise of local funding. So for the first time, for example, somebody closed a \$40 million fund without any international investors. So we're starting to see that the solutions built into as the problems are crystallised, identified. (27)</i></p> <p><i>Things are changing. Number one, because forces are increasingly aware of that. Number two, because you have more and more local VCs as well. So, I think that the share of local VCs above all active VCs in the in the ecosystem two or three years ago was around 15, 20% and now we're closer to 30%. So, it's, you know, it's growing quite a bit. And that's really, really a good thing. (22)</i></p> <p><i>More local teams as role models, especially in West Africa</i></p> <p><i>I think I think that that happens in certain markets. Yeah, but not in every market. So for instance, like in Nigeria, that doesn't happen. And markets like Kenya, it does. So in Nigeria is actually a very difficult market to operate in, which I think is why it doesn't happen. Like you'll see the local ecosystem is full of Nigerians in terms of founders. (16)</i></p> <p><i>Yeah, I think it is changing, we see amongst others in the fintech sector, some local companies, you know, running very successful rounds. Which is very good, I think. And I think a few of these of the successful rounds, I think would also help others to gain attractivity amongst the [inaudible] investors community (20)</i></p> <p><i>Returnees and foreign founders pass on knowledge</i></p> <p><i>I mean, yes. I mean, I think somewhere like Nigeria, the guys who have international experience will come first. Because they're the ones who've seen a company scale from zero to 100. Yep. But if somebody's working from Flutterwave from 2017 to now they've got the experience, they don't need to go abroad. It's just it just, it just takes time. (14)</i></p> <p><i>Ideally, we would invest primarily in companies that are founded by local entrepreneurs. And there are more and more entrepreneurs who are either did their studies locally or who did their studies in Europe or in the US and Sweden who come back to the continent kind of repat founders. (9)</i></p> <p><i>But I don't think it's a bad thing when more expats enter the market. I think that's definitely the case. All of this is ecosystem growth. And if that leads to better infrastructure and better educational opportunities, African talents will have better access to be able to implement things themselves at some point, that is definitely to be welcomed. (21)</i></p> <p><i>[...] a lot of locals need to bide their time in that if the money comes in, it's also going to be people of international experience who bring that money in...then let's say, Flutterwave works and Flutterwave exit here. There'll be maybe 100 founders come out of Flutterwave. Then there's going to be 15-20 founders. It's just one generation. So if you look at.. like back in the 90s in the UK, you had something like FILTH. It's called failed in London try Hong Kong. There were like loads of foreign expats, who came to Hong Kong started building businesses, then the people who was number two and three were Chinese. Yeah. Then they moved to Shanghai and Beijing. And now you can't get a single penny unless you born in China speak Mandarin. You have to go through that journey. (14)</i></p> <p>Awareness among institutional players</p> <p><i>Changing perceptions and increasing attentiveness of investors</i></p>
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<p>A lot of global players were looking at the African market and starting to look for, you know, areas of growth and market growth and Africa became like a strong potential market. And then like, you sort of had them coming in and wanting to play a critical role, like we saw like Tiger global come in, we saw a bunch of other like US VCs come in and, and try to invest in the market. I think everybody locally understood that it was a little bit of a bowl. And that it was a result of like, the good times and like, you know, the market, just kind of he hitting some level of hype. But I think that was the that was what happened everywhere, right? It wasn't just Africa, like it was happening in the US people were getting funded, ridiculous valuations. And it was happening in Europe, it was happening, it was happening everywhere in the world, even in America and other emerging markets is happening. And I think what was good for Africa with that was that it kind of put us on the map, because of the good times, and people were actually looking at this market and being super, super proactive about it. It's put us on the map for a lot of different funds. And a lot of and globally, honestly, like there was a lot more attention paid to this market. (16)</p> <p>I'm like, because there's incredible commercial upside, as well as a huge and growing talent pool, and the obvious ability to make an immediate impact, you know, in the quality of life, the quality of jobs, changing perceptions about what what's really happening on the continent, and obviously, building these collaborations cross border. (15)</p> <p>And it's important that VCs are increasingly factoring that and really going the extra mile to back to local funders and to factor that in their assessments. Yeah, it's the thing again. Things are changing. Number one, because forces are increasingly aware of that. (22)</p> <p>So I think that we experience a big shift and we have to work towards that and we actually have also a foundation. I don't know if you knew about this, where we work a lot on the image of Africa, how Europeans perceive it. It's very important to us that we see those people as equals and not that we see them as just an opportunity to make money. So we want to change that image. And what we also do is we never invest in companies that has one founder, we only invest in co-founded companies and we also prefer to look for, obviously, African founders and also a female co-founder at least. (24)</p> <p>Investors acknowledge high performance of local founders</p> <p>[...]it is amazing the quality of the entrepreneurs and, you know, a lot of the best and brightest Africans who could work at McKinsey, or the World Bank, or, you know, in the biggest banks and consulting companies in Africa, choose to be entrepreneurs. And so, you know, it's all great in the private sector. (15)</p> <p>I think actually when we run the very first cohort in [name of project], none of our investment money went to actually foreigners. I think we only invested with locals and it wasn't by discrimination or anything, it was just by they had the better ideas and we thought those ideas were stronger and more fundable (13)</p> <p>Development finance institutions and impact investors start to push for local teams</p> <p>I think they're seeing it as a politically sensitive thing or they're seeing that, you know, a lot of the developmental financial institutions are seeing that, you know, the agenda, their objective was to build capacity. Right. And that their capital is not...if it's not helping. So, they are they are asking these difficult questions to the GP that, you know, would you be supporting local funders? So, you know, in our fund, we take it as a statement that, you know, two businesses being equal will go with the local founde (11)</p> <p>And we kind of see that also in the past I experienced a bit more that it has been changing, that there are more and more African founders, black founders. You can also see Google has launched</p>
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	<p>this interesting programme with the Black Founders Fund, where they actually focus on empowering those who actually are from the continent. (24)</p> <p>Increasing co-operation with regulators</p> <p>And so, Africa has always been quite highly regarded in terms of its financial regulation and, you know, the legal, the legal frameworks and auditing and all those sorts of things. And so historically, you know, it's always been viewed as good, you know, but it's sometimes now that we involved in this space is sort of viewed as good, but sometimes it's prejudicial. Which prejudicial, I think to the majority of the population. And most say regulation is bad, but it's overregulation, I think is bad. And the thing is, with other countries, I don't think I think Kenya. So, what's happening is that you're getting all these sorts of sandboxes, you know, these, you know, sandboxes cropping up where they're saying, well, okay, how do we keep pace with this change in information technology? And the only way to do it is to embrace them. And you bring them into and you let them work with the regulators and know, like we look at what's happening with cryptocurrencies and all these sorts of things now, you know, let them work with the regulators to develop the regulation together and let them explore the new technology in these environments. So, I think that's what Nigeria and Egypt and these other countries are doing quite well. And we've just started, I think we're a little bit behind us in this regard. I think we've you know, we've got a is called a [inaudible: 00:48:25] into financial services working group or something. Then, excuse me, that includes about six regulators that is trying to work together and trying to develop, but it's critical six regulators, it probably slows down the process. So, we are sort of starting to see it. But I think we're a little bit behind the rest of Africa and we tend to follow what's happening in Europe and that sort of thing. So. But as we follow, hopefully investors will start to follow as well. (3)</p> <p>I think, historically, the African regulator, and again, I'm talking about central bank regulators have been more of they will tell you, like, you know, we're gonna, we're gonna tell you, you don't talk to us, that has started to change, because they could see the positive economic benefit with the mobile phone industry in Kenya, right, the the regulators that in other African markets, had taken a wait and see, and then they lost out on a lot of that, you know, economic development, as well as the halo effect of being pioneering. So I think, you know, we saw our African regulators be a little more alert to the opportunity and, you know, Blockchain, how do we make this good for poor, the majority base of the pyramid consumers? You know, how does this create more affordable access to digital financial services, digital identity? So, you know, certainly digital identity, I think, (15)</p>
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Appendix 9 – A-priori analysis of necessity

Condition	Consistency
Prominent ecosystem	0.75
~prominent ecosystem	0.35
Market size	0.65
~market size	0.45
Non-African	0.34
~non-African	0.66

International network	0.88
~international network	0.12
SEVO	0.59
~SEVO	0.51
African VC	0.73
~African VC	0.27
International VC	0.90
~International VC	0.10

Appendix 10 – Robustness tests

First, we change the inclusion and exclusion threshold to the 80th and 20th percentile, respectively, for all conditions which were not calibrated based on case knowledge. For late-stage and early-stage VC markets, results remain identical. All measures of fit remain above their necessary thresholds. When we adopt the inclusion and exclusion thresholds to the 85th and 15th percentile respectively, late-stage results remain identical. For early-stage results, we observe on additional configuration that contains a small fraction of predominantly African fintechs. However, in early stages the funding amounts required to be classified are much smaller (US\$ 450,000).

We also changed the crossover point to the 47.5th percentile. For the early-stage solution, results remain identical with only small changes in inclusions and coverage scores. While overall interpretations remain fundamentally similar for the late-stage solution, one of the five initial configurations disappeared, due to the absence of model ambiguity. Furthermore, the ecosystem condition became irrelevant for Configuration M2 in Table 4.

Finally, we changed the crossover point to the 52.5th percentile. For the late stage, model ambiguity returns. The solution only exhibits four rather than five configurations. In particular, the only condition available to African fintechs (M4) is dropped from the solution. As described above, the low coverage of this configuration indicates that it is only populated by few cases. Furthermore, at a consistency of 0.81 it lies just above the inclusion threshold. Raising the crossover point by 2.5

percentiles means that the configuration no longer fulfils the necessary parameters of fit and is dropped from the solution. This indicates how tenuous the paths available to high funding are for African fintechs, even at a later stage of the VC market. All other configuration outlined in Table 4 remain identical. In a similar vein, one configuration is dropped from the early-stage configuration in Table 4 (N1). All other configurations remain identical.

Overall, the robustness tests reveal that a few individual configurations are dropped or added, depending on the severity of changes. However, the overall interpretation remains substantively similar. In early stages of the African VC market, predominantly African fintechs dominate. In later stages, more paths to high funding become available to African-led fintechs. However, the latter remain exposed to significant hurdles.

