

Strategic Entrepreneurship in the Informal Economy

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STRATEGIC ENTREPRENEURSHIP IN THE INFORMAL ECONOMY

PhD Series 16.2023

Shelter Selorm Kwesi Teyi

STRATEGIC
ENTREPRENEURSHIP IN THE
INFORMAL ECONOMY

PhD School Department

PhD Series 16.2023

CBS

COPENHAGEN BUSINESS SCHOOL

HANDELSHØJSKOLEN

STRATEGIC ENTREPRENEURSHIP IN THE INFORMAL ECONOMY

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But by the grace of God I am what I am, and His grace toward me was not in vain¹ ... So then it is not of him who wills, nor of him who runs, but of God who shows mercy². My uttermost gratitude goes to God, who daily loads me with benefits and the solid rock on which I stand. I am also grateful to Irene Teyi, who took the lead to pursue her graduate education at CBS and left me no choice but to dream of pursuing a PhD at CBS. I am truly grateful to God and all who have supported me in making this dream a reality.

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¹ 1 Corinthians 15:10a (NKJV)

² Romans 9:16 (NKJV)

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³ Proverbs 31:11-12, 25-29

Summary

The informal economy accounts for the majority of global economic activities. Entrepreneurs significantly contribute to the growth of the informal economy. This thesis contributes to the growing literature on entrepreneurship in the informal economy by taking a strategy perspective. The thesis consists of three papers that examine strategic entrepreneurship in the informal economy at the early stages of the venture creation process. It also investigates the strategies entrepreneurs (who have successfully launched their firms) in the informal economy employ in response to adversity.

Drawing on entrepreneurial identity literature, the first paper highlights important heterogeneities among entrepreneurs in the informal economy and how it shapes the different strategies entrepreneurs employ in adversity. We find four primary entrepreneurial identities in our sample and three response strategies closely related to these identities.

The second paper focuses on the decision-making of prospective entrepreneurs. The paper examines the pre-entry search activities that individuals engage in as they search for information and learn about the viability and feasibility of their business idea. The paper shows that both individual (human capital) and external factors (embeddedness in informal institutions) when examined jointly and separately are essential in understanding entrepreneurial behavior at the earliest stage of the venture creation process.

The third paper sheds light on entrepreneurial learning by examining the pre-entry search activities of habitual entrepreneurs during two spells of entrepreneurship. The paper shows a strong positive association between the number of pre-entry search activities that entrepreneurs conduct in both spells of entrepreneurship when they exceed their performance aspirations. This aligns with the literature on performance feedback, which suggests that organizations do not change their current strategy when seen to be successful. However, the notion that habitual entrepreneurs in the informal economy may pursue a repetitive ‘winning’ strategy contrasts with the findings that habitual entrepreneurs in the formal economy may pursue more innovative businesses. This may also help us understand why replicative businesses are common in the informal economy.

In conclusion, this thesis finds that human capital is beneficial in conducting an extensive search during the entrepreneurial pre-entry stage. More so, being deeply embedded dampens the gains from having high human capital endowments, while being broadly embedded in a larger number of informal institutions strengthens the benefits of human capital. We also find that the positive association between the number of pre-entry steps taken in the first and second spells of entrepreneurship is stronger when entrepreneurs perform above their aspirations. Finally, our data reveals four entrepreneurial identities and three key response strategies that are closely related to entrepreneurial identities.

Resumé

Den uformelle økonomi står for størstedelen af den globale økonomiske aktivitet, og entreprenører er signifikante bidragsydere til den uformelle økonomi. Denne afhandling bidrager til den voksende litteratur om entreprenørskab i den uformelle økonomi med et strategiperspektiv. Denne afhandling består af tre artikler der undersøger strategisk entreprenørskab i en uformelle økonomi på det meget tidlige stadie af startupprocessen. Den undersøger også de strategier entreprenører (som succesfuldt har lanceret deres virksomheder) i den uformelle økonomi anvender som modsvar på modgang.

Med rødder i identitetslitteraturen inden for entreprenørskab, fremhæver kapitlet heterogenitet mellem entreprenører i den uformelle økonomi samt hvordan dette former entreprenørernes forskellige strategier i modgang. Vi finder fire primære identiteter blandt entreprenører i vores stikprøve og tre forsvarsstrategier, der er tæt knyttet til disse identiteter.

Den anden artikel fokuserer på beslutningstagning blandt potentielle entreprenører. Artiklen undersøger aktiviteter som individer engagerer sig i for at søge information og lære om levedygtigheden og gennemførligheden af deres forretningsidéer. Artiklen viser at både individuelle (human kapital) og eksterne faktorer (indlejring i uformelle institutioner) når disse undersøges i fællesskab og separat er essentielle for at forstå entreprenant adfærd på de tidligste stadier af venture oprettelsesprocessen.

Den tredje artikel kaster lys over entreprenant læring ved at undersøge informationssøgningsaktiviteter blandt serieentreprenører gennem to runder af entreprenørskab. Artiklen viser en stærk positiv sammenhæng mellem antallet af informationssøgningsaktiviteter som entreprenøren udfører inden indtrængen på et marked når deres udbytte aspirationer overgås. Dette stemmer overens med litteraturen om præstationsfeedback, som foreslår at organisationer ikke ændrer deres nuværende strategi når den har vist sig at være succesfuld. Dog modsiger konklusionen at serielle entreprenører i den uformelle økonomi formentlig forfølger repetitive vindende strategier, tidligere resultater der indikerer at serielle entreprenører forfølge mere innovative forretningsidéer. Dette vil måske også hjælpe os til at forstå hvorfor replikative virksomheder er almindelige i den uformelle økonomi.

Denne afhandling finder at human kapital er fordelagtigt når det kommer til at udføre omfattende informationssøgning under det tidlige stadie af entreprenørskab. Derudover dæmper det at være dybt indlejret fordelene ved at have høj human kapital, mens det at være indlejret i en bred række af uformelle institutioner styrker humankapitalen. Denne afhandling finder også en positiv sammenhæng mellem antallet af stadier der gennemgås før markeds indtrængen for både første og anden gangs entreprenører er stærkere når entreprenører klarer sig bedre end deres aspirationsniveau. Til slut, viser den kvalitative data fire entreprenørskabsidentiteter og tre nøgleforsvarsstrategier som er tæt relateret til entreprenørskabsidentiteterne.

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CHAPTER 1

STRATEGIC ENTREPRENEURSHIP IN THE INFORMAL ECONOMY:

AN INTRODUCTION

1.0 PURPOSE OF THESIS

This thesis studies strategic entrepreneurship within the context of the informal economy. Strategic entrepreneurship helps us bring a strategic lens to understand entrepreneurial behavior by integrating perspectives from strategic management and entrepreneurship (Agarwal et al., 2017; Hitt et al., 2001; Wright & Hitt, 2017). However, strategy formulation and entrepreneurial opportunity identification and exploitation occur within the scope of a market governed by some institutional framework (Agarwal et al., 2017; Bylund & McCaffrey, 2017; North, 1990). Institutions comprise formal rules, informal norms of behavior, and the enforcement of both (North, 1992). Therefore, institutions guide entrepreneurs' choices and actions (Bylund & McCaffrey, 2017).

The purpose of this thesis is to investigate strategic decision-making among entrepreneurs in the informal economy. The informal economy has been of interest to scholars in economics, sociology, and anthropology for many decades (Godfrey, 2011; Hart, 1973). However, the informal economy is an emerging context for strategy and entrepreneurship scholars (Salvi et al., 2022; Siqueira et al., 2016; Webb et al., 2014). The International Labour Organisation (ILO, 2018) indicates that about 80 percent of economic activity globally occurs in the informal economy, and most people in developing economies work in self-employment or small businesses.

Entrepreneurial activities in the informal economy are essential to economic development (Feld & Schneider, 2010; Webb et al., 2013). For instance, informal economy activities contribute an average of 15 percent and 50 percent of annual gross domestic product (GDP) in developed and developing countries, respectively (Charmes, 2016; Feld & Schneider, 2010; Lee & Hung, 2014). Globally, over a billion entrepreneurs live and operate in the informal economy (Venugopal et al.,

2015), and economic growth and development have largely been attributed to entrepreneurial activity (McClelland, 1967; Minniti, 2008). However, despite the critical role of entrepreneurs in the informal economy, the literature on entrepreneurship in the informal economy remains limited (Salvi et al., 2022; Webb et al., 2013).

This thesis focuses on how individual (education, prior entrepreneurial experience, performance aspirations, and entrepreneurial identity) and external factors (embeddedness in informal institutions) shape entrepreneurial behavior (pre-entry search and response strategies in adversity) in the informal economy. To this end, the overarching research question for the thesis is: *How do entrepreneurs strategize in the informal economy?*

To answer this question, we examine strategic decision-making at two crucial stages of a business: (1) the entrepreneurial pre-entry stage that precedes the commencement of the business; and (2) the post-entry response strategies in times of adversity. These two stages represent defining times when entrepreneurs formulate or reformulate their strategies. First, the entrepreneurial pre-entry stage is a crucial stage of learning and decision-making that can shape the post-entry strategy, performance, and exit (Chen et al., 2018). Second, times of adversity present both challenges and opportunities that may lead to responses that are consistent or deviate from the firm's current strategy.

This introduction consists of three sections. The first section provides some insight into the overarching institutional environment within which this thesis is situated. Second, a brief structure of the thesis is provided, highlighting the three papers of the thesis that contribute to the entrepreneurship literature from a strategy perspective. The final section highlights the contributions of the thesis.

1.1 CONTEXTUALIZING THE THESIS

The institutional environment (formal institutional imperfections)

Formal institutions are distinct from informal institutions (North, 1990; Webb et al., 2009). Formal institutions consist of codified laws, rules, and regulations determining what is legally acceptable within a given society (Kistruck et al., 2011; North, 1990). However, formal institutions

can have imperfections in facilitating desired socio-economic activities and outcomes. Such imperfections undermine efficient transactions/operations and are more pronounced in developing and emerging contexts relative to developed economies (Ge et al., 2019; Webb & Ireland, 2015; Williams et al., 2017).