Appendix 11 – Exemplary proof quotes chapter 6

	First-order codes, <i>second-order themes</i> , quotes
Aggregate dimension: Formal institutional voids (1a)	Unfavorable macro conditions
	<i>Market is too small for international investors</i> <i>So, you know, I could in India, I could wait three years to be profitable of 40 years to be profitable simply because we knew the market is large enough that eventually the business scale allowed me to start being profitable. In Africa that's a problem, right? (F4)</i> <i>You always have to keep in mind that the whole of Africa has a smaller GDP than France. So if you subtract oil, gas and mining, then you know what we're talking about. So that's absolutely small and irrelevant for really big investors. (D2)</i>
	<i>Foreign exchange risks</i> <i>It was actually a risk in Nigeria because [...] The supply of the currency is controlled by the government. [...] It's like in Argentina, they're controlling officially the exchange rate. And so, we're afraid [...]. (F5)</i> <i>So we look at safety, the currency, I think for the moment of at least since the pandemic, it has been again very difficult to source currency (D4)</i>
	Unfavorable market institutions
	<i>Foreign exchange risks</i> <i>It was actually a risk in Nigeria because [...] The supply of the currency is controlled by the government. [...] It's like in Argentina, they're controlling officially the exchange rate. And so, we're afraid [...]. (F5)</i> <i>So we look at safety, the currency, I think for the moment of at least since the pandemic, it has been again very difficult to source currency (D4)</i>
	<i>Unpredictable and inconsistent regulation</i> <i>So [Name of Company] from Ghana was a company that received quite a bit of funding from I think some US VCs, and then they were they did a press release on like, the size of the round and all that. And then the next day the Ghanaian government, kind of shut down their operations (F9)</i> <i>We concentrate our efforts [...] on regulatory engagement for our FinTech companies, primarily in Nigeria, because, you know, the Central Bank of Nigeria has been the biggest problem for us in terms of kind of arbitrary rulings in two times in the life of the fund (F8)</i> <i>Underdeveloped capital market institutions</i>

	<p><i>If you invest on the African continent, there's plenty of stuff that we take for granted in Europe or in the US that you will not get on the African continent because the legal framework is not there (A3)</i></p> <p><i>] Well, I think there is a big risk perception of the African market. You know, from the macroeconomics to the fact that our markets are still relatively I don't want to use the word informal, but, you know, some markets are just not structured with the appropriate institutions, good law practises, good courts, etc. etc. and so that all adds to the risk. (D3)</i></p> <p>Red tape and bureaucracy</p> <p><i>I would say that investing in Africa from our experience is actually quite difficult because of the bureaucracy that has to occur simply because it is an African country. And less developed nations obviously have slower and more cumbersome processes than a lot of the Western world. (F3)</i></p> <p><i>So, back in the early 2000s, I was traveling all over Africa. And you know, in African governments made it hard for business incorporation, and hard to get work permits. (F8)</i></p> <p>Divergence of African markets</p> <p><i>There is also another risk that is quite limited, quite specific to Africa is that. We tend to look at Africa as a united divided region. And there's sort of the investors is looking at it and saying, oh, it's a market of 1.1 billion people. No, it's 54 countries. We some big some small and the risk of the startup not being able to move from the headquarters country to another one is quite high. (A1)</i></p> <p><i>It's just far too small and too fragmented. And then you have to imagine you have the GDP of France, maybe less. And then you have to deal with 54 governments and 54 regulations...(D2)</i></p>
	<p>Hurdles faced by international GPs</p>
	<p>Lack of knowledge about Africa</p> <p><i>I mean, I can tell you an example of a very seasoned VC in the US that want to invest in the state of Kenya. And that due diligence on them and so on. And after several weeks of talking, they were still mixing up Kenya and Nigeria. But like it was not a typo. It was a real error, like asking the founder, so how is the market in Nigeria that it's saying, we're in Kenya. So, it's like, I mean established VC in the US, but I really known VC and I was quite shocked to see that. And this is not rare. I mean so. Because when you understand that this kind of knowledge gap, then of course, this creates some perceived risks. (D2)</i></p> <p><i>So, on one side, I think they overestimate the risk, but on the other side, they decide probably not to invest on the continent because they don't know the ecosystem, they don't know how to operate them. (A3)</i></p> <p>Lack of local management footprint</p> <p><i>First one being access to information. And that's why it's important to be on the ground. And I think it's difficult for some of the investors who have offices in London or in Paris or in New York, not to have a presence on the ground, because access to information is much more difficult than in other geographies. (F2)</i></p> <p><i>I think it's important to have a local team on the ground because initially, we used to have the whole fly-in fly-out from Brussels, London, you know, whatever. Fly-in fly-out model that usually doesn't work. So it's important to have local content on the ground because, you know, in terms of, I mean, even in terms of due diligence, there's so much informal due diligence that we go through. (L7)</i></p>
	<p>Operational hurdles faced by portfolio companies (portcos)</p>
	<p>Missing investment readiness</p> <p><i>And one of the challenges we face being an investor in some African frontier markets [...] is understanding of reporting requirements, you know, so we, as an investor need to see quarterly financials, and, you know, demonstration of contracts and things like that. (F8)</i></p> <p><i>And finally, I would say in general, understanding of investment readiness or understanding of the investment processes and standards. A lot of founders that we work with are not really aware of how the investment processes work, what type of information exactly to present to investors, how to present them, how to interact with investors and so on. (F2)</i></p>

	<p><i>Sudden license withdrawals by regulators</i></p> <p><i>So [name of company] from Ghana was a company that received quite a bit of funding from I think some US VCs, and then they were they did a press release on like, the size of the round and all that. And then the next day the Ghanaian government, kind of shut down their operations. [...]. (F9)</i></p> <p><i>We concentrate our efforts, you know, outside of the portfolio investment management on regulatory engagement for our FinTech companies. primarily in Nigeria, because, you know, the Central Bank of Nigeria has been the biggest problem for us in terms of kind of arbitrary rulings in two times in the life of the fund. (F8)</i></p> <p><i>Uncritically copying Western models</i></p> <p><i>This idea of unicorns is also a little bit of a falsehood, right? Again, this imputation of Western models, without thinking of how does it apply to the local context is a huge issue. But yes, we find that there's quite a bit of interest on like tech... I'm like, you see, by time people get to use tech the way people use tech in the Western world, you have to be at a certain level of development, right? (A5)</i></p> <p><i>But again, the starting set of assumptions entering the market was that you could structure a fund exactly how you'd structured it in the West, no consideration of what are the local market dynamics, the public markets, what is the way they work elsewhere. (A5)</i></p> <p><i>Strict ESG criteria</i></p> <p><i>What the DFI is need to be cognizant of, is they can't give me money that is so painful to my founders, that they don't want my money [...]these are small companies that grow quickly, they need to stay alive, they cannot be filling in more than X amount of hours a month on ESG. (F7)</i></p> <p><i>These super complicated ESG reports that are typically done for late stage companies make zero sense from, you know, administrative and financial burden on these early stage companies. So we're really pushing to figure out what is a light touch impact report that all funds and early stage companies can use? (I2)</i></p> <p><i>Missing infrastructure</i></p> <p><i>I think Africa may struggle to be ready for. I mean, even as basic as e-commerce, right? If you have a transportation system that's broken, it's really hard to imagine that people will enjoy buying online because, you know, you're not getting your goods delivered or, you know, so there are certain infrastructure barriers. (F6)</i></p> <p><i>You know, banking penetration, really low. Var penetration, really low. Smartphone penetration is still quite low. Then within those who have a smartphone, sufficient penetration of mobile Internet is even lower. So again, we discussed last time, but if you can buy to sort of like put on top of each other the smartphone penetration, their mobile data penetration, their, banking layer, card layer, basically, what you have at the top [...] is really, really small. It's really at the top of the pyramid. And so, you're not going to make it work just in that and charging customers that's not going to work. [...] (A1)</i></p> <p><i>Missing talent</i></p> <p><i>Talent, believe it or not even though people always talk a lot about...oh unemployment is very high in Africa, actually we always have a talent squeeze for top talent. It's very hard to find talent and stuff. We need to have higher production of higher-skilled labor. And that really, I consider this a soft infrastructure issue that is just across the continent. (L4)</i></p> <p><i>Lack of infrastructure is the first, okay? So if you look across the continent, education. Levels are declining. We're starting to see islands of educational excellence. So talent is becoming a critical infrastructural challenge, okay. That, you know, we so, yes, we're getting more people, but they're not getting better educated and that is a critical, critical challenge, okay. (G1)</i></p> <p>Shallow and illiquid capital markets</p> <p><i>Shallow public markets</i></p> <p><i>And then in terms of like, the number of companies that actually actively list, it's fairly small in stock and stock exchange, like the Nairobi Stock Exchange, one company makes up about half the market cap. Wow, okay. (F9)</i></p> <p><i>But the fact of the matter is that, especially in smaller market, there is no public listing possible. Kenya's total market cap half of it is Safaricom. Like 50% of the market cap is one company. [...] So, you know, clearly the public listing, even if you get it, it's not really there's no guarantee that you would probably just list the company, but you will not be able to find any buyers as such. (F4)</i></p> <p><i>Rare exits and few bidders</i></p>
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	<p><i>So if you talk to fund managers, then there's no problem. I'll either sell it to a strategist or to trade sales and other funds or do an IPO. These are the standard answers you always get. So all three exist, but they are extremely rare. (D2)</i></p> <p><i>Not because the deals are not good, but because there's not many exits. So, I think they exists that take place are usually really good that the returns of those exits are massive. But they're not that many. (A1)</i></p> <p>Not enough African capital</p> <p><i>Um, there isn't a lot of local capital that gets allotted to venture, honestly, even to private equity. [...] It's actually a very interesting problem, but a lot of the like pension funds locally, although they hold a decent amount of AUM, and are technically allowed to allocate, I think in Kenya, it's up to 10% to private equity they don't, because bonds give them like a strong enough yield, there's a fear of like deviating from their existing investment strategy. (F9)</i></p> <p><i>I think one of the biggest things is how can we also get, we keep saying how can we get Africans to start investing in Africa, right? Because they understand the risk better so they can price it more reasonably, they are close to the ground. But it's just a positive signal to foreign investors because if you keep turning to foreign investors to invest. I mean, sometimes we get this question, what are the African billionaires doing? Where are they putting their money if they're putting it in the US and I putting mine in Africa? And it's a real, it's a real question, right. (A5)</i></p>
Aggregate dimension; Expectations of financial institutional field (Ib)	<p>Strict LP terms and criteria</p> <p>DFIs expect ESG compliance and impact</p> <p><i>Going to more institutional investors, including European DFIs, we know we need to do more formally, impact Reporting. (F8)</i></p> <p><i>I think there's no question that a lot of the capital being attracted to the continent comes with an SDG attachment at the moment. And like I just said, with the [another company name] fund, we are unilaterally focused on SDG three, which is extending lives and improving lives. And a lot of the government kind of support for venture in Africa tends to come with the link to climate. (F6)</i></p> <p>Foreign LPs offer lopsided terms</p> <p><i>[...] most of the capital that's allocated for funds in Africa comes from DFIs. So I think the fundraising process generally, in Africa, when you're trying to raise a sizable fund, you usually have to work with DFIs (16)</i></p> <p><i>Nothing would work without the DFIs. Actually almost no fund would have come about without us, I mean the whole community, all the European DFIs and a little bit the Americans too, that's just the way it is (18)</i></p> <p>Foreign LPs offer lopsided terms</p> <p><i>Its hard. It's super, super hard. It's so hard, I understand why people give up. They also don't want to put money into African structures. That's why we're now set up in Jersey. It's great, it costs us so much money to do that. But as I said...Compliance and...they insist on the right to fire us at any time without us having done anything wrong. (L5)</i></p> <p><i>The rules that are put in place are so hard for us fund managers. To be honest, if I went into private equity, I would make about four times as much.[...]Well, to be honest, you have to be stupid to go into VC in [African country]. So you can only do it because you want to do it. They make it so hard. (L5)</i></p> <p>Thorough due diligence by international LPs</p> <p><i>So I think the fundraising process generally, in Africa, when you're trying to raise a sizable fund, you usually have to work with DFIs. Which like, can be a bit more of an intensive process in terms of like diligence requests. (F9)</i></p> <p><i>We, we started fundraising private capital and the DFIs came in a bit later, to be honest, because the DFI fundraising process is quite cumbersome. I think this is a weakness of the DFIs in a way that they have a lot of demand, lots of people wanting their money and they have extremely comprehensive processes for getting into a fund. (F6)</i></p> <p>LPs have doubts</p> <p><i>I also said, well, if there isn't one here, then you just have to set up a VC fund. Tried that and I was told quite clearly by the traditional...by the banks and the other financial institutions which normally support VC that VC doesn't work in [Southern African country]. This is for Silicon Valley but not in [Southern African country] and definitely this typical tech VC. Also sorry, absolutely no chance of getting any money. (L5)</i></p> <p><i>Second thing is that there is still a lot of skepticism about whether VC can work in Africa. A lot of the money, as I said, is impact money. And impact money doesn't look for returns. Impact money says I gave money and with that people ticked their box. In the VC sector, the point is that we have to bring returns. And there is still a very, very big question</i></p>

	<p>mark as to whether that is possible. Of course we are now one of those who made it once. But many still say: Yes, maybe you were just lucky. And it doesn't help that there aren't many other funds that have made it. So it's still like this: if you want to do the impact things, then you go to the rest of Africa, if you want money as a "return" should you really invest in [Southern African country] or rather invest your money in America or put it somewhere in Europe? VC as an asset class has not yet proven itself in [...] Africa. Is that one of our big problems?(L5)</p>
	<p>Historically subpar performance</p> <p><i>Few successful late stage rounds</i></p> <p>If you look at the Series B in Africa, there are very few. And so, I think if you think about investing in Africa historically, there's no I mean, there's like ten Series B yearly. And so, you're getting into a country, a continent where, I mean, our entire investment profile is trying to get Series A, Series B, growth IPO. And so, there's been very few Series B and almost no IPOs, maybe one recently a JUMIA But the company is actually a French company or London company on early understand. And so, I think that's where people are still a little scared. (F5)</p> <p>So, I think, yes, it's right now it is risky because there's very few Series B, it's super risky. But my bet is that by the time my companies I invest right now goes to their Series B, the market will be more developed. We won't have ten Series B in Africa every year, but we'll have 100. And then by the time they go to growth level. (F5)</p> <p><i>Underperformance of Private Equity in Africa</i></p> <p>I think PE failed. And I think DFIs should focus on VC because at least our track record is solid. [...]. Right now Africa has not worked. Because PE has been the instrument that has been used. And I can give you a whole essay of why PE doesn't work. (F7)</p> <p>And if you look at the, if you've been looking at some data on returns for PE funds, PE funds have failed, growth funds have failed miserably in Africa. They went promising 25 percent IIR. Maybe they delivered mid to low teens on equity investments, right. One the timing to exit was longer. So the assumption that you could do a 5 to 7 year fund and exit in 5 to 7 years to a secondary market or IPO was really wrong. The secondary markets is the same funds. So you don't really have a buyer. And the public markets are not that active. (A5)</p> <p><i>African VC funds underperform Asia</i></p> <p>I would say the market in Southeast Asia is more advanced. I would say that the pool of really attractive Series B and perhaps Series C opportunities is simply larger. And accordingly, I would say that if you work with a large and a good investor, the probability is that you will realize corresponding multiples. At the moment it's a little higher than in Africa, simply due to the fact that the ecosystem isn't ready yet. (D5)</p>
Aggregate dimension: Africa's financial subordination (1c)	<p>Unbalanced structure of the global financial system</p> <p><i>Lack of late stage funding due to capital flight</i></p> <p>Yeah, I mean, it's tough for like, a, like, we obviously we need other funds to play in the market. Um, so it's tough from the perspective of [...] follow on funding, because [...] we invest later series, and we're actually doing some series B. But the capital stock Series C plus in Africa is very slim. (F9)</p> <p>It definitely has affected the Africa VC market, because at mid-stage and large-stage a big portion of that money was coming from US firms to a lesser extent European and Chinese firms. So it means that there will be pressure on the mid-stage and late-stage in the short term. Generally the amount of VC money is also less and we are the most frontier of the market. And also I think there will be an outsized pull-back in this part of the world, again in those stages. (L4)</p> <p><i>Fund registration in offshore financial centers</i></p> <p>The problem is often that the local ones are completely excluded. There are many jurisdictions in Africa, such as Ethiopia, Morocco and Algeria, where locals cannot get into big deals. Because the big deals are always structured through some SPVs abroad like Mauritius, Cayman or, increasingly these days, Luxembourg. And it is simply forbidden for local companies to invest abroad. (D2)</p> <p>Also, they don't want to bring money into African structures. That's why we're now set up in Jersey. It's great, it costs us so much money to do that. But as I said...Compliance (L5)</p> <p><i>Africa is underweighted in portfolios</i></p>

<p><i>I think if you look at the level of VC funding in Africa compared to the GDP, it's one of the lowest...I think it is the lowest out of all of the continents. If you look at the level of VC, it's a drop in the bucket. Which doesn't reflect the size of the market and the consumers. (L4)</i></p> <p><i>That's exactly that. It's underdeveloped. It's an underdeveloped asset class and people don't understand the risk profile. And so that there's just a lack of capital, there's an abundance of opportunity, but there's a lack of quality capital that's being deployed into the space. I mean, globally, there's less than 1% of VC funding is going into Africa. (L3)</i></p>
<p>Negative views and narratives about Africa</p>
<p><i>Lack of knowledge about Africa</i></p> <p><i>Because when you understand that this kind of knowledge gap, then of course, this creates some perceived risks. And if you think you're investing in Nigeria and then look for information and currency in Nigeria, that is a big currency question. That is less of the case in Kenya. And so, this risks from there. So, yeah, it's just the lack of knowledge creating now perceived risks. (A1)</i></p> <p><i>But what I can say is that it is a challenge to understand and outline this market at the beginning because, as I said, it is one, even if there are certain homogeneous tendencies when it comes to the individual language areas and the large ones macroeconomic challenges that some of these countries have, it is a super heterogeneous market. (D5)</i></p> <p><i>Outsized risk perception</i></p> <p><i>Yeah, so as you can appreciate, many Europeans run for the hills when they hear Africa. So the fundraising challenge was defined individuals and institutions who had a risk appetite for Africa, self selecting (F8)</i></p> <p><i>So we have a risk perception that, in my opinion, is disproportionately high. Above all, the risks are rated significantly higher than the potential (D5)</i></p> <p><i>Prejudice against Africa</i></p> <p><i>So yeah, there's just a lot of mistrust of the other and you know, very few global ambassadors from big institutions have ever been on the ground in Africa, right. (F8)</i></p> <p><i>Racism? Yeah, right. No, absolutely. Right. Wirecard...Like Really?? Like, there there are people being opportunistic globally, you know, it's a tiny minority. (F8)</i></p> <p><i>The perception bias is always that "we are civilized people and the others are just not as advanced as us". And "we are the ones who basically built this 21st century world". And the others are always laughed at a bit. The poor people in Africa, the poor people in the Middle East, the poor people in Asia. (D5)</i></p> <p><i>Perceptions that Africa is corrupt</i></p> <p><i>Everyone assumes that things are corrupt here. So the old corruption stuff that we get here...I mean...the type of controls we have to introduce here...yeah...it's tough...So we have a partner who doesn't do anything other than just compliance, controls and ESG. (L5)</i></p> <p><i>Also the reputation of the countries is not always great, so meaning that sometimes it's also difficult to find co-investors because of quite a bad reputation about fraud and these kind of things. (D4)</i></p>
<p>Disadvantages faced by local GPs</p>
<p><i>Expat-led funds have easier time fundraising</i></p> <p><i>All of the big funds, their all based in nice places like London and Paris and stuff. If you look at the level of funding, like 95% is going GPs that are not from this continent. And so, their heart might be in the right place, but at the end of the day, their already showing that they're going to be putting their wealth...not returning their wealth to here.. (L4)</i></p> <p><i>I would say the second thing is just the pressure to perform that I think local VC funds have, because it's just harder for them to raise funds, harder for them to get large funds. Even though people are investing in Africa, they're still tentative. They're still putting more money towards expats, white, white investors.</i></p> <p><i>Fundraising is a challenge, esp. for new funds</i></p> <p><i>And, like for the first one, I know, it took them longer. It's very hard, always choose the first one always more difficult for us the first one, and so I think it took them a few years. But, you know, having track record obviously helps at the time it was when they were trying to raise with no local track record. It's tough because you don't have money to deploy so you don't have a portfolio to prove. And honestly, I think it's an issue that a lot of African fund managers have with</i></p>