Following prior studies, we discuss four types of formal institutional imperfections, namely, (1) formal institutional voids, (2) formal institutional inefficiencies, (3) formal institutional uncertainty, and (4) formal institutional weakness and instability (Webb et al., 2014; Webb & Ireland, 2015; Williams et al., 2017). These formal institutional imperfections are pervasive in developing and emerging economies because such economies lack advanced formal institutional frameworks (such as the existence of employment contracts, minimum wage, social security, antitrust, licenses/registration) and infrastructure that provide public systems and goods (e.g., transportation, education, water, electricity, healthcare, media/communication) which support economic activity (Kistruck et al., 2011; Sutter et al., 2013; Webb et al., 2013).

First, formal institutional voids arise when formal institutions are ill-defined or lacking, which undermines efficient market transactions (Khanna & Palepu, 1997). Formal institutional voids (in developing and emerging economies) can manifest differently. These include underdeveloped infrastructure elements, such as poor communication networks, inefficient transportation systems, and the inability to access electricity and water which negatively impact productivity (Khoury & Prasad, 2016). Equally, the lack of well-defined property rights, ill-enforced laws, limited enforcement, and judicial apparatuses hinder the ability of economic actors to appropriate value from their activities and eventually dampen their willingness to invest in productive assets (Khoury et al., 2014; Webb & Ireland, 2015). Similarly, undeveloped markets (i.e. capital and labor) trigger significant challenges in accessing financial and human capital that support economic activities (Webb et al., 2019; Webb & Ireland, 2015).

Second, formal institutional inefficiencies may arise when formal institutions have imperfections that result from misallocation or sub-optimization of resources (Marcelin & Mathur, 2014; Qian & Strahan, 2007). This happens when formal institutions seek to maximize economic rents for privileged individuals or groups to the detriment of society (Acemoglu & Robinson, 2013). For instance, overly complicated processes in registering land titles, and huge licensing costs may

be used to protect the economic interests of the elite (De Soto, 1989; Webb & Ireland, 2015). Similarly, cumbersome business registration processes and associated huge costs may serve as entry barriers for new entrepreneurs (De Soto, 1989; Siqueira et al., 2016; Webb et al., 2015).

Third, formal institutional uncertainty is exploited when formal laws trail behind technological and sociocultural changes, leaving new technological advancements and portions of economic activity unregulated (Dhanaraj & Khanna, 2011). Recently, the advancement of artificial intelligence and the introduction of ChatGPT has raised concerns about the inability of many regulatory bodies to appropriately define the boundaries of what is permissible (or not) with the technological advancement. As a result, individuals and organizations are left to use their discretion defining what is appropriate.

Fourth, formal institutional weakness and instability are seen when formal institutions “lack the capacity to enforce what could be well-defined and efficient underlying policies” (Webb et al., 2010; Webb & Ireland, 2015, p. 25). Additionally, when formal regulations keep changing very fast, actors may not be willing to comply with every change due to the cost of change (García-Rincón, 2007). Moreover, actors may develop a “wait and see” attitude and operate informally while waiting for the formal institutions to resolve their weaknesses (Webb & Ireland, 2015).

Altogether, formal institutional imperfections are predominant in developing and emerging economies compared to developed economies. In such contexts, informal institutions are predominant in guiding behavior (North, 1990; Webb et al., 2009), including entrepreneurial choices and actions (Bylund & McCaffrey, 2017; Webb et al., 2013). Informal institutions embody implicit and collective meanings that underlie the interactions among individuals in a society (Pathak & Muralidharan, 2016). Informal institutions are characterized by basic norms of trust, kinship ties, interpersonal relationships, repeat dealings, and reciprocity (North, 1991; Pathak & Muralidharan, 2016; Zoogah et al., 2015).

Entrepreneurship in the informal economy

The informal economy comprises “*economic activities that occur outside of formal institutional boundaries but which remain within informal institutional boundaries for large societal groups*” (Webb et al., 2009, 2013, p. 599). The International Labor Organization’s (2018)

estimates reveal significant differences among countries regarding economic activities that occur in the informal economy. For instance, the informal economy accounts for 90.1% of economic activities in Ghana, 92.9% in Nigeria, 79.9% in Morocco, 58.8% in Tunisia, 34.0% in South Africa, 56.3% in the Dominican Republic, 53.4% in Mexico, 46% in Brazil, 18.6% in the United States, 66.9% in Iraq, 54.4% in China, 18.7% in Japan, 88.2% in India, 27.3% in Spain, 13.6% in United Kingdom, 1.2% in Luxembourg, 7.4% in Norway, and 11.2% in Denmark.

In sum, the informal economy represents over 80% of economic activity globally (ILO, 2018), accounting for approximately 70% of economic activities in developing and emerging economies and 18% of economic activities in developed economies. This shows different levels of institutional incongruence across nations, such that what is considered to be legal by the overarching formal institutions of a society may be seen to be illegitimate to some other groups in the society, resulting in differences regarding what is socially acceptable (Centeno & Portes, 2006). In other words, while some activities may be contrary to the formal laws and prescriptions (illegal), they are considered legitimate for a substantial number of stakeholders such as community and family members, employees, customers, service providers, and suppliers which entrepreneurs commonly interact with. (Webb et al., 2009, 2013). The definition of informal economy adopted in this thesis does not include criminal activities such as drug cartels and gang activities that occur in the renegade economy (Webb et al., 2009). The renegade economy consists of activities that are antisocial behavior (i.e., both illegal and illegitimate). Hence, we limit our discussions to socially acceptable activities that fail to conform to all the appropriate regulatory requirements governing the economic markets.

The challenge of resource constraints

Informal economy entrepreneurs face severe resource constraints (Sutter et al., 2019; Webb et al., 2013). Resources constraints represent the limitations that entrepreneurs face with regard to both their tangible and intangible assets, such as human, financial, physical, and relational capital, which inhibit them in the process of manufacturing and delivery of products that create value (Alvarez & Barney, 2014; Kellermanns et al., 2016; Webb et al., 2013).

Typically, some of the human resource/capital limitations that entrepreneurs face include low levels of formal education, inadequate or low levels of skills and experience, absence of specific business skills, and the lack of training and technical support (Fonchingong, 2005; Galdino et al., 2018; Grimm et al., 2012; Lyles et al., 2004; Sutter et al., 2017). Additionally, informal entrepreneurs cannot draw on highly skilled human capital and can hardly employ division of labor (Darbi et al., 2018). As a result, entrepreneurs use labor-intensive operations that are usually inefficient (Sutter et al., 2017). There is also hardly any intellectual property protection from regulators (Webb et al., 2009, 2014), making it challenging for entrepreneurs who wish to protect their innovations. Also, entrepreneurs in the informal economy encounter financial challenges. There is evidence that these entrepreneurs have limited information and options regarding funding and lack capital to start or expand their businesses (Fonchingong, 2005; Lyles et al., 2004; Olarenwaju & Olabisi, 2012). Prior studies show that entrepreneurs lack collaterals and face exorbitant interest rates from semi-formal financial institutions (Olarenwaju & Olabisi, 2012; Webb et al., 2013). In the light of these resource constraints, entrepreneurs in the informal economy lack the requisite resources and advantage to scale up their operations which results in low productivity.

Moreover, scholars identify that entrepreneurs in the informal economy have physical capital limitations regarding tools, equipment, technology, machines, and premises from which to operate (Canagarajah & Sethuraman, 2001; Darbi et al., 2018). Likewise, the inefficiency in regulations and legislations governing land tenure system and property rights compound entrepreneurs' challenges (Olarenwaju & Olabisi, 2012).

Strategic entrepreneurship in the informal economy

The resource-constrained environment in which entrepreneurs operate has an influence on business performance and growth (Sutter et al., 2019; Wiklund & Shepherd, 2005, 2003; Young et al., 2018). Ultimately, the nature of entrepreneurs and firms strategic response to these challenges will have a bearing on their performance (Miller & Friesen, 1983; Rauch, Wiklund, Lumpkin, & Frese, 2009; Zhou & de Wit, 2011).

Although some scholars have studied strategies that entrepreneurs employ in the informal economy (Darbi & Knott, 2016; Galdino et al., 2018; Webb et al., 2013, 2014), our understanding of how

entrepreneurs strategize in such settings is incomplete (Webb et al., 2013, 2019). This thesis contributes to our understanding of strategies that entrepreneurs employ in the informal economy. Previous studies have investigated strategies that entrepreneurs have adopted to transition from the informal to the formal economy (Lee & Hung, 2014; Sutter et al., 2017), as well as strategies that entrepreneurs employ to skirt formal regulations and survive in the informal economy (Webb et al., 2009, 2013). For instance, evidence supports that when there is ambiguity in formal institutions, entrepreneurs see such ambiguities as opportunities to operate informally (Uzo & Mair, 2014; Webb et al., 2009, 2013). Sutter and colleagues (2013) also examined the strategic response of entrepreneurs to semi-formal illegitimate institutions. They found variations in the extent to which entrepreneurs resist semi-formal illegitimate institutions based on resource mobility, perception of threat, and proximity and strength of their network. The informal economy has also been seen as a springboard for testing ideas and building capacity before formalizing businesses. It is argued that entrepreneurs who start informally are well positioned to perform better than those who start formally (Williams et al., 2017) and have a higher likelihood to export as well (Larsen & Witte, 2022). Although prior research have revealed some strategies that entrepreneurs devise in the informal economy (Sutter et al., 2019; Webb et al., 2013), there have been calls for further studies to deepen our understanding on strategies entrepreneurs employ in the informal economy (Khoury & Prasad, 2016; Sutter et al., 2019).