	<p>like the first fund it's very, very difficult for them to raise because like they don't have a track record to show and then LPs rightfully asked for track record it's like a chicken and egg problem. (F9)</p> <p>But for somebody like, let's say a [large Western DFI], I'm not saying they compromise, but for them, you know, they are the end all goals to me. They will always give money to a manager who's been around two or three times rather than to a new manager simply because they say, okay, you know, they probably made all the mistakes and they may not make more. So, yes, there is a certain amount of challenge in Africa (F4)</p>
	<p>Dependence on foreign capital</p>
	<p>Lack of African capital</p> <p>Um, there isn't a lot of local capital that gets allotted to venture, [...]a lot of the like pension funds locally, although they hold a decent amount of AUM, and are technically allowed to allocate, I think in Kenya, it's up to 10%. To private equity. They don't, because bonds give them like a strong enough yield (F9)</p> <p>We had mentioned that governments are overborrowing in the local markets. So formation of local capital remains quite, quite a challenge. Because the interest rates on government paper tend to crowd out private capital from real economy. I guess it's part of that policy problem (D3)</p> <p>Local capital flight to foreign markets</p> <p>Because I think one of the things we have suffered from on the continent, because we have a lot of instability, a lot of people when they generate some wealth they prefer to put it in environment they perceive as safer...yeah Swiss bank accounts, US capital markets, UK capital markets, Germany, you know, France. Think of it very simply. If you make a little bit of money, the first thing that somebody usually from Africa will think about is maybe I buy a home in London or Paris or whatever. (L4)</p> <p>Most of the investments we make are into companies that have a holding company in Delaware. And a small number of our investee companies have their holding company in the Netherlands, the UK, Germany, and Singapore. So, you know, part of our investment thesis is that we want to have companies where the IP is protected in, you know, completely safe jurisdictions where international investors, you know, don't feel any friction. (F8)</p> <p>Importance of DFIs as LPs</p> <p>I think the things are slightly different in Africa, because there's the largest, the largest LPs that are looking to allocate to this market are DFIs. (F9)</p> <p>Without the DFIs nothing would work. So actually almost no fund would have been created without us, I mean the wider community of the European DFIs and a little bit the Americans too It's so, so essentially important, that a lot more must happen. (D2)</p>
	<p>Disadvantages faced by local GPs</p>
	<p>High pressure for local funds to perform</p> <p>Of course we are now one of those who made it once. But many still say: Yes, maybe you were just lucky. And it doesn't help that there aren't many other finds that have made it. (L5)</p> <p>Like there's no room to not have success, to not perform highly, to not have 4x3,x, whatever the numbers are, because they know, like by failing you, you disprove this idea that you can invest in Africa, that Africa is an opportunity. (L1)</p> <p>Global funds driving up valuations</p> <p>Um, my view of the development, development of valuations having risen significantly as they did, I think I think it was last year or so now, honestly, with, you know, kind of the market being in a downturn valuations are normalizing. But last year was insane. I think what was happening was, first of all, there's like a lot of capital that's been allocated to venture generally and globally. A lot of global players were looking at the African market and starting to look for, you know, areas of growth and market growth and Africa became like, A strong potential market. And then like, you sort of had them coming in and wanting to play a critical role, like we saw like Tiger global. Come in, we saw a bunch of other like us VCs come in and, and try to invest in the market. (L9)</p> <p>there's just pressure from foreign funds like the Tiger Globals of the world, who can come in and write bigger checks. And so, I think the dynamic of how to differentiate as a VC fund and how to win has become a question that a lot of funds have had to figure out how to answer (L1)</p> <p>Underdeveloped local VC ecosystems</p>

	<p><i>I think a big problem is that if you go to Silicon Valley, there's angels, then there's seed, post-seed and Series A, B, C, D, E and so on [...] Africa doesn't have that yet. (L5)</i></p> <p><i>sS there is kind of a few well-trodden ways to do it, because the size of the VC industry is more mature. So you know, it is a better trodden path I would say...whereas over here in Africa, I mean this is all completely new. I mean just to give you an idea. When I invested, you know, back in 2011, there was no VCs here. No VCs, right...so, we had to speak about VCs in a theoretical way.[...] So today of course there are a few more VCs, not nearly enough. So I guess that's kind of something that's a little bit different from other parts of the world (L4)</i></p>
	<p>Dependence on foreign capital for exits</p> <p><i>Dependence on foreign capital</i></p> <p><i>Anytime there's a bull market, we see a lot of these global funds allocate towards emerging markets and super excited, but whenever there's like some, you know, tumultuous environment, they withdraw and they like, deploy and they, they conserve their capital, but then they focus on deploying in their home markets, US Europe, etc. Interesting. We're kind of in that era right now. (F9)</i></p> <p><i>And so a lot of that capital that is properly formed is external, is coming from the West, which is not a bad thing. But of course, if you do want to drive best in this space, for instance, smaller transactions, that external capital is generally less prepared to write small transaction (D3)</i></p> <p><i>Dearth of foreign buyers with local expertise</i></p> <p><i>For example, we once had a pharmaceutical generics deal that went extremely well, we invested in it ten times, received over 1 million in dividends every year, so it went incredibly well and it's still going well. But we can't get it sold because it has become so big that someone would have to come and then invest 500 or 600 million in a country, in a company. This can be done in Asia or in Europe. But in Africa, in Algeria, they just don't do it. That's just too big of a cluster risk. (D2)</i></p> <p><i>So I think the, you know, it's not difficult to find out the good startup, you know, figure them out, but I think the, to point why to, how to exit the startup is long and also now, you know, the startup investment is coming from like Europe or US maybe sometimes from China, but there's a few Japanese investment right now. So the Japanese, the difficulties of how much we can get more Japanese corporate into the African market that is also, you know, very hard to point right now. (F1)</i></p> <p><i>Capital flight decreases capital for late stage</i></p> <p><i>But the capital stock Series C plus in Africa is very slim. It's very, very slim. There are not a lot of a lot of funds. (F9)</i></p> <p><i>It definitely has affected the Africa VC market, because at mid-stage and large-stage a big portion of that money was coming from US firms to a lesser extent European and Chinese firms. So it means that there will be pressure on the mid-stage and late-stage in the short term. Generally the amount of VC money is also less and we are the most frontier of the market. And also I think there will be an outsized pull-back in this part of the world, again in those stages (L4)</i></p>
Aggregate dimension: Utilizing international networks (IIa)	<p>Attracting the right international investors</p> <p><i>Leverage DFIs to attract commercial LPs</i></p> <p><i>So fund one is all family offices. Okay, and then two, it's all family offices so far. Obviously DFI [...] is a huge thing for us because [...], that combination gives us DFI capital like a banner for both pools equally. So that's a very, very important transaction. Because if I close that deal, then I can go to the other DFIs plus people like Visa and all those guys.(F7)</i></p> <p><i>And again, DFIS play a critical role here. They can be catalytic (L6)</i></p> <p><i>Leverage high net worth individuals, family offices and impact investors</i></p> <p><i>In the beginning our first believers were high net worth individuals who believed in us, you know. And they also believed in the opportunity. (L4)</i></p> <p><i>So, I think we initially started raising private capital largely from family offices as well as individuals that are passionate about the continent.(F6)</i></p> <p><i>Commercial LPs have easier ESG criteria</i></p> <p><i>Yeah, so are because with [name of firm] it mostly retail investors. They don't need to see ESG reports they need, you know, they hear the stories of what the businesses are doing. They're like, Oh, you're solving real problems, you're helping</i></p>

<p>with diversity and inclusion in the workplace. And you're, you know, dealing with environmental challenges, social challenges, financial inclusion. So in fund one, it was very straightforward (F8)</p> <p>We tend to be more bottom-up. But it is clear that all of our funds have these criteria and have these frameworks. And that is of course extremely important to us, especially since we want to see what impact we achieve with what we do. That means it's probably not as important a priority for us now as it is for the DFIs, but it definitely plays a big role for us. (D5)</p> <p>Diversify LP-base to be less dependent</p> <p>Yeah, so our LP base is a diverse LP base, we have, we have some DFIs, we have some funds of funds. We have corporate LPs, we have individual LPs. And so we've basically kept the we've kept the LP base, quite diverse. [...] And we think that that that is actually quite useful, because it allows us have resilience (L6)</p> <p>There is a Fund of Funds [...]. They supported us in everything...so they support us. No matter what money we need, we get money from them. Then we have a bank [name] that supports us. Then we're just talking to [European DFI fund] at the moment. That's actually approved, we just...we have to do certain things before they come in. (L5)</p> <p>Panafrican strategy to attract DFIs</p> <p>At this stage [Southern African country]. But with the fund, if we raise the fund, which we were trying to broaden our mandate because a lot of the development finance institutions [names of DFIs], they want to, [Southern African country] is sort of slightly more developed in terms of their investment mandate. So, they want you to invest in other less developed countries. So, we sort of expanded to include other countries in sub-Saharan Africa. (L3)</p> <p>So many, many people would actually prefer a Pan-African strategy. (L5)</p>
<p>Drawing on international relationships</p>
<p>Leveraging returnee fund managers</p> <p>The managers themselves are actually largely African and with an African background. Of course, a classic example of what we like is someone from Uganda who went to America for five years, studied there, then worked at Goldman Sachs, came back and founded funds in Uganda because he knew the local conditions, but did his training in America. It's a classic thing where you say, okay, then we'll invest in it because it has both for us. But it's very important that they are on the ground, because otherwise I don't think you can make it in Africa. (D2)</p> <p>Well, I mean, number one, so in Kenya, we have the whole white founder problem. In Nigeria we have got IJGB. IJGB: I just got back. Yeah. And even myself. My background, international experience, went to good schools, worked for international brands. I know how to speak to fund bases. I know how play the game, you know, like, you can switch, you can switch the camera off, you don't know where I'm from. Let's be honest, like, you know, whoever has the money, plays the music (F7)</p> <p>Joining an established VC fund platform</p> <p>So the two general partners [names] they were looking to raise a fund. And they came across the [name of VC firm] platform of funds. And the platform was kind of like, why don't you do it with us, we'll help you raise this fund, or we'll work with you to raise this fund and be a part of this team. Yeah, so that's kind of how it got launched. (F9)</p> <p>[name of VC firm] already had a brand. They already had a platform and already had a base of LPs. So like, there was something that they could leverage from that platform and from the brand. And it's been super useful. Honestly, even as we think about like, Africa as a market maturing, having partners that have like context in more mature markets is super helpful. There is like a quite a bit of transference that we're able to leverage. (F9)</p> <p>Using international connections to fundraise</p> <p>As I had a fund of funds background, I was very cognizant of fundraising and how hard it is. So when I met my two partners, I was very cognizant to see their personal network. And we raised fund 1 entirely of the personal network. [...] I'll be honest, without my two partners and their network, I will not have the traction to sell anything. So that made it a lot easier. (F7)</p> <p>Number three, I think global networks, I think if you're just only African, you can't plug into buys and opportunities across other markets, both for fundraising goals or acquisitions, then you're going to struggle (F7)</p> <p>Joining international support communities</p> <p>But, you know, we are resourceful people, so we managed to find actually a really good collective. So it's 300 VCs and 90 LPs they basically launched something called [name of VC network for ESG]. [...] And then they started growing. So it's really fantastic, because the way it works is really like a community. So there is like a WhatsApp group and people</p>