1.2 STRUCTURE OF THESIS

The next three chapters of this thesis jointly and separately contribute to the literature on entrepreneurship in the informal economy from a strategy perspective. By focusing on strategic entrepreneurship in the informal economy, this thesis contributes to the discourse on entrepreneurial identity, entrepreneurial pre-entry search and learning, and response strategies in the face of adversity.

Chapter 2 investigates the response strategies of entrepreneurs in the face of adversity. Whereas Chapter 2 takes for granted the founding of firms, Chapters 3 and 4 focus on how prospective and habitual entrepreneurs search for information and learn about their business ideas, respectively. Table 1 provides more information on the papers in the thesis.

Chapter 2: Entrepreneurial Identity and Response Strategies in the Informal Economy

The first paper of this thesis builds on prior literature that argues that entrepreneurial identity is essential in understanding heterogeneities in entrepreneurial strategies, behavior, and outcomes (Gruber & MacMillan, 2017; Radu-Lefebvre et al., 2021). The paper explores how the identity of entrepreneurs shapes their responses to situations of adversity that characterize the context of the informal economy.

Using an explorative research design, we conducted 92 semi-structured interviews in five informal clusters in Ghana. Ghana is a sub-Saharan African country with about 90 percent of economic activity in the informal economy (ILO, 2018; Newman & Barney, 2023; Ofori-Atta, 2020). We find four different types of entrepreneurial identities (guardians; survival entrepreneurs; canvassers; and growth-oriented entrepreneurs) and three response strategies (succumb; improvise; and push boundaries) that entrepreneurs resort to when faced with dynamic market uncertainties and the severe resource constraints that bedevil entrepreneurs in the informal economy.

These findings are important for understanding entrepreneurial identity and responses in the informal economy. We find a novel type of entrepreneurial identity – the guardian entrepreneur. Guardian’s response strategies are primarily driven by their perception of whom society thinks they are—an acquired or inherited status. We contribute to research on entrepreneurial identity by emphasizing the impact of not only who entrepreneurs are or what shared understanding society has of their role. We also show how their perceptions of what society thinks of them and how such perceptions guide their responses to adversity. This paper answers calls for more studies on the intersection of entrepreneurship and strategy (Hitt et al., 2001; Ott et al., 2017; Wright & Hitt, 2017).

Chapter 3: Entrepreneurial Pre-Entry Search in the Informal Economy

Paper 2 examines the entrepreneurial pre-entry stage within the context of the informal economy. The pre-entry stage encapsulates a series of activities that prospective entrepreneurs engage in to learn (i.e., update their beliefs) about the viability and feasibility of their business idea (Bennett & Chatterji, 2019). The pre-entry stage shapes post-entry strategies and outcomes (Chen et

al., 2018). We examine how individual (human capital) and external (embeddedness in informal institutional domains – e.g., family or co-ethnic members) shape the entrepreneurial pre-entry search. We theorize that prospective entrepreneurs with high human capital will engage in larger volumes of information search. However, this effect can be strengthened or weakened depending on their embeddedness in informal institutional domains.

We find broad support for our theory using unique survey data from a large informal cluster in Ghana. Our results show that human capital is essential for individuals to understand the value of pre-entry search, to aid them process and integrate information from different sources, while enabling them to use the information in their decision-making. Whereas being broadly embedded in a larger number of informal institutions strengthens the benefits of human capital, being deeply embedded weakens the gains from having high human capital.

This paper provides new evidence on the influence of informal institutions on the commencement of a business. We propose alternative explanations for why replicative businesses and necessity entrepreneurship is commonplace in the informal economy. Our findings suggest that when entrepreneurs concentrate their embeddedness in a few informal institutional domains, even those with high human capital will resort to myopic search, potentially leading to replicative entrepreneurial strategies.

Table 1: Overview of chapters

| Title | Research Question | Data and Methods | Main finding | Status |
|---|---|--|---|---|
| Chapter 2: Entrepreneurial Identity and Response Strategies in the Informal Economy (With Marcus M. Larsen & Rebecca Namatovu) | (1) What are the types of entrepreneurial identities in the informal economy? (2) How do different informal entrepreneurs strategize when faced with adversity? | 92 semi-structured qualitative interviews (Gioia Method) | We find four entrepreneurial identities and three key response strategies that are closely related to entrepreneurial identities. | Under review (Third round of R&R) at the Journal of Business Research |
| Chapter 3: Entrepreneurial Pre-Entry Search in the Informal Economy (With Marcus M. Larsen & Vera Rocha) | How do individual and external factors (separately and jointly) relate to the volume of information search prospective informal entrepreneurs conduct prior to entry? | Survey of 747 prospective entrepreneurs in Ghana (Count Models) | Human capital is imperative in searching for information at the pre-entry stage. However, individuals who have their embeddedness concentrated in only a few informal institutions stand the risk of not benefiting from their human capital endowments | In preparation for journal submission. (Target journal: Organization Science) |
| Chapter 4: Rinse and Repeat? Entrepreneurial Pre-Entry Search by Habitual Entrepreneurs in the Informal Economy | (How) Does the search entrepreneurs conduct in their first (initial) venture creation process relate to the search they conduct in the second (subsequent) spell of entrepreneurship? | Survey of 136 habitual entrepreneurs in Ghana (Count Models) | The positive association between the number of pre-entry steps taken in the first and second spells of entrepreneurship is stronger when entrepreneurs perform above their aspirations. | In preparation for journal submission. (Target journal: Strategic Entrepreneurship Journal) |

Chapter 4: Rinse and Repeat? Entrepreneurial Pre-Entry Search by Habitual Entrepreneurs in the Informal Economy

Paper 3 answers the question: *(how) does the search entrepreneurs conduct in their first (initial) venture creation process relate to the search they conduct in the second (subsequent) spell of entrepreneurship?*

To do that, the paper draws on the literature on cognitive and behavioral perspectives of learning to argue that performance relative to aspirations would shape how entrepreneurs' use their pre-entry search experience from the first business in the way they search for information and test the viability of their business idea in the second business. Using unique dataset of 136 habitual entrepreneurs in the informal economy in Ghana, we find support for our hypotheses. Our results show a strong positive association between the number of pre-entry search activities that entrepreneurs conduct in both spells of entrepreneurship when they exceed their performance aspirations.

This paper contributes to the strategic entrepreneurship literature by providing insight on early-stage decision-making of habitual entrepreneurs in the informal economy. We shed light on how entrepreneurial pre-entry search may change with accumulated experience. Doing so can help explain heterogeneities in entrepreneurial long-term performance, as many entrepreneurial actions have roots in the pre-founding and founding stages.

1.3 CONTRIBUTION

This thesis contributes to the discourse on antecedents of new venture creation and the emergent discussion on the importance of the entrepreneurial pre-entry stage (Bennett & Chatterji, 2019; Shepherd & Gruber, 2021). Studying the entrepreneurial pre-entry stage can contribute to understanding the roots of organizations, their varying qualities, and the strategies that firms and entrepreneurs adopt throughout the organization's life cycle (Chen et al., 2018; Cope & Watts, 2000). This study advances our understanding of the strategies of new firms and post-entry performance by uncovering new explanations on why and how individuals engage in pre-entry search. Importantly, this thesis unravels how an individual's environment, namely the depth of their informal institutional embeddedness can erode the gains that would otherwise accrue from individual-level factors such as human capital endowments during the crucial pre-entry search. Assuming that there is value in business planning on new venture performance

(Burke et al., 2010), these findings can contribute to an enhanced understanding on why informal firms, once established, vary in their propensity to imitate rather than innovate.

Second, by investigating heterogeneities in pre-entry search by entrepreneurs in the informal economy, this thesis extends current theories of necessity entrepreneurship to contexts of informality. The study suggests that the types of strategies typically followed by necessity entrepreneurs (e.g., Dencker et al., 2021; Nikiforou et al., 2019) may have deep roots in the pre-entry stage and strongly depend on the interaction between individuals' (lack of) human capital and their embeddedness in informal institutional domains. Entrepreneurship theories devoted to understand necessity-driven venture creation should therefore embrace the complex interplay between individual and contextual factors and acknowledge that these dynamics may largely vary across informal and formal economy contexts.

Furthermore, the study provides new evidence on the influence of informal institutions prior to starting a business. The findings propose alternative explanations on why the informal economy and necessity entrepreneurship is riddled with replicative businesses. Prior research has explained that replication is pervasive among necessity entrepreneurs because of low levels of human capital, limited access to funding, weak property protection rights, and weak enforcement of laws (Alvarez & Barney, 2014; Dencker et al., 2021; Webb et al., 2013). For instance, Dencker and colleagues (2021) argue that high levels of human capital will propel individuals to engage in "*skill-preserving entrepreneurial process*", while those with low levels of human capital will engage in replication. This thesis however suggests that when necessity entrepreneurs concentrate their embeddedness in a few informal domains, even those with abundant human capital will resort to myopic search, potentially leading to replicative entrepreneurial strategies.

More so, the observation that most entrepreneurs in the informal economy may not search much about the viability of their first business, yet they may exceed their (rather low) aspirations and repeat the same search behaviour in subsequent business could shed light on the pervasiveness of necessity entrepreneurship and survivalist businesses that are commonplace in the informal economy. While habitual entrepreneurs in the formal economy are prone to pursue more innovative businesses (Robson et al., 2012), those in the informal economy may pursue more replicative businesses hence, the pervasiveness of replication in the informal economy.

The thesis responds to calls for studies that integrate a resource perspective and learning theory (Greve, 2021). Thus, it contributes to the discourse on how performance feedback relates to learning from a resource perspective in two ways. First, by focusing on entrepreneurs in a

resource-constrained context, the thesis highlights how prior search experience and performance shape pre-entry learning. Second, the study builds on prior work distinguishing between resource-freeing and resource-consuming activities (Kuusela et al., 2017), highlighting a difference between high and low resource-consuming activities and its implications for how entrepreneurs search during the pre-entry stage.