	<p>exchange ideas and there are sub-groups. And they are developing the framework. And it is not a static exercise. Actually it's an ongoing exercise. (L4)</p> <p>And so in a way, you do have to have a network because that's where you're going to get your data from. So the more you know people, the more you can network, you know, the more intelligent market intelligence you can get. It's not kind of readily available in public spaces. I think really connecting with organizations like AVCA is important. (D3)</p> <p>Syndicate with LPs and international GPs to write larger tickets</p> <p>And part of our investment thesis was to bring our limited partners to co-invest with us so that we could lead a seed round. So when we started investing two years ago, the seed round size was smaller, it has started to grow bigger during the life of fund one. (F8)</p> <p>And we co-invested with DFI and with an investment structure that was part of our media network and that's focused on education. So yeah, we're super happy to co-invest and actually because we are long term, we can be either an option for co-investors to facilitate their own exits. If at some point they want to exit, we can be there too to buy their shares or we can exit at the same time as them. And so, you also have a facilitator for them. So yeah, we were very happy to co-invest. (F2)</p> <p>Leverage LPs' skills and networks</p> <p>And then we have LPs that are super helpful in terms of like connecting our companies to different corporates as well. (F9)</p> <p>They are almost especially at an early-stage VCs because there are more and more VCs that are close to a syndicate where you have a lot of, you know, small investors or a lot of LPs in some way. And those LPs are also acting as sort of Channels to source deals. If you take it to one of the most active ones right now in Africa [name], they are they have hundreds of LPs that are also acting as quite active actors into the ecosystem and are sharing deals with them. So that's also another approach. (A1)</p>
	<p>Leveraging LP connections to prepare exit</p> <p>Invest in technology complementing corporate LPs</p> <p>if you could of course say that this can be quite interesting in Africa, we are the classic VC who get involved in digital topics at an early stage and that is basically not part of our investment thesis. Of course, there are key areas that are particularly relevant to us. This is based somewhat on the taxonomy of [name of corporate group] as a group. (D5)</p> <p>So we are a [East Asian country] venture capital focused on African startups. So, yeah, maybe we invest into the seed to early-stage startup. The ticket is a 50K to 500K is depend on the stage in the growth. Yeah, and then so when the purpose is we have a lot of [East Asian country] corporate and then they want to make a business in African market but they haven't any knowledge in any parts of that right now and the Africa is are very keen to connect with the technology. So that is the reason why [East Asian country] corporate want to have a partnership with local startup. (F1)</p> <p>Communicate concrete exit plans to LPs</p> <p>We spent the month of June, myself and the two general partners in Europe meeting our existing LPs. And, you know, that was music to their ears in terms of looking at a fund that invests in the same tech company in different African geographies with the intention to combine these companies into one market leader and for Africa. (F8)</p> <p>Because we're like this is the biggest barrier to for international investors investing in African ventures the like, crazy exit, right? In private equity. It was rich a long time ago and it's been really crappy for a long time. So number one, you know, value proposition is to demonstrate liquidity. So you know, although again, we're only a two year old fund, we have our Investment Committee is becoming the exit committee and we have a bunch of independent exit committee members [...] And you know, ruthless about how are we getting you know, are lined up for these exits. (F8)</p> <p>Leverage co-investors in portfolio companies</p> <p>So in all our portfolios, we have companies that ultimately will buy this company if it succeeds. And that's the fundamental difference. We're building fast growing, rapidly growing FinTech companies, that other VCs globally, well either can themselves buy it or companies in their portfolio can buy, that's different. (F7)</p> <p>We have a firm in there, which is one of the biggest buy now pay later businesses in the world, and we have Cross River Bank, which is the guy that funds the company that funds all the buy now pay later companies in the world. So having people like that in your cap table, on your advisory board, it's completely different to having some Lebanese or Indian guy in your cap table from Nigeria or Kenya, it's just different. (F7)</p>

	Successful target selection
Aggregate dimension: Operational responses to local institutions (IIb)	<p>Avoiding overvaluations</p> <p>Many people ask themselves how can you be a VC in Africa without fintech? Simply because there is a lot of tech that works, but getting the business model right, all the compliance that you have to do, is not easy. And we are not fintech experts and we have seen a hell of a lot of companies that get really high valuations. (L5)</p> <p>So our fund, I mean, we're very rigorous about ensuring that the value if we invest at a higher valuation, that is based on genuine revenue. (F8)</p> <p>Engaging in thorough and fast due diligence</p> <p>And the requirements for due diligence has been intense. It's kind of like a Chinese pace like, Americans are like, what we couldn't work that fast. [...] Our due diligence process has been streamlined to six to eight weeks (F8)</p> <p>One of the reasons why I wanted to pivot is because as the market matured, you know, the really top founders they would not entertain any more like 3-4 months to close a deal, which was very respectable time frame for like an angel investing network. You know and the quality of talent now going into the sector, these are now very, very accomplished people. And there not going to like..they expect to speak to people that are professionals. So that means the conversations are quicker. They want to move fast. You want to move fast. So we need to move fast. We have like a technology platform, a CRM system, that tells exactly what our average is. So our average for closing a deal at the moment is about 5 weeks. (L4)</p> <p>Investing in teams with local roots</p> <p>We're here to empower people that live on the continent. (L4)</p> <p>And we actually see it the other way also. Right. So last year has been easy money. Easy money simply because capital has been cheap. So, people have found it easy to raise money and [...] capital has flown to Africa. But once the it gets more challenging. Right. Local founders are a lot more prudent. Right. They're a lot more operationally involved in the business and are able to appreciate the real problems which may come later. (F4)</p> <p>Registering portfolio companies in foreign jurisdictions</p> <p>Most of the investments we make are into companies that have a holding company in Delaware. And a small number of our investee companies have their holding company in the Netherlands, the UK, Germany, and Singapore. So, you know, part of our investment thesis is that we want to have companies where the IP is protected in, you know, completely safe jurisdictions where international investors, you know, don't feel any friction. (F8)</p> <p>It was just like we don't know how to invest outside of [Western European country]. We're not going to invest outside of [Western European country]. And I think nowadays, the reason why it might be hard for some of them. And I understand it a little bit is unless the company is incorporated in in Europe and in the US, it's tough for us to get the confidence of a I'm sending a million dollar in Nairobi or in Lagos. (F5)</p> <p>Investing in B2B models</p> <p>For us, I like b2b. I like companies with good unit economics and positive gear that means every penny of revenue tends to go over to the bottom. So I don't need... I don't want huge variable costs, which is why I prefer technology companies (F7)</p> <p>So we don't believe in B2C. For the simple reason that there are of course, especially in Africa, there are a lot of C, there are a lot of consumers. [...] And when you ultimately have to do the segmentation, the market is far too small. The second thing is that most of these companies that do full B2C usually do a lot of funding. And the funds in Africa are too small to fully finance this. The B2C companies in Africa that got money all got money from America. (L5)</p> <p>Focusing on large markets</p> <p>The reason I moved to Fintech is all my companies are now in multiple markets, so start in one and but are now in seven. My last investment is launching in eight countries at ones. So FinTech can scale okay, but I needed you to start in Nigeria, Kenya, Egypt first? I'm not going to go to Chad. Start in a big market, demonstrate you can do this. Deliver that big market. Then use that capital and positive cash flow that you generate to expand. (F7)</p>

	<p>So there is a natural inclination to go after the big markets and say, Okay, well, you know, if expansion is hard, let's just go after the really big market so that they don't have to expand or they don't have to expand as urgently. And I'm not going to pretend that like most people's deal flow, including ours is not from the major markets. It's that ecosystem is a lot more vibrant, because more capital has been fed into it. So there's a lot more pipelines sort of coming out and it's like a cycle right. (F9)</p>
	<p>Helping portfolio companies deal with operational challenges</p>
	<p>Reducing foreign exchange risk</p>
	<p>Be multi country so that the risk is not in one country exclusively. But Dollar revenues are definitely very, very key. (L6)</p>
	<p>But some companies might have a significant portion of export, so they might be holding a certain percentage of hard currency. How do you then adjust your pricing for that specific company from a company, let's say that's purely doing local currency.(A5)</p>
	<p>Supporting international expansion</p>
	<p>And we've sort of assisted some of our portfolio companies to date, like, navigate their expansion strategies, and it's something we're trying to get to more proactively do. (F9)</p>
	<p>What we do is for every dollar that we provide in investment capital, we provide another dollar equivalent in post investment support, including you know, strategic advice, support on expanding from the home country to another African market or other international market (F8)</p>
	<p>Supporting follow-on funding</p>
	<p>So we you know, have a lot of systems in place to help scale and support our companies. And our objective when we make a seed investment is to help our companies raise their series A within 12 to 18 months, you know, and have helped them to secure most of them are business to business investments. (F8)</p>
	<p>Sure. So, the value-added services we offer is we have operating partners [...]. And the only one was really relevant is the series A financing. (F5)</p>
	<p>Helping with regulatory requirements</p>
	<p>We concentrate our efforts, you know, outside of the portfolio investment management on regulatory engagement for our FinTech companies. primarily in Nigeria, because, you know, the Central Bank of Nigeria has been the biggest problem for us in terms of kind of arbitrary rulings in two times in the life of the fund (F8)</p>
	<p>We help with the regulations [...] I mean, I think if I would love to be known for one thing, it is that we get our hands dirty. And that's why we have to specialize because I'm not smart enough to do this across sectors. (F7)</p>
	<p>Helping with talent acquisition</p>
	<p>We have [name of subsidiary], which focuses on African talents as well. So, if you have portfolio companies that because many of them were seen as the expand one of the areas that they have issues with is hiring so they, like to hire like experts to help build out their business is quite crucial. It's really in the startup community, right? So, within our network we have an initiative for good, which is harnessing the African talent.(L2)</p>
	<p>This is also a big issue for us, how we select the funds, that we say okay, everyone can invest, but not everyone can create value. That means, what do you really do and that is always important with funds that they are really on the ground, so to speak, that they are in their markets, that they are local or at least have connections. And then it's exactly that they help in the search for talent, that they set up a sensible finance department, which is almost always the first step. (D2)</p>
	<p>Helping with customer acquisition</p>
	<p>So like, all our companies sell to the same type of customers. So any customer they have, I have that relationship, they can sell to each other, we can package them together and bring them in as one product. (F7)</p>
	<p>So we help them secure enterprise customers in banking, insurance, telecoms, sometimes mining, you know, so they have these large chunky contracts. (F8)</p>
	<p>Building portfolio company networks</p>
	<p>So we Yeah, we're really encouraging our companies, you know, to learn from each other. (F8)</p>
	<p>A second way that this report is implemented is the access to our network as we have this family which has built one of the biggest B2C platforms in the world. So basically, if one of our companies has an issue, it's very likely that another</p>

	company within the ecosystem has had the same issue at some point. And it's very valuable for the entrepreneurs to be able to get in contact with them too. (F2)
	Rational for exit strategies given capital market institutions
Aggregate dimension: Institutional bridging (IIC)	<p>Exit through horizontal merger</p> <p>So like, Yeah, from that perspective, I think that that's, I think that that's coming out I do I do foresee more m&a activity as actually a way to expand. Like, we see that it's super difficult to move from one country to another or across borders or anything. So we're seeing a lot of companies trying to buy. Now this is obviously at the earlier stages. And usually it's not the consideration is not super high. But it is nice to kind of start to see that level of consolidation actually. (F9)</p> <p>My expectation is that there will be an increasing number of horizontal trade sales, tech companies acquiring other tech companies, both global tech companies, acquiring African tech companies and African tech companies acquiring each other. (F8)</p> <p>Exciting at later funding stages or secondary market</p> <p>But if I come in pre-seed and seed, even if I was a US company, I doubt I would stay in from pre-seed all the way to IPO. So somebody will come in, buy a big stake, a strategic stake, and then we are out. (F7)</p> <p>Yeah, so we did do one exit and it was kind of a, I guess a trade sale. So we were, it was part of a series C. [...] so series C is a good place to exit or C or even a series B (D3)</p> <p>Investing with exit in mind from the start</p> <p>So we call this exit-centric business building. So our company philosophy is exit-centric business building. So when we invest a fund, we think about where the exit is. All the time, with every big strategic decision we make, we think about what will help the exit. And we basically know what a company has to look like in order to get a good exit and we make sure that it is positioned accordingly. (L5)</p> <p>We have a conversation from day one, before we put one Dollar. Look we are investing to exit. SO if you have this mentality which is you know this is my baby, like I am never going to sell it, then that's fine, but then don't ask for outside money. (L4)</p>
	Signal and embody ESG orientation
	<p>Desire to create impact on the continent</p> <p>Well, and so that's why we made that investment. We said, you know, if we're going to change the lives of people like we're trying to do in Nigeria through loans, this could be something that changes the lives of not just farmers in Mali, but now they're opening in Uganda, Ivory Coast. And so that's why we made that investment (F5)</p> <p>We found that a lot of investors think that you got to take a discount for impact and investors will say, oh, what is the discount? We've got to make impact.[...] If you find the right reason to do something [...] well, my view is, is that you'll actually do better from a financial point of view in the longer term, you know, in the medium to longer term, because you're solving a real problem and you solve it as a purpose (L3)</p> <p>Signal and embody ESG orientation</p> <p>And finally, we also look at the impact through the SDG 17, the 17 SDG lenses to understand what kind of impact this particular startup is addressing, how that impact is measured and how it is being reported (G1).</p> <p>All of the ventures that we support are have an inclusiveness component. It may be that the beneficiaries are smaller. It could be people with informal jobs and so on. But it's always, always a component. (A1)</p> <p>Signal ESG focus</p> <p>Yeah, at least a willingness to engage the topic. And I mean, when we started talking to DFIs, we didn't have much of ESG processes in place. Um, but we definitely showed the willingness to do it. And that has definitely helped. (L6)</p> <p>I think there's no question that a lot of the capital being attracted to the continent comes with an SDG attachment at the moment. And like I just said, with the [fund name] fund, we are unilaterally focused on SDG three, which is extending lives and improving lives. And a lot of the government kind of support for venture in Africa tends to come with the link to climate. So, we would fund our partner in [name of project] just started the climate specific fund for Africa (F)</p>
	Signaling conformity with global financial standards