Furthermore, the thesis answers to calls to push the boundaries of our current understanding on embeddedness and encourage a multi-level, multi-dimensional account of embeddedness. By examining five different informal institutions in which individuals may be embedded, this dissertation extends the boundaries of current literature beyond viewing embeddedness within just a single context (Korsgaard et al., 2022; Wigren-Kristofersen et al., 2019). The study accounts for embeddedness from both a social and an institutional perspective, while prior research has adopted just one of these angles. In doing so, the dissertation sheds light on the diversity of institutions in the informal economy (Nason & Bothello, 2022). Furthermore, by examining an individual's breadth and depth of informal institutional embeddedness, the dissertation provides some insights on how scholars can account for the dynamic and multi-dimensional nature of embeddedness, as opposed to the single-layered, dichotomous account of embeddedness that dominates the literature, simply considering entrepreneurs as either embedded or not (e.g., Korsgaard et al., 2022; Wigren-Kristofersen et al., 2019). Hence, the study shifts the attention from whether entrepreneurs are embedded to *how* they are embedded in different domains (how broadly, how deeply, and in which domains).

Entrepreneurs' social identity can be driven by economic self-interest and non-economic social interests (Fauchart & Gruber, 2011; Zahra et al., 2009). By focusing on the informal economy context where beliefs, values, and norms govern entrepreneurial behavior, this dissertation contributes to this discussion in two ways. First, the study finds that guardians run their business with the primary motive of perpetuating their perceived social identity to save face in the community in which they are embedded rather than for (1) economic, (2) socio-economic, or (3) political motives, as discussed in prior literature (Fauchart & Gruber, 2011; Gruber & MacMillan, 2017; Zahra et al., 2009). Hence, this thesis identifies a fourth (non-economic) type of entrepreneurial identity in the informal economy. The guardian is remarkably different from other entrepreneurs discussed in prior literature and this study's other three types of entrepreneurs. They tend to ignore/sacrifice profitable business opportunities inconsistent with their perceived social identity, even when such decisions lead to a consistent business decline.

The study shows that the informal institutional pressures, be they real or perceived, such as the fear of being looked down upon by community members, may prevent entrepreneurs from exploiting some opportunities, even if they are aware of the profitable nature of those opportunities. While some entrepreneurs may actively select informal operations to avoid the bureaucracy associated with formal operations, scholars have argued that the role identity of entrepreneurs prevents them from exploiting some opportunities (Slade Shantz et al., 2018). For instance, Slade Shantz et al., (2018) argue that informal institutional mechanisms of fatalism in collectivist societies may limit entrepreneurs to pursue only predetermined and inherited opportunities. In contrast, guardians are not limited to pursue inherited identities. Instead, some entrepreneurs deliberately ascribe to certain identities in society and consequently, choose to limit themselves from pursuing some opportunities.

If policy makers in developing economies desire to see less replication in the informal economy, then introducing individuals with a variety of hands-on training is particularly important as it helps individuals to respond better to the constraints of being deeply embedded in a few informal institutions. For instance, combining informal apprenticeship with formal education may be useful in developing more innovative businesses. In most African countries like Ghana, where there are many cultures and languages (about 50), policies that encourage individuals to interact with other cultures should be encouraged. This will have positive consequences for the sources of information from which individuals can draw on to learn during the venture creation process. For instance, government policies that seem to introduce individuals in senior high schools that are out of their regions should be encouraged than those that seem to limit individuals to their localities should be executed with caution. Also, ethnic diversity could be factored into National Service postings.

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Chapter 2

ENTREPRENEURIAL IDENTITY AND RESPONSE STRATEGIES IN THE INFORMAL ECONOMY

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Abstract: While entrepreneurs generally confront many challenges in running their businesses, those in the informal economy must do so in a state of constant environmental change outside the boundaries and support of formal institutions. We explore how the identity of such underdog entrepreneurs shapes their response strategies to situations of adversity that characterize the informal economy. Through an exploratory study of informal entrepreneurs in Ghana, we uncover four entrepreneurial identities (guardians, survival entrepreneurs, canvassers, and growth-oriented entrepreneurs) and discuss how these are closely related to three key response strategies (succumb, improvise, and push new boundaries). These findings show how resource scarcity and uncertainty shape underdog entrepreneurial behavior. We discuss the theoretical and practical implications of these findings.

Keywords: Underdog entrepreneurship, Entrepreneurial identity, Informal economy, Exploratory research design, Ghana.

INTRODUCTION

Entrepreneurial identity is an important determinant of variations in entrepreneurial strategies, behavior, and outcomes (Radu-Lefebvre et al., 2021). It refers to aspects such as who an entrepreneur is, which groups they belong to, what they do, what activities they are passionate about, or what society expects of them (Cardon et al., 2009; Ireland & Webb, 2007; Navis & Glynn, 2011; Sarasvathy, 2001; Slade Shantz et al., 2018). We explore how the identity of entrepreneurs shapes their responses to situations of adversity that characterize the context of the informal economy, defined as “those actions of economic agents that fail to adhere to the established institutional rules or are denied their protection” (Feige, 1990: 990). Especially in developing countries, most entrepreneurship occurs in the informal economy, where otherwise legitimate business activities operate unregistered or fail to have the requisite legislative and regulatory approval (Salvi et al., 2022). However, it is not clear how the identities of informal entrepreneurs influence their response strategies to contexts of adversity.

Entrepreneurial activities in the informal economy are widely acknowledged for their entrepreneurial dynamism (Thai & Turkina, 2014). However, such activities are also closely associated with extreme adversity, resource constraints, and uncertainty (Sutter et al., 2019). Compared to entrepreneurs in the formal economy, entrepreneurs in the informal economy are typically more constrained by formal institutional voids, such as absent intellectual property protection, weak legal support and protection, unreliable transportation infrastructure, and fragile financial support (Godfrey, 2011; Mair & Marti, 2009; Ehret & Olaniyan, 2023). While institutional support may be taken for granted for entrepreneurs in the formal economy, entrepreneurs in the informal economy must strategize around these uncertainties and resource constraints. It is often necessity-driven (Williams et al., 2017) and used as a survival strategy (Kistruck et al., 2011; Lee & Hung, 2014; Williams et al., 2016). Through their limited access

to resources provided by government agencies, informal entrepreneurship represents a unique form of underdog entrepreneurship (Baron et al., 2018; Miller and Le Breton-Miller, 2017). To better understand the dynamics of this underdog entrepreneurship, we formulate the following research questions: (1) What are the types of entrepreneurial identities in the informal economy? (2) How do different informal entrepreneurs strategize when faced with adversity?

We employ an explorative research design that involved 92 semi-structured interviews with informal entrepreneurs in Ghana; a country with high levels of informality (Adom & Williams, 2014; Offori-Atta, 2020; Slade Shantz et al., 2018). We conducted fieldwork in five informal clusters, where a complex web of institutions (e.g., tribal, vocation, regulatory, and locational) influences entrepreneurial behavior. Despite being confronted with high uncertainty and resource scarcity levels, informal entrepreneurs in these clusters employ high-risk tolerance levels by devising creative solutions in their entrepreneurial endeavors. Therefore, the context holds promise for a greater understanding of entrepreneurial identity and responses in the informal economy. We analyzed our in-depth interviews and direct observation data following the Gioia method (Gehman et al., 2018; Gioia et al., 2013).

A key finding is that entrepreneurs in the informal economy rely on their identities to guide their response strategies to the changing state of the informal economy. We uncover four types of entrepreneurial identities and explain how these are associated with three discovered response strategies. Specifically, we find that (1) *guardians* define their identity—be it an inherited or acquired status—as a result of societal expectations and thereby *succumb or improvise* in their responses accordingly; (2) *survival entrepreneurs* are more likely to *improvise* to sustain their existence; (3) *canvassers* constantly seek new opportunities and thereby respond by *improvising* mainly through exploring new markets, and (4) *growth-oriented entrepreneurs* respond to adversity by *improvising* and constantly *push new boundaries* for growth prospects.

These findings are important for understanding entrepreneurial identity and responses in the informal economy. In particular, we find that guardian entrepreneurs' response strategies are primarily driven by their perception of whom society thinks they are—an acquired or inherited status. As such, we contribute to research on entrepreneurial identity by emphasizing the impact of not only who entrepreneurs are or what shared understanding society has of their role. More generally, we contribute by understanding how resource scarcity and uncertainty shape underdog entrepreneurial behavior (Miller & Le Breton-Miller, 2017). Responding to recent calls by management scholars to take a keen interest in the entrepreneurship and strategy nexus (Hitt et al., 2001; Ott et al., 2017; Wright & Hitt, 2017), we add novel insights by extending the boundaries of how entrepreneurs use atypical resources in the informal economy.

THEORETICAL BACKGROUND

Entrepreneurship in the informal economy

The informal economy is vast. A recent report from the International Labor Organization (ILO) finds that 48% of the labor force works in the informal economy in North Africa, 72% in Sub-Saharan Africa, 51% in Latin America, and 65% in Asia (ILO, 2018). It has been subject to economics, geography, and sociology research, but lately also management and entrepreneurship (Bruton et al., 2012; Godfrey, 2011; Siqueira et al., 2016). We focus on informal entrepreneurs engaged in legitimate business activities that are either unregistered or fail to have the necessary regulatory approval to operate, primarily governed by informal norms, values, and beliefs (Webb et al., 2009, 2013). As such, we target informal entrepreneurs that can be regarded as underdog entrepreneurs (Miller and Le Breton-Miller, 2017). Informal entrepreneurs have the underdog effect because others view them as unlikely to succeed (Nurmohamed, 2020; Salvi et al., 2022). They are indomitable and use unusual problem-solving approaches (Paharia et al., 2011).