	<p><i>Communicate concrete exit plans with LPs</i></p> <p><i>So, you know, it's been great. We spent the month of June, myself and the two general partners in Europe meeting our existing LPs. And, you know, that was music to their ears in terms of looking at a fund that invests in the same tech company in different African geographies with the intention to combine these companies into one market leader and for Africa (L8)</i></p> <p><i>Because we're like this is the biggest barrier to for international investors investing in African venture the like, crazy exit, right [...]. So you know, although again, we're only a two year old fund we have our Investment Committee is becoming the exit committee. (F8)</i></p> <p><i>Focusing on large markets</i></p> <p><i>Yeah, just the scale and size of these of these regions makes sense. And as you know, in venture you're not, it's not a charity, where you're trying to make a return and so the size of the market, that does help. (L6)</i></p> <p><i>So that's why I think there are more opportunities in larger markets like Nigeria or Kenya because then in one single country with a given regulatory framework and so forth, you can reach a lot of customers. Now, Kenya, I think Kenya and Nigeria are markets with quite a good entrepreneurship mindset, which is not always the case though. They are also markets very supportive to the private sector, which is not always the case either or in some of the countries. (D4)</i></p> <p><i>Leverage expat-led firms to attract LPs</i></p> <p><i>We definitely see a place for expat founders because they work with us really well in educating the international investor base, about the reality of life on the ground in Africa. And I have a really good example of that, having stopped in for my first time ever in Vienna, and met with a Viennese private banker, who only agreed to have the meeting at [name of VC firm] because his son left the privilege of this private bank to set up a FinTech in Kenya that had just expanded to Cape Town. And so one of our GPs had been incredibly helpful in this FinTech founders life and helping them to expand and raise investment capital. So you know, Papa's, like, why did you do that? And we're like, you know, we're all about growing the ecosystem. And, you know, there's a lot of money to be made there, as well as immediate impact. And as you can see, with your son choosing to be there. It's, you know, a great place for global business, people and technologists to have meaningful and successful, you know, commercially successful careers. So, you know, we're very happy with that (F8)</i></p> <p><i>As a very early-stage investor, I think 90% of the diligence goes at whether the founder will be able to raise more money or not. Right. Because business model quite often or not like it'll probably be for the next round will never change. Right. So, you all are looking whether the founder is fundable or not. So, it's quite possible that they see it as a risk that, you know, and I have seen some of the businesses, they see serious, crazy amount of money in Kenya, which I would never be able to justify that, other than the only reason being is that, you know, the comfort that this founder will be able to raise more money. So that's also a big de-risking strategy for people. (F4)</i></p> <p><i>Registering firms in foreign jurisdictions</i></p> <p><i>Most of the investments we make are into companies that have a holding company in Delaware. And a small number of our investee companies have their holding company in the Netherlands, the UK, Germany, and Singapore. So, you know, part of our investment thesis is that we want to have companies where the IP is protected in, you know, completely safe jurisdictions where international investors, you know, don't feel any friction. (F8)</i></p> <p><i>Right. I think that's also why most of our startups are founded in Delaware as a holding company. And then the holding company owns subsidiaries and whatever country they may operate, which I think also makes it easier for investors. Because you don't need to understand, you know, especially if you have many, many if you operating in many African countries. Of course, it's nice to have a holding structure per se, but also it simplifies the investors need to understand what's the Nigerian legislation, right? Like what's the Kenyan legislation like and stuff like that. So, which I think has served our founders well in terms of raising both local as well as international capital. (F6)</i></p> <p><i>Taking on a role model function</i></p> <p><i>In China, it was very hard to raise fund, until wasn't. We need to deliver returns and then if you deliver returns, it won't be hard to fundraise. I guarantee you, if I can get fund 2 to be a 6x fund, I won't still have to raise again. (F7)</i></p>
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	<p>We had our first fund, we had seven investments and so we were lucky with the seven in that all 7 companies still exist. We didn't make any money with two. Made a little money on one, but made a lot of money on the other 4. We got a 55% IRR for our investor and are, to our knowledge, the only VC fund in Africa that did the whole circle. So fundraising, invest and realize, realized the whole fund and made real money for the investors. And so we always say that we have proven that VC can work in Africa. (L5)</p> <p>Headquartered in foreign jurisdiction</p> <p>That's why we're now set up in Jersey. It's great, it costs us so much money to do that. But as I said, compliance. (L5)</p> <p>So, when we started, we said that it would be important for us to take the first step and find a fund that would support European compliance, European legal security, if you like, these administrative things that are somehow relevant for us as a large investor, where there could also be reputational risks (D5)</p> <p>Tapping into local structures</p> <p>Focus on teams with local roots</p> <p>From our perspective, we are super focused on investing in people that are focused on Africa long term and have a commitment to building creating and working in Africa long term. And so that includes like local founders, but also includes some founders that might be not, not ethnically from the region might have spent, like a significant amount of time they're either working there for, you know, over a decade or like have, like, significant roots. And nested in there already (F9)</p> <p>What type of tweaks you need to do locally to kind of win in Africa. Like we have a company coming out and doing influencer marketing. And the way they basically have done this in Africa is clearly tailored to the Africa situation and compared to influencer marketing companies in the Western world. So, I don't know why anybody would comment on that, but it's probably a bit of both. But I think that local anchoring can be a very important competitive advantage. (F6)</p> <p>Mobilizing global market knowledge</p> <p>I remember this one of our fellow funds that we're working quite closely with [...] They were studying where is Africa relative to, for example, Asia. And so, the boom that's happened there with investments. I mean, if you look at Singapore, the ecosystem is so vibrant, but where is Africa relative to some of the Asian economies? And I think they were concluding, although I don't have all the details of their analysis, that we are sort five or seven years behind. So, like in a five-to-seven-year time frame, they are expecting us to see a much more vibrant ecosystem. And from that point of view, investing now as a venture builder with a ten-year fund seems brilliant. (F6)</p> <p>And that's why we thought there were a lot of talents from India that we can replicate in other countries because. The problems are similar. There is an inefficient public distribution system. There are limited resources available with the government. Private sector can play important role and there is a strong entrepreneurial activity. So those are some of the parallels that you saw between India and especially East and West Africa. (F4)</p> <p>Building local presence</p> <p>Having local presence and local knowledge is unparalleled, right. And I think with a lot of people, you know, I think if you see those, what we call the fly model, you know, everyone is sitting in London, New York, Dubai, and they are investing in Africa it's not going to work. (A5)</p> <p>I think it's important to have a local team on the ground because initially, we used to have the whole fly-in fly-out from Brussels, London, you know, whatever. Fly-in fly-out model that usually doesn't work. So it's important to have local content on the ground because, you know, in terms of, I mean, even in terms of due diligence, there's so much informal due diligence that we go through. (L7)</p> <p>Cultivating partnerships with local investors</p> <p>I do think there's just a lot of opportunity but it does take investors that are willing to spend the time to establish the right partnerships. And who are open to understanding and learning how things are done. But I think it's really going to be around partnerships. And you cannot parachute in and parachute out. And we were doing a trip to Nigeria where we're trying to expand our investing in Nigeria. But to do that effectively, we're going to have to find some Nigerian partners as we can't do it from Kenya. (D3)</p>
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<p><i>I would say that, above all, the funds are well networked, that they know, okay, this is a good company and that they also, because that's often the case, that's how investments are made in funds.[...] It is important that the fund is well networked and that it has relationships in order to put people in who work well with the existing management. (D1)</i></p> <p><i>Co-invest with local GPs</i></p> <p><i>A number of international VCs make that actually the requirements [...] they co-invest and they only do it when a local investor is involved.[...]And they will only invest if there is a local investor. And that's the case for a number of VCs. Sometimes it can be a local angel investor. Sometimes it can be an international investor that has a strong focus on Africa. (A1)</i></p> <p><i>For non-Africans, Africa is a risky market. And that is why we do not, under any circumstances, encourage any international investors to invest in Africa without local investors because it is high risk and if you don't have a local presence, you will lose your money. (G1)</i></p> <p><i>Focusing on returnee entrepreneurs</i></p> <p><i>I was referring to, as well as also bringing diaspora back to the continent that might want to build something but might need a landing pad for how to get going. And since [name of project] has this community now of 150 entrepreneurs that have been through our cohort over the past two years, it's a very nice environment for people to network and get to know each other and help each other as founders and entrepreneurs. So that's a little bit the model we have. (F6)</i></p> <p><i>Ideally, we would invest primarily in companies that are founded by local entrepreneurs. And there are more and more entrepreneurs who are either did their studies locally or who did their studies in Europe or in the US and Sweden who come back to the continent kind of repat founders. So, but yeah, there are very diverse types of backgrounds from local studies to international studies to, you know. (F2)</i></p>	<p>Leveraging local embeddedness</p>
<p><i>Focus on teams with local roots</i></p> <p><i>So our mission is to actually empower Africans, and we don't invest in tourists. Full stop. (L4)</i></p> <p><i>And I think as [name of interviewee 1], like, we've shown that not only through the team that they've built, like internally as investors, but also be the founders that that we select. Even if it's not, you know, the founder that gets all the buzz. I think we stay true to our values of investing in African local talent. And so, I don't know. I think that's something we pride ourselves on. And it shows through the portfolio that people select. (L1)</i></p> <p><i>Understanding local market specifics</i></p> <p><i>Like, for example, we, many of the businesses in Africa tend to carry two sets of accounts. One for the taxman and then the real one. So, if an investor direct from Europe or the US comes and hears something like that, you know, they'll be "Oh, good Lord, there's so much, you know, dishonesty, lack of integrity and all that" while for us we know that for a fact that, you know, we don't, I don't even ask the entrepreneur like when they give me a set of what is it that counts, I need to know, like, so are these for the taxman? Are these for? I want the real ones, right? (L7)</i></p> <p><i>You have to understand the markets, right? So, some copy and paste solutions may not work. Look at something that worked in the US or in Europe may not necessarily work in Nigeria or may not work as it is without some adjustments or some tweaks being made. So, on the sunny context, understanding the markets, that is that's to me is the most important factor (L1)</i></p> <p><i>Supporting foreign investors with due diligence</i></p> <p><i>So those are things that we actively try to share with people within our network and anyone that openly communicates that they're not familiar with what's going on in Africa. So whatever questions it is that you may have, what opens the conversations we share materials, research reports that we've done within the system and also share insights based on what we have within [company name] as well. So, I think that we that has been able to help reduce the uncertainty around Africa. (L2)</i></p> <p><i>Sure. Yes. Yes. So, we coming to help do some level of due diligence. Worked at the start of the thing, the market rookie or have done some level of due diligence on the founders and secured and you know depending on also we will react with us which is to co-invest as well as help with due diligence, [...] you can you can proceed to invest.(L1)</i></p> <p><i>Strategic alliances with other local GPs</i></p> <p><i>So, what he mostly focuses on is building relationships within the ecosystem so that we're like founders, angels, investors. So, he is really on the ground and knows a lot of founders that are building here. And so, we have a nest of people that share opportunities with us. Right. So that's useful as well. (L2)</i></p>	

	<p>We also have a lot of strategic alliances with co-investors. So we've built a really strong alliance across the continent. (L4)</p>
	<p>Exit through foreign capital markets</p> <p><i>Exit via foreign acquisition</i></p> <p>I think over the next few years, as companies start to get to more mature places like that, it'll, it'll start to get interesting for, you know, international corporates that are looking to get exposure to this market and other kinds of global players. (F9)</p> <p>So actually it's something we consider when the right opportunity comes along. For us it's a bit special because we are of course somehow a corporate VC, but primarily we are a VC player. And accordingly, we would not say that it has to be a strategically highly relevant target [...]. That is not our approach, but rather it would be our approach to actually say here is a topic that is interesting to us and that is not far away from our area of interest, where we see potential, and might also see synergies. (D5)</p> <p><i>Exit via foreign public markets</i></p> <p>So what I think will happen more often is what we are now seeing: companies that are active in Africa are doing an IPO on the Nasdaq, for example, or are at least considering it. I can imagine that an IPO on another foreign stock exchange is definitely an exit channel (D5)</p> <p>We are seeing more founders becoming more excited to list in foreign markets like New York or London. (L2)</p>
regate dimension: Institutional recontextualization (Id)	<p>Changing narratives and perceptions about Africa</p> <p><i>Understanding emerging market development</i></p> <p>So for me, look, I've been doing this story since, emerging markets since 2010. That's when I joined [large asset manager]. I just saw... I spent time in China. I spent time in India, in the Middle East and I just saw all the emerging markets and also Latin America. And I just saw the same story play out, it's demographics, it's urbanization, it's technology leapfrogging and I always knew that when I would come to Africa sooner or later, I just didn't know if I would be too early or too late. [...]. So I knew the story would play out in Africa. (F7)</p> <p>Maybe the first question, how are we geographically positioned. You could basically say that China was the first big wave, our fund was very successful, invested capital, and also made one or two really very successful exits. The second wave, if you will, is India. [...] From our point of view, the third wave is Southeast Asia, where it is also driven by the fact that on the one hand there is of course strong regional integration and more and more cooperation between the Southeast Asian states and ASEAN and what all the different FTAs are called there, but one has ever stronger networking. And of course certain spillover effects arise between highly developed countries like Singapore, but also countries that are incredibly interesting as a sales market but are still a bit behind in terms of development. And the next big wave we see is Africa. (D5)</p> <p><i>Selling the Africa story to investors</i></p> <p>Yeah. So basically, when we speak to our investors and say, Hey look, smart guys we've got a track record in other markets, Africa's gotta work sooner or later [...] you didn't do China? Don't wait. And I will say that if you wait till it's too late, then it's too late. So a lot of our capital is it's 20 million. We don't want to waste it. But it's a tiny, tiny, tiny percentage of what they have. (F7)</p> <p>There's a lot of inbuilt trust when you're talking about LPs and fundraising, like people, people are like, okay, you don't have to work in Africa. Why are you doing it? I'm like, because there's incredible commercial upside, as well as a huge and growing talent pool, and the obvious ability to make an immediate impact, you know, in the quality of life, the quality of jobs, changing perceptions about what what's really happening on the continent, and obviously, building these collaborations cross border. (F8)</p> <p><i>Differentiated perspective of Africa</i></p> <p>Yeah, the first misconception is that Africa is a singularity. There could be nothing further from the truth. There are 55 different jurisdictions. There are eight regional economic communities. And if you look at the cultural overheads of Africa's colonial past, we then have Anglophone Africa, which is economically and socially fundamentally different to Francophone Africa, which again is economically and socially different to Arabian Africa, which is North Africa. These three are distinctively different to Southern Africa, which is closer to the West. So if you understand that, then you understand that talking about Africa within that context is a misnomer. (G1)</p> <p>You know, if you look at VC in Africa, it's about I think the first thing is understanding that Africa is actually a collection of countries that are vastly different. [...] And I think a lot of people get that wrong and they make assumptions</p>