By operating informally, entrepreneurs can work more freely with less exposure to costly bureaucracy, regulations, and taxes (De Soto, 2000; Rocha et al., 2018). For example, Webb et al. (2009) discuss how informal entrepreneurs are less restricted by formal legal boundaries than formal entrepreneurs. Due to the opportunities for exploration and experimentation outside the formal legal boundaries, Larsen and Witte (2022) argue that entrepreneurs that start informally are more likely to initiate exporting after registration than entrepreneurs that begin formally. At the same time, however, entrepreneurship in the informal economy is surrounded by considerable uncertainty. For example, entrepreneurs have ambiguous relationships with state agencies, and their functionality may undermine political institutions (Portes & Haller, 2005; Newmann & Barney, 2023). The informal economy is shrouded in high levels of uncertainty that are further exacerbated by the “interconnectedness of the formal and informal economies” (Zoogah et al., 2015: 8). For example, Zoogah and colleagues (2015) argue that competing psychological, institutional, and sociocultural logics underlines the nature of uncertainty in the informal economy.

The unstable nature of regulatory regimes encourages informal economic activities in the informal economy, where firms “move between formal and informal arrangements based on regulations and regulatory changes” (Godfrey, 2011: 257). Thus, entrepreneurs choose which regulations to abide by, especially in grey areas. This unstable regulatory environment triggers market uncertainties that may extend to consumer and institutional spheres. By combining these perspectives, we view uncertainty in the informal economy as consisting of the dynamics and interaction of consumers, communities, and institutions. For instance, the absence of effective policy, legal, and regulatory framework leads to high levels of imitation and stiff competition (Fonchingong, 2005; Godfrey, 2011). Therefore, others can easily appropriate the value created by informal entrepreneurs (Alvarez & Barney, 2004, 2014; Webb et al., 2019). In some rural

parts of Ghana, entrepreneurs feel obliged to share their trade secrets with competitors, thereby reinforcing the pervasiveness of imitation (Slade Shantz et al., 2018)

While informal entrepreneurs can exploit the advantages of flexibility and low-cost operations, they face higher levels of resource scarcity and disparate conditions than their formal counterparts (Sutter et al., 2019; Webb et al., 2013). They have limited physical capital and often lack the tools, equipment, technology, machines, and premises to operate (Darbi et al., 2018). They have limited information and options regarding funding and lack the capital to start or expand their business (Lyles et al., 2004; Webb et al., 2013). Similarly, they often encounter financial challenges because they lack the collateral to take loans and face very high-interest rates from microfinance institutions (Olarenwaju & Olabisi, 2012; Webb et al., 2013). The inefficient regulations governing land tenure systems and property rights aggravate scarcity (Olarenwaju & Olabisi, 2012). Additionally, informal entrepreneurs cannot as easily draw on highly skilled human capital (Darbi et al., 2018). Typically, informal entrepreneurs face low levels of formal education; inadequate or low levels of skills and experience; absence of specific business skills; and a lack of training and technical support (Galdino et al., 2018; Lyles et al., 2004; Sutter et al., 2017). These challenges culminate in inefficient, labor-intensive operations (Sutter et al., 2017). Moreover, with little intellectual property protection from formal regulators (Webb et al., 2014), entrepreneurs are challenged should they wish to protect their innovations.

Entrepreneurs in developing countries and transition economies must respond to institutional complexity and uncertainty (Peng, 2000; Welter and Smallbone, 2011). A response strategy involves actors enacting a solution or action to address adversity (Lengnick-Hall & Beck, 2005). In situations of adversity and uncertainty, entrepreneurs balance action repertoires (Sutcliffe & Vogus, 2003) with varying attention and dedication. Informal entrepreneurs adopt varied strategies to respond to environmental challenges such as government agencies, competition, and norms and practices. In so doing, they can actively resist adversity or engage

in more subtle forms of response strategies. Oliver (1991) proposed five strategic responses that organizations can enact in response to institutional pressures: acquiescence, compromise, avoidance, defiance, and manipulation. Unless an actor chooses the passive strategy of acquiescence (where they conform to institutions), they must actively respond to external pressures. Oliver argues there is a high likelihood of acquiescence, compromise, and avoidance response strategies and a lower likelihood of defiance and manipulation in uncertain environments.

Entrepreneurial identity

To understand how informal entrepreneurs respond to situations of adversity, we explore the role of entrepreneurial identity. Entrepreneurial identity provides a frame of reference with which entrepreneurs define “who they are,” “what they do,” and “how they relate to others” (Ashforth et al., 2008; Fauchart & Gruber, 2020; Powell & Baker, 2014). It is seen as pivotal in starting, running, or exiting an entrepreneurial venture (Cardon et al., 2009; Radu-Lefebvre et al., 2021; Rouse, 2016). Consequently, entrepreneurial identity underlies decision-making, resource mobilization, strategy, and venture outcomes (Cardon et al., 2009; Howard et al., 2021; Radu-Lefebvre et al., 2021). Hence, entrepreneurial identity is a potent theoretical lens that enables us to understand entrepreneurs as economic and social actors (Mmbaga et al., 2020; Radu-Lefebvre et al., 2021).

Building on social identity theory (Tajfel & Turner, 1979), entrepreneurial identity provides the frame of reference that enables entrepreneurs as members of a group (or groups) to interpret their experiences and evaluate what to do (Alsos et al., 2016; Powell & Baker, 2014; Radu-Lefebvre et al., 2021). This perspective moves the field of entrepreneurship beyond the classical entrepreneurs, whose primary motive is self-interest or profit, to draw attention to other types of entrepreneurs whose primary motivation is a concern for others (Fauchart &

Gruber, 2011, 2020; Gruber & MacMillan, 2017). In this respect, Fauchart and Gruber (2011, 2020) argue that entrepreneurs' social identity shapes their motivations and explains the differences among three primary entrepreneurial motives, namely: serving self-interests (Darwinian), serving community interest (Communitarian), or serving political interests (Missionary). These motivations have a variety of implications for entrepreneurial strategies (Alsos et al., 2016; Fauchart & Gruber, 2011; Mmbaga et al., 2020).

Both formal and informal institutions drive entrepreneurial identity. Scholars have shown that formal educational and informal relations with family members, mentors, peers, role models, and community influence entrepreneurial identity (Fauchart & Gruber, 2011; Radu-Lefebvre et al., 2021; Stryker, 1968). Given that entrepreneurial identity serves as a cognitive frame that constrains entrepreneurs from enacting actions that are not consistent with their identities, we would expect that entrepreneurs with different identities will respond differently in the face of adversity and changing environmental situations (Powell & Baker, 2014, 2017; Wry & York, 2017).

While little research has explored the heterogeneity of informal entrepreneurs' identities, we believe there are reasons to expect significant variations. In particular, the literature on entrepreneurial bricolage (defined as "making do by applying combinations of the resources at hand to new problems and opportunities" (Baker & Nelson, 2005: 333)) suggests that strategies related to redefining, recombining, and repurposing resources in unaccustomed ways create breakthrough solutions and new sources of value. Entrepreneurs engaged in bricolage do not engage in deep cognitive exercises of formulating strategy but act on the fly by drawing on their meager resource troves to overcome their current limitations. The solutions created by bricoleurs may or may not become part of their long-term strategy (Ott et al., 2017). The quality of these solutions varies widely, with some being near perfection (Garud & Karnøe, 2003) and others substandard and imperfect (Lanzara, 1999). Additionally, making do implies that

entrepreneurs refuse to enact limitations by constantly testing conventional limitations to determine their future course of action (Phillips & Tracey, 2007).

While we have limited knowledge of entrepreneurial identity in proximal contexts such as informal communities (Radu-Lefebvre et al., 2021), it is relevant to understand the multiplicity and heterogeneity of entrepreneurial identity driving response strategies (Welter, Baker, Audretsch, & Gartner, 2017). Unlike the formal economy, the informal economy lacks strong formal institutions and relies on diverse informal institutions. Given the number of institutions at work and the various mechanisms at play, entrepreneurs attach deep meaning to the institutions they self-select into (Fauchart & Gruber, 2011). Therefore, entrepreneurial identities are integral in that they signify relevance, decisions, and strategies (Powell & Baker, 2014). Specifically, entrepreneurs identifying with sociocultural logics rather than business or commercial logics will likely strategize differently (Haarman et al., 2022).

It is currently unclear how informal entrepreneurs' identities influence their response strategies when faced with adversity. Developing a distinct entrepreneurial identity may help explain why such underdog entrepreneurs who face similar challenges strategize differently. Thus, assuming that informal entrepreneurs experience significant heterogeneity in how they 'make do' with a lack of resources and challenging environments, we aim to unpack the concept of entrepreneurial identity within the informal economy and underdog entrepreneurship. Importantly, this will allow us to understand how informal entrepreneurs make strategic decisions about their products and markets in response to situations of extreme adversity.

METHODOLOGY

Setting

We conducted our empirical study in Ghana, a West-African country with about 90 percent of economic activity being informal (Offori-Atta, 2020). Ghana has long been recognized as a country with high levels of informality across many sectors (Hart, 1973, 2016). The Ghanaian economy is dominated by self-employed entrepreneurs and small owner-run firms, usually operating micro, small and medium-scale businesses (Adom, 2014). Most of these businesses are typically informal by not complying with formal regulatory requirements. However, the government has started to acknowledge the significance of the informal sector. It has begun to propose policies that align informal firms with formal regulatory requirements, such as registration with local municipal assemblies, assigning tax identification numbers, and registering employees for social security. The regulatory environment continues to evolve, implying that informal firms must comply with some formal regulatory requirements and procedures when operating (Aryeetey, 2015; Darbi & Knott, 2016; Zurek, 2019).

We used an exploratory, qualitative research design to answer our research questions, as is recommended when studying subtle or poorly understood phenomena (Strauss & Corbin, 1998; Yin, 2003). An exploratory design is well suited for understanding the subtleties of informal entrepreneurship because it provides a highly contextualized understanding of how individual dispositions influence entrepreneurial behavior in resource-constrained and uncertain contexts. Given our interest in identifying the existing scope (maximum variation) of informal entrepreneurs' identities and illuminating the link between an entrepreneur's identity and a strategic decision, we relied on theoretical sampling. Theoretical sampling involves data collection driven by an evolving theory based on concepts of places, people, or events to maximize opportunities of discovering variations among their properties and dimensions (Strauss & Corbin, 1998; Miles & Huberman, 1994; Neergaard & Ulhøi, 2007). Therefore, the

theoretical sampling approach increased the possibility of collecting varied data on entrepreneurs' identities and strategies. It provided an opportunity to determine the range of variability (Glaser & Strauss, 2006; Miles & Huberman, 1994).