	<p>around regionality or Africa as a whole, which actually is completely makes no sense. And this is about basing in Africa generally. And then if you accept that, then it depends what you're looking at from an investment perspective. But if you want to do venture capital, it's just to be as specific as possible (L3)</p>
	<p>Actively shaping institutions</p>
	<p><i>Adapting structures to local market</i></p> <p><i>This idea of unicorns is also a little bit of a falsehood, right? Again, this imputation of Western models, without thinking of how does it apply to the local context is a huge issue. But yes, we find that there's quite a bit of interest or like tech,tech,tech, I'm like, you see, by time people get to use tech the way people use tech in the Western world, you have to be at a certain level of development, right? So when everybody's coming chasing for tech, I'm like, it's, the continent is at a different point. You can find digitally enabled businesses, but you cannot think about the tech multiples, the way you're going to think of an Uber, whatever, Facebook, what have you (A5)</i></p> <p><i>So, one of the arguments we have been making for a long time is that typical fund structures don't work in Africa, so they always struggle. Even in India, ten-year funds are always almost always going to an extension. They always go into the twelve-year period and you need more time. Even then you are not fully able to exit. [...] So, in Africa, we have tried to argue a lot that we should be allowed to do a 12-15-year fund (F4)</i></p> <p><i>Working with regulators to improve markets</i></p> <p><i>Yeah, it's not much we can do we work with lawyers and the African Venture Capital Association, and the other VC funds in Nigeria, you know, to have a unified voice, with government. [...] So there's, there's some thinking about how do we upskill and provide peer to peer network connectivity for regulators, especially around blockchain?(F8)</i></p> <p><i>There is still a lot of work to be done there. We are working actually with governments, and we try to help them to think about these things. (L4)</i></p> <p><i>Actively building ecosystem</i></p> <p><i>We do a lot of community development work across the ecosystem, and so we get quite a bit of inbound (L6)</i></p> <p><i>So we are very, very active in this ecosystem. We are on the [country name] VC Association Board. We've been around for years...we founded the first angel investment group here in [country name]. We are, I would say, one of the most active ecosystem builders here in [country name]. (L5)</i></p> <p><i>Building local know-how</i></p> <p><i>Well you have to build it yourself. You have to do it yourself. If you cry about it, it's not going to bring the bread on the table. Talent...I am lucky because when I was a lawyer after starting my career in London, I came back to a family firm that has been around for 110 years. So we always built talent. We would get people from university, we would spend the money and the time to train them. And as a result of that we've been around for a 110 years. (L5)</i></p> <p><i>And then I would say just like the talent pool. I think that you have to be open to people developing talent, having more self-taught talent. It's just not the same as, you know, having all these people coming from Stanford in the US, which, you know, is also not the best practice. But this is a more of a reality. There's a lot more. You have to be able to see that just because they've trained differently or are building their talent from scratch doesn't mean that it's not, you know, Great (L1)</i></p>
	<p>Exploiting institutional challenges</p>

	<p><i>Focus on companies that solve local problems</i></p> <p><i>So we said, let's double down on energy and fintech because we believe if you keep the money moving and the lights on, you're solving the problems. So we're now an energy FinTech focused fund. (F7)</i></p> <p><i>Because we because we think non-consumption is the most is the most probably dominant thing. In in the region, in folks are low income, and not able to buy the things that they need. And we think that that one way to flip that around is to view that as an opportunity, as opposed to as opposed to viewing it as a as a problem. And so to that extent, we view the this non consumption as an opportunity, one to invest in folks that are that are capturing that opportunity and solving for it. (L6)</i></p> <p><i>Go into markets that are underdeveloped to lower competition</i></p> <p><i>And from our perspective, while we recognize the value of the big markets and we've invested in the major markets, we also think that there's a ton of opportunity that's untapped in places where people don't go. So what's happening now with the major markets as well, is that because that's where you get funding, and that's where other races are, like super focused, you find a bunch of different companies during the exact same thing in the exact same markets. And it's really, really difficult. They're actively competing. (F9)</i></p> <p><i>And, you know, one thing I've seen, too, is people don't like French speaking markets because, you know, a French speaking market, you get a lot of the French work labor culture, which is not the best labor culture. I mean, not the most business-friendly labor culture, let's put it this way. And investors tend to like English speaking African countries more because you have more of the English labor culture, which is more entrepreneur friendly. But it's created such a difference that I think there are opportunities, mispriced opportunities in French speaking market, which is for the same business, same country, same market size. You'll pay half the price in a French speaking country that you'd pay in an English-speaking country. And so that's why we've done our or two most recent investment are in French speaking African countries. (F5)</i></p> <p><i>Leverage market correction as opportunity</i></p> <p><i>One of the best things that happened actually is that because of the correction a lot of the hot money, the tourist money has left. You know like the kind of Tiger Capital. And what it means is actually there's a much bigger opportunity for the local GPs to work together to build the companies in a better way.(L4)</i></p> <p><i>Having said that, I warned you that I was an optimist in the beginning of the call. I think it is actually a very positive thing for the local GPs, especially those that already have money, because a lot of the dumb money has gone out. Because that was the excess money. It is being sucked out. So actually now we can have a much more sustainable and balanced conversation at the early stage (L4)</i></p>
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Statement regarding authors' contribution in studies with co-authors

PhD candidate: Kabengele, Christian

Co-author: Roessling, Jakob

Title of study: Evaluating the Effect of Mobile Money on Firm Productivity in Africa: A Comparison of the Formal and Informal Sectors¹

Relative contribution of authors:

Christian Kabengele: 80%

Jakob Roessling: 20%

The PhD candidate, Christian Kabengele, contributed to the study as stated below:

- Idea generation and formulation of overarching research goals and aims
- Majority of the literature research
- Majority of the methodological development
- Suitable data identification, data retrieval and parts of data preparation
- The majority of the data analysis (regression, robustness checks and QCA)
- Writing the largest fraction of the draft (especially the introduction, most of the literature review, most of the findings, and the discussion)
- Visualization and presentation of data in published work
- Submission, correspondence, and organization of the entire review process

The co-author Jakob Roessling supported the PhD candidate with data preparation and literature research. He also conducted a part of the research analysis (i.e., parts of the regression on informal firms and respective robustness checks). He also wrote parts of the literature review and findings section.

Düsseldorf, October 24, 2022



Jakob Roessling

¹ Published as: Kabengele, C., & Roessling, J. (2022). Evaluating the Effect of Mobile Money on Firm Productivity in Africa: A Comparison of the Formal and Informal Sectors. *Journal of Developmental Entrepreneurship* 27(2) <https://doi.org/10.1142/S1084946722500091>

Statement regarding authors' contribution in studies with co-authors

PhD candidate: Kabengele, Christian

Co-author: Hahn, Rüdiger

Title of study: Institutional and Firm-level Factors for Mobile Money Adoption in Emerging Markets—A Configurational Analysis¹

Relative contribution of authors:

Christian Kabengele: 80%

Rüdiger Hahn: 20%

The PhD candidate, Christian Kabengele, contributed to the study as stated below:

- Idea generation and formulation of overarching research goals and aims
- Development of methodology
- Conducting research process: literature research, theory development, data retrieval, data preparation, data analysis, robustness tests
- Data interpretation and writing of the original draft
- Visualization and presentation of data in published work

The co-author Rüdiger Hahn supported the PhD candidate in the idea generation phase and thinking about avenues for contribution to the scholarly discourse. He validated the research outputs, critically reviewed and revised several versions of the paper, and actively contributed to the entire publication and scholarly review process. He provided oversight and mentorship to the PhD candidate throughout the entire research process.

Düsseldorf, October 19, 2023



Rüdiger Hahn

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Statement regarding authors' contribution in studies with co-authors

PhD candidate: Kabengele, Christian

Co-author: Ostertag, Felix; Eijdenberg, Emiel; Waldner, Carolin

Title of study: Cutting a Pathway Through the Jungle: Social Entrepreneurs' Navigation in Complex Institutional Environments

Relative contribution of authors:

Christian Kabengele: 25%

Felix Ostertag, Emiel Eijdenberg, Carolin Waldner: 75%

The PhD candidate, Christian Kabengele, contributed to the study as stated below:

- Participation in idea generation and formulation of overarching research goals and aims
- Co-creation and conception of interview guide
- Participation in data preparation and transcription
- Participation in the literature research
- Participation in the iterative data analysis (abductive analysis, discussion, adoption)
- Writing parts of the draft (parts of the literature review, introduction, and discussion)
- Presentation and discussion of findings at academic conference

The co-authors Felix Ostertag, Emiel Eijdenberg and Carolin Waldner were equally involved. They also contributed to data preparation, analysis, conception of the research idea, literature review, and writing of the manuscript. They were responsible for most of the data collection, coordination and correspondence during the review process.

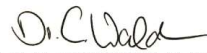
Düsseldorf, June 22, 2023



Felix Ostertag



Emiel Eijdenberg



Carolin Waldner

Statement regarding authors' contribution in studies with co-authors

PhD candidate: Kabengele, Christian

Co-author: Hahn, Rüdiger

Title of study: Venture Capital Funding in the African Context - A Mixed Method Study of Evolving Ecosystems and Financial Discrimination

Relative contribution of authors:

Christian Kabengele: 80%

Rüdiger Hahn: 20%

The PhD candidate, Christian Kabengele, contributed to the study as stated below:

- Idea generation and formulation of overarching research goals and aims
- Development and design of mixed-method approach
- Conducting entire research process: Literature research, theory development, data collection (interviews), data preparation (interview transcription and/or translation), data analysis
- Data interpretation and writing the original draft
- Visualization and presentation of data in published work
- Multiple conference preparations

The co-author Rüdiger Hahn supported the PhD candidate in the idea generation phase and thinking about avenues for contribution to the scholarly discourse. He validated the research outputs, critically reviewed and revised several versions of the paper, and actively contributed to the entire publication and scholarly review process. He provided oversight and mentorship to the PhD candidate throughout the entire research process.

Düsseldorf, October 19, 2023



Rüdiger Hahn

Eidesstattliche Versicherung

Ich, Herr ~~Titel~~ Christian Kabengele, versichere an Eides statt, dass die vorliegende Dissertation von mir selbstständig und ohne unzulässige fremde Hilfe unter Beachtung der „Grundsätze zur Sicherung guter wissenschaftlicher Praxis an der Heinrich-Heine-Universität Düsseldorf“ erstellt worden ist.

Düsseldorf, der 3. Dezember 2023



Unterschrift