We interviewed entrepreneurs operating in five industrial manufacturing clusters in Ghana. An industrial cluster can be defined as “a socio-economic entity characterized by a social community of people and a population of economic agents localized in close proximity in a specific geographic region” (Morosini, 2004, p. 307). The entrepreneurs in the sample experienced environmental changes (e.g., technological, economic, sociocultural, and geographical) in addition to the overall regulatory changes in the informal sector. As such, the ventures experienced varied levels of uncertainty depending on their industrial sectors, physical environment, location, and degree of government intervention. The industrial clusters are further described in Table 1.

--- Table 1 about here---

Sample

We sampled 92 entrepreneurs across the five clusters. To increase the variety and provide more robust empirical data, we selected entrepreneurs based on the richness of the information we expected to gain from them (Patton, 2014). To identify the relevant entrepreneurs, we first considered entrepreneurs in the manufacturing sector because manufacturing generally symbolizes the recombination of scarce resources from raw materials to finished products and commercialization. Second, the study started with entrepreneurs located in the principal streets of the industrial clusters. However, as data collection continued, we realized that most entrepreneurs operating in ‘temporal’ structures were more resource-constrained than those along the principal streets. Hence, we focused on those with fewer resources as they more significantly represented extreme cases of underdog entrepreneurship. This choice resulted in a diverse sample of entrepreneurial identities within different entrepreneurial behaviors and

strategies, facilitating a comparative approach (Miles, Huberman, & Saldana, 2013). Appendix 1 provides a summary description of the 92 respondents. It depicts their age, educational qualifications, experience in business, firm size (number of employees), and the main sectors represented. To offer a more qualitative sense of the entrepreneurs, we provide three vignettes of entrepreneurs who typify the respondents in Table 2.

--- Table 2 about here---

Data collection and Analysis

Data collection took place from late December 2019 to early February 2020 and was conducted in person by the first author of this article. The data was collected qualitatively using a combination of interviews and informal observation. The primary data source was interviews with entrepreneurs. The in-depth interviews lasted 52 minutes on average and were semi-structured. The interview protocol (see Appendix 2) served only as a guide. It was loosely followed to allow for more natural conversations structured around overall themes related to the entrepreneurs' personal and firm background, the ventures' challenges and strategies, resource use, and the relationship with the local community. The interviewer probed further on interesting themes that emerged from the interviews.

In the data collection process, we followed credibility strategies for achieving rigor in qualitative studies (Krefting, 1991). To boost familiarity and increase confidence, the interviewer engaged actively with cluster leaders by seeking permission from association leaders and using the local language (mainly Twi, and occasionally Ewe or English – the quotes presented below have been translated to English verbatim). Interaction with leaders and the community was significant in familiarizing the researcher with contextual nuances and subtleties in each cluster.

We used the Gioia method to analyze the qualitative data (Gehman et al., 2018; Gioia et al., 2013). Following this method, we systematically demonstrate the progression from data to

theory by showing first-order codes (drawn from interviewees' words), second-order themes (immediate emerging concepts), and aggregate dimensions (more abstract theoretical concepts). We first coded the interviews individually using in vivo codes that give voice to informants by capturing the words and phrases of the informants. Giving informants a voice helps uncover new concepts (Gioia et al., 2013). The following coding stage was to group 117 codes into categories per the similarities and differences as some idiosyncratic categories were dropped (Saldana, 2009). This process resulted in 22 first-order categories/concepts from the initial list of 117 codes that included "using condemned raw materials," "canvassing for the market," "building machines that are easy to operate," "focusing on core products in peak season," and "following the path of my master". In this coding round, we examined how entrepreneurs conducted business in the informal economy amidst resource constraints. Relatively early in the process, we identified concepts that are the core ideas of response strategies. We came to understand that the responses the entrepreneurs decided upon were coherent paths instigated by their identities. To arrive at the second-order themes, we had several rounds of extensive discussion to resolve concepts. For each categorization and concept introduced in the study, we had 100% agreement. We also used the academic community to challenge and refine our theory. We presented working papers at workshops and conferences, attempting to clarify the patterns in our data. We used colleagues' critical feedback to interrogate the data further and rework our theory (Denzin & Lincoln, 2005; Strauss & Corbin, 1998). The seven second-order themes were identified by grouping and linking first-order concepts into themes as researchers acted as 'knowledgeable agents' in assigning meaningful terms to the data (Gioia et al., 2013). Finally, taking note of the relationships between the categories and themes while analyzing the data, the second-order themes were organized into aggregate dimensions (Gioia et al., 2013). The data structure (see Figure 1) shows the systematic process of moving from raw data to theoretical

constructs (themes and aggregate dimensions). Thus, we reached the data structure by moving back and forth between the theoretical concepts emerging from the analysis and the raw data.

--- Figure 1 about here---

FINDINGS

We found that entrepreneurs in the informal economy in our sample can be classified into four distinct identities. In the following, we present the findings related to the entrepreneurial identities (guardians, survival entrepreneurs, canvassers, and growth-oriented entrepreneurs) before presenting the entrepreneurs' response strategies (succumbing, improvising, and pushing boundaries).

Entrepreneurial identities

It emerged from the data that there are differences in how entrepreneurs identify themselves. These differences result from their need to save face by perpetuating an identity they hold in society, their need for survival, an opportunity-seeking behavior, or the need to grow their business. Most of the entrepreneurs sampled can be classified into one of the four identities, with each identity differing from the other. These differences are underlined by their core beliefs and values about who they are and their motivations for being in business. We identify four identities of entrepreneurs dominating the informal economy: Guardians; Survival entrepreneurs; Canvassers; and Growth-oriented entrepreneurs. As such, we build on research that has developed different entrepreneurial identities (Fauchart & Gruber, 2011, 2020) but not within the informal economy. Specifically, we find three distinct response strategies of entrepreneurs facing adversity (succumb, improvise, and push boundaries). In the following, we outline the four identities before discussing the responses. We then discuss the implications of each entrepreneurial identity for the response strategies that the entrepreneurs may choose.

Guardian entrepreneurs: The first type of entrepreneur is the guardian entrepreneur. Guardian entrepreneurs may refuse to explore new opportunities because they value their

perceived identity in society more. Guardians' behavior comes from their commitment to preserving the identity they perceive that their local communities hold of them. They prioritize this social identity over the success of their business. Consequently, the guardians' beliefs about 'who they are' in society and how the community in which they operate perceives them shape their strategies. In the informal economy, entrepreneurs are often identified with their predominantly produced products. Guardians typically produce few product lines and stay true to those products. Guardian entrepreneurs highly desire to perpetuate an identity in society, whether inherited or acquired. On the one hand, such identities are inherited when guardians believe they owe allegiance to society, their masters (those who they learnt the trade from), or their family members (usually an uncle or father if he had been in the trade or is currently in it) to stay committed to a particular line of products. On the other hand, they acquire the identity when the entrepreneurs introduce new lines of business and remain committed to these over a period.

Irrespective of how this identity is gained, we find that guardians are highly committed to remaining true to their social identity. This sense of commitment has implications for the practices in which these entrepreneurs engage. While guardians may draw on already accumulated amateur skills, free or discarded resources, and their network resources, they are constrained by their identity in the type of opportunities they choose to pursue. For instance, guardians who could 'make do' by recombining their already acquired capabilities and or discarded raw materials to downsize to more straightforward and economically viable product lines will let such opportunities slip away.

As one carpenter narrates, although his main line of business (beds, doors, and door frames) has declined, he remains committed to his identity as a bed and door producer. He points out that although he has neighbors who have faced the same challenge and switched

products, he would rather stay true to his identity in society than switch to products that are cheaper to produce and have a ready market:

“It is like these people here [referring to a neighboring workshop]. They used to make doors but have realized that they are not moving fast. So now, they have completely stopped making doors and only making tables. For that one, people come to order. The kitchen stools and tables and those things move faster than those of us making the doors, door frames, and beds. So, we suffer. As I was learning carpentry, I didn’t have a plan. But as time passed, I decided that these doors and beds were what I wanted to do.” – (R#12 KA – Carpenter).

“Oh, in fact, it is like you have been doing one thing for a long time, and now you want to run away from it and go and do something else. Take, for instance, this bed. Every day I make beds, every day I do it, and now it is not going well, and I am getting hungry, but stopping this [beds and doors] to do that [make stools] is quite uncomfortable. It is like I feel sluggish, and I am shy about doing it. As I can see that this is what I do every day. Is it a kitchen stool that I now want to make? Let’s say I have a neighbor who is always making kitchen stools. He might even think I am envious of him. He might say that because people are buying his products, I am also doing some.” – (R#12 KA – Carpenter).

When probed, he further clarified his point. In so doing, he indicated that his reluctance to explore new opportunities was driven by his perception of how his peers would view him rather than, for instance, the lack of knowledge or finance to capture other opportunities:

“As for this part, you have to understand it very well. So, this thing that I am doing, for example, this neighbor of mine, every day, he is making tables. I am also continuing to make my bed. Let’s assume my money now cannot buy wood for making beds. But I can see that my money can buy Wawa for the kitchen stool and table. But when I buy the wood to come and do the kitchen table or stool, he will also say that because I am doing this, you want to do the same thing. So, because of that, let me also do what I am doing so that he will also do what he is doing.” – (R#12 KA – Carpenter)

Similarly, in the printing cluster, we learned that making pocket-size notebooks is more profitable than bigger ones. However, an entrepreneur in the printing cluster confirmed that he is not interested in producing pocket-size notebooks because he is now dealing in products that signal a higher status among his peers in the printing enclave:

“I started with these [pocket size notebook]. I started with GHC1.50. If my father were to be here, he would testify to you today: If you give me this [small pocket-sized notebooks] to do, I won’t do it. Some other shops like the place you went to [before coming to him] you see that, that is the only thing they also do. But this [foolscap] is not like that. One paper is GHC310, and when you subtract your money [expenses], when you finish, for

everyone [paper worth GHC310] you get about GHC50 [profit]. But when you use the GHC310 to buy materials for this [pocket-sized notebook], you will get about GHC150[profit].” – (R#3 SCA – Maker of Note Books)

Despite demonstrating an appreciable understanding of the *tailor’s stool*⁴ business, a carpenter indicated that while some products were profitable, they were below his status in society. Consequently, he would not complement his struggling business with product lines that he believed to be inconsistent with his social position, although he had the capabilities to produce such products:

“As for the tailor stools, I think when they make them, they get some profit ... As for this job [the stool job], it is below my level. I can’t do this type of work again. I can’t. [...]. When they can make 15 stools and make a profit, in the end, they can make additional three stools. Then they get a total of 18. In this way, they will be increasing the outputs small, small.” – (R#8 AJ – Carpenter)

In such situations, guardian entrepreneurs can be described as having self-imposed boundaries based on their beliefs about societal perception, which ultimately prevents them from seeking and exploring new opportunities readily available. Thus, they are not motivated to introduce new products or adjust to product lines that may be more profitable than their current product lines. In this context, producing some kinds of products – foolscap or container for a shop – signals higher status or improvement in business, while other products – pocket-size notebook, rake, or kitchen stool – are not considered prestigious.

While the production of ‘capital-intensive’ products is not exclusive to guardians, they tend to produce more capital-intensive products than their peers in the same cluster. For instance, one respondent – a fabricator of articulator trailers trucks and Bedford trucks using ‘home used’ equipment and sometimes repurposed inputs – still holds on to continue in the product line of his deceased master to save face.

⁴ A type of wooden stool that is used by most artisans in Ghana

Guardians are also very relaxed about their market strategy, showing no market development or penetration efforts. Instead, they rely primarily on only their network of customers for new and continued business, as one respondent indicates below:

“That’s what I said earlier that I make the products and display them here. And if people pass here and see it, they buy it. If the person doesn’t come here, there is nothing you can do.” – (R#12 KA – Carpenter)

Survival entrepreneurs: Our findings indicate that survival entrepreneurs’ behavior is driven by their need to stay in business continually. Unlike guardian entrepreneurs, their behavior is not caused by any allegiance they may have towards keeping a particular social identity. Therefore, in the face of changes in environmental conditions, they employ different product-market configurations. Survival entrepreneurs usually have a wide array of products to serve the market. Because societal identity constraints do not bind them, they tend to branch into several product lines that their amateur skills can permit them to produce. They usually branch into product lines that can be seen as ‘low-hanging fruits’ that would keep their business afloat. These entrepreneurs draw from their existing resources - especially skills, capabilities, and raw materials – to produce goods for the market’s lower end. Essentially, these products are cheaper to produce, easier to sell, and more stable in demand.

Although they have a wide array of products with which they serve the market, survival entrepreneurs focus on a limited number of product varieties – as they are resource-constrained. Compared with other entrepreneurs, guardians, and survival entrepreneurs tend to view themselves more as craftsmen than business people. Hence, they emphasize their product strategy but pay very little attention to their market strategy. However, survival entrepreneurs appear to be more sensitive to market needs as they carefully focus on a few products (out of their diversified portfolio) that occasionally meet market demands. One respondent puts it this way:

“Gate, bugler-proof, containers, that is what we did. But I did not mention that work at first because I don’t often get jobs like that. Sometimes, you don’t get any work for one or two months. You come and open the shop. You won’t get any work. So, you have to try to do work that you will also eat (put food on the table). So, I turned the business to do this (hoes, rakes, and coal pots). This is what I am doing. It moves more than that one. As for this one, when I do it and send it, I will get ‘chop-money’⁵”. – (R#1 E.F – Electric Welder and Metal Fabricator)

An entrepreneur in the printing cluster shares how he has been able to reinvent his business from a mainstream printing press to the business of *finishing*, as he was unable to generate enough resources to stay competitive in the mainstream printing space:

“Formerly, this machine was used for printing. When printing started, this was what I was using. [...] Now, the computer sets everything. Because the machine might be left idle – the machine is also durable – we have changed it to another useful thing. [...]. What we are doing now at the end of the month, what you get, you will use to pay rent, light bill, school fees. In the end, you are still where you are standing. So, the difficulty. But when you don’t do it, you won’t eat.” - (R#14 WA – Printing Press)

Canvassers: Canvassers are the third type of entrepreneur observed in our sample. They exhibit a high degree of opportunity-seeking behavior. Canvassers differ from guardians and survival entrepreneurs as they tend to be comfortable pursuing new opportunities. Although canvassers may have comparable craftsmanship as guardians and survival entrepreneurs, they place more emphasis on their market strategy. Consequently, they seek to sell more of their current product lines to their existing market segments. Canvassers also tend to actively push their products into new geographic markets - albeit nothing as comprehensive as seen in the formal economy:

“When I started, I was in Accra. I have to take the initiative to go somewhere else. I went to Mankessim, Suhum, and other places. Swedru, I have roamed there. Asamankese, I have roamed there. [...]. At first, I used to supply his master [...]. He was also selling there. They were selling together. So, when he separated himself, then I went to see him and talked with him, and he said he also wants some. So, I supply to him.” - (R#4 KA Maker of Note Books)

“I used to send some of the products. I go as a marketer. – ‘apempem store’ [I carry the products on my head] I go like I am going for a trek. [...] So, you will meet customers. Some have stores, and they need some [the products]. [...]. So, we have a special time

⁵ Money for the daily provision of food for the family

when we go there. That place we go during some seasons. It's not all the time. Once you are going, you meet different people.” - (R#7 IA – Electric Welder and Metal Fabricator)

Of all the identities, canvassers pursue the most aggressive market strategy. They typically have a hands-on approach to their market strategy by moving from shop to shop in search of new customers. The purest canvassers would usually find markets for products he does not have the resources (or craftsmanship) to produce and subcontract it to other craftsmen while bearing much risk.

Growth-oriented entrepreneurs: Growth-oriented entrepreneurs are the fourth type observed in our sample. In many ways, growth-oriented entrepreneurs are very different from all the types of entrepreneurs already discussed. In the face of adversity, they challenge themselves the most in acquiring new skills in their area of trade and related trades and constantly developing new self-taught capabilities to improve upon the kinds of products they manufacture. Hence, they are better placed to meet the growing customer needs of their markets. They can also develop new technologies and products to serve clients traditionally outside their customer portfolio. Their desire for knowledge and growth is outstanding compared to all the other categories.

For instance, a machine fabricator had in his product portfolio a wide variety of products, spanning very costly as well as cheap products:

“We do different kinds of machines. Some are very big. [...] The big one is GHC25,000”.
- (R#2 MS – Machine Fabricator)

Through their persistence and continued acquisition of self-taught skills, they are also able to provide elaborate product solutions for new markets:

“For instance, when I went to the Cultural Centre and saw their loom, that was my first time, so when I said I could do it, the instructor told me I can't, that I brag a lot. And that even the grown men in this business couldn't do it, then how much more me? That's what even some of my brothers [referring to other artisans] say. . If work comes and they can't do it whenever I am around, I tell them I can and obviously do it. I don't know, but I think that's one of my gifts. No matter what you show me, I do it.” – (R#10 AMK – Carpenter)

Growth-oriented entrepreneurs have the most robust product strategy. They have a more concrete product development strategy. Unlike the survival entrepreneur, whose product diversification is focused on low-hanging fruits at the low end of the market (product lines that are cheaper in terms of skills and raw materials used), growth-oriented entrepreneurs are actively involved in developing entirely new products that may or may not be low-hanging fruits. Essentially, they stretch their product lines mainly upwards – to the high-end market and downwards –to the low-end of the market.

A machine fabricator recounted how - in his-days as an apprentice - he could follow through on a soap-making machine that his master was unable to build successfully and had given up. He indicated that his persistence and ability to fix the machine brought many customers to his master's shop. He narrates that he was later able to exploit this capability to build a sugarcane juice extracting machine and, subsequently, a palm oil expeller machine:

“I mold machines. My job is that I can do any machine you want by God's grace. Especially in the Agric sector, I can do any machine. I learned this type of work but not the palm oil expeller. It is a God-given gift. I was there once when someone told me he wanted a machine that squeezes the juice from sugar cane. I was there when the idea came to me, and I told him I could do it. [...] People complain that the process of making palm oil uses a lot of manpower: cooking palm nuts and pounding with a lot of strength. So, I looked for little money to start making this [palm oil expeller machine]. When I made the first one, I made it small, and a certain man came to buy it and took it to the Eastern region. So I was there when someone called me to say that he wants some of the machine” – (R#2 MS – Machine Fabricator)

While canvassers have the most aggressive marketing approach, growth-oriented entrepreneurs also have a strong market strategy. They make deliberate efforts to reach out to potential customers. For instance, one entrepreneur used very well-branded call cards and stickers to promote his business, which was instead an impressive deviation from the norm in his cluster:

“I stick it there. Wherever the machine goes, if someone sees it [stickers] and wants some, he can call me”. - (R#2 MS – Machine Fabricator)

From a product perspective, growth-oriented entrepreneurs are similar to guardians because they are the two categories of entrepreneurs who would typically be involved in producing the most capital-intensive products. A carpenter narrates his attempts to develop wood and sandals from sawdust, which is a significant by-product in the Sokoban Wood Village:

“Right now, I have some work to do, but whenever I have less time, like leisure time, instead of thinking of what I know already, I don’t spend time on those things because I know them already. I plan on something new. So, do you know what happens when I am watching TV or on Facebook? Whenever I see something, I spend time on it and think of what they used in making it.[...]. That’s what I do. It is not part of the business, but you shouldn’t just sit idle. Do you know that if I had done it and it was successful, I won’t buy wood again. Oh yes, like seriously. Then I will be able to make the sandals. I will use sawdust. Made in Ghana. You see how we have to use our senses. When they collect the sawdust, they just throw it away. The companies who make plywood, they collect it and use some for plywood. You see me here, although I am here, I think a lot. That’s how it is. That’s how my life is.” – (R#10 AMK – Carpenter)

In contrast to guardians, however, growth-oriented entrepreneurs would typically be involved in capital-intensive products because they were personally driven to acquire the skills required to manufacture such products. Moreover, growth-oriented entrepreneurs emphasize developing new products for new markets more than guardians who focus on perpetuating the traditions of the trade of their training with little or no innovations. Growth-oriented entrepreneurs tend to be much more innovative in developing new products than other entrepreneurs.

Response strategies of entrepreneurs

We also found three ways entrepreneurs in our sample strategically respond to their predicaments. These three responses (succumb, improvise, and push boundaries) can be viewed as a continuum of enacting one’s limitation on one end and refusing to enact one’s limitation on the other.

Succumb: To succumb is to respond to the challenges of severe resource constraints and market uncertainty that result from environmental change by doing nothing. It also reflects the position of entrepreneurs who are overwhelmed by their challenges. Succumbing refers to enacting one's limitations by allowing one's behavior to be governed by an individual's limitations. It describes a response strategy that tends to perpetuate what has worked in the past. In one dimension, it shows a continual engagement of general bricolage behaviors regarding, for instance, human resources and physical inputs. In another dimension, it shows the inability or adamant response to reconfigure current product-market configurations in response to increased market uncertainty and resource scarcity challenges. Our data reveals that some entrepreneurs change nothing about their business strategy in response to contemporary challenges as they lack the willingness or capacity to change. They often take no initiative to address their challenges, as illustrated by the following quotes.

"The contracts don't come like first. That's what brings all the problems or suffering. When you work every day, money comes. I have made money in the past. But today, it is lost. It's not anything, and we keep praying". – (R#8 AJ – Carpenter)

"But when you come and are seated idle as you find me, you don't need anyone to tell you that business is not moving. It used to be good in the past, but now it isn't. Like I said, if it is moving well, you have work to do. If all the time you have work to do, but in the case where it keeps long before you get work to do, that is not helpful." – (R#11 AB – Electric Welder & Fabricator)

While some entrepreneurs indicated that switching from their current product lines to those at the lower end of the market and, therefore, cheaper to produce, they also feared that such a move would make people gossip about them. Others felt that some product lines were simply below their status in society. Others indicated they lacked the skills and capabilities to adjust their current resources to the changing business environment and market needs. For instance, in the quote below, an entrepreneur expresses his inability to build new networks that will enable him to respond to the evolutions in the printing business.

“In the past, before you are given a job you had to have a press. But now, there are many potomanto press [middlemen] . Everyone finishes school and says he is a printer [...] We don’t have classmates. When you enter an office with grey hair, they say he is an old man. He cannot do the job, and they give it to their mates. That’s how things are going now. [...]. The person won’t give it to you. He will give it to the potomanto person [...] As for the difficulties, they are many. You won’t get the job.” - (R#14 WA – Printing Press)

Some respondents indicated that although their training would permit them to branch into other products, they felt that every craftsman had his God-given path to pursue and that switching meant that one had veered off from his calling. Hence it would be considered meddling in someone else’s business, and such actions were not regarded as healthy in their view. In responding to market uncertainties, succumbing implies that these entrepreneurs wait for customers to place orders and pay for the cost of production upfront before they produce. Alternatively, some produce as little as their current resources permit and wait until a customer can meet the selling price. In sum, some entrepreneurs do nothing in response to their changing business environment.

Improvise: Our data showed that many entrepreneurs engaged in an improvisation strategy. Improvisation is an inward-looking response strategy where entrepreneurs use their current resources to meet their challenges. Improvisation as a response means that entrepreneurs remain open to options and opportunities that come their way and recombining or reconfiguring their existing resources to their challenges:

“I make other machines for outsiders to buy and give me money. I have small machines there like ‘nica-nica’ [corn-mill], tomatoes grinding machine and the like. When that happens, I make those small things for them. Then I make those things for them to make some money.” - (R#2 MS – Machine Fabricator)

“Now, the welding work is plenty. We have about ten things [products] we are making here. If this one is on, this will be off or if this one is off, another one will be on. So, all the time, we come to work. If this [product] is not requested, that [product] will be requested. Every time, there is something you are doing.” - (R#7 IA – Electric Welder and Metal Fabricator)

“During the peakseason, I make Note three, Teachers and Foolscap notebooks only. Those are what the customers demand. But when here is not busy, that is when we do the

singing (pocket-sized) notebooks. For that one, even if you bring money [in the peak season], the singing [pocket size] notebook, I won't do it for you. (Interviewer asks: Why?) I won't get the time to do it." - (R#4 KA Maker of Note Books)

One electric welder and fabricator recounts how he changed his business to a less capital-intensive business when faced with adversity. Using his existing skills and resources, he was able to switch to a set of cheaper product lines:

"Because I can buy these for GhC20 and these for GhC30 [referring to his raw materials from the condemned market], so let's say with GhC50 I can do business right now. When I take it to the market, I will get 'chop-money.' But the gate is almost GHC1500 to GHC2000 and the person is not paying. And you will be going back and forth with the person. So, I won't do it. I won't even come close. That is how the business is." - (R#1 E.F – Electric Welder and metal fabricator)

Improvisation does not require the development of any new competencies in response to the challenges of market uncertainty and resource constraints. Improvisation is generally not initiated by entrepreneurs' proactivity but emerges as entrepreneurs come across new challenges and opportunities. As such, improvisation leans towards a reactive strategy, where entrepreneurs seize the moment to exploit an opportunity. It is inward-looking because entrepreneurs do not seek to develop new competencies or are focused on entering new market segments. We found three forms of improvisation among entrepreneurs in the informal economy. First, it could merely be a temporal response where the solutions developed may serve the business in the short term. It could also be a permanent strategy where the solutions developed may eventually become the firm's core business. Thirdly, it could be a blended strategy where the entrepreneur frequently oscillates between his core business and the new solutions discovered serendipitously, carefully choosing between the former and the latter occasionally. When entrepreneurs face market uncertainties, they resort to producing cheaper (petty) goods that require far fewer physical inputs than the core (original) product lines with which they are identified. Hence, they focus on products with relatively stable demand – essentially going to the low end of the market. Others resort to looking for new geographic markets to sell their

(original) products. Another strategy is to expand one's network of customers and learn over a period to build long-term relationships with those who prove to be trustworthy with payments.

On the one hand, improvisation implies a cautious and selective approach to minimize the challenge of low reliability in market transactions, such as customer defaults in payment. On the other hand, improvisation involves tactics such as the cajoling and begging of customers until they fully pay for products bought through part payment.

Push boundaries: To push boundaries implies a response strategy that challenges conventional or widely accepted knowledge on the limitations of entrepreneurs. It indicates a more proactive and outward-looking response to adversity. Consequently, entrepreneurs are deliberate about developing new competencies to enter new markets. Pushing boundaries requires the refusal to enact the limitations of entrepreneurs' current challenges in their search for new opportunities. As shown below, boundary-pushing is not a denial of the challenges that entrepreneurs are confronted with but rather the desire and ability to face those challenges:

"We have one problem here, most of our carpenters here always want to live with what they were taught that's why I like challenging myself." – (R#10 AMK – Carpenter)

"As for the practicals, by God's grace, we know. But for me sitting here, I want the theory to add to my life. I see that I am okay with practicals, but sometimes some of the things beat us." - (R#2 MS – Machine Fabricator)

Consequently, it involves strategic initiatives that transcend the entrepreneurs' current operations. A key component of boundary-pushing is the practice of constant experimentation, albeit with self-taught amateur skills, while making the most of available resources.

Bridging entrepreneurs' identity to response strategy in adversity

Entrepreneurial identity provides a frame of reference for 'who entrepreneurs are', 'what they do' and 'how they relate to others' (Ashforth et al., 2008; Fauchart & Gruber, 2020; Powell & Baker, 2014). We find that informal entrepreneurs' response strategies can be ascribed to their identity. The entrepreneurs' response strategies are courses of action adopted when

experiencing adversity (Lengnick-Hall & Beck, 2005). In this section, we discuss how the four entrepreneurial identities correspond with the three response strategies. A summary of this discussion can be found in Table 3.

---Table 3 about here---

First, guardians are typical to informal settings. They do not pivot when faced with adversity but succumb, staying true to their societal identity. Paradoxically, guardians' strategies usually respond to local social phenomena instead of broader economic and comprehensive knowledge. They are not likely to pivot ideas in response to adversity. Consequently, guardians succumb to adversity or improvise within the confines of the society they identify. Given that they are less concerned with broad applications, guardians do not focus on the scalability of their ventures but instead pursue their chosen identity. The absence of a scalability strategy and the narrow focus on information to respond to controverts formal entrepreneurs' strategies. Formal entrepreneurs aspire for growth and devise strategies based on a comprehensive search for information.

Second, survival entrepreneurs rely on scavenging resources to get by. They will improvise whenever their businesses face the risk of failure. They have deep local knowledge to drive their improvisation strategy. Resources within their local communities are insufficient to facilitate them in pushing boundaries. Consequently, they can only afford to make small (sometimes crude) discoveries with no scalability potential. Regarding flexibility to pivot/adjust, survival entrepreneurs resemble formal entrepreneurs. However, given that survival entrepreneurs are more resources constrained, they cannot engage in formal planning or benefit from knowledge beyond their local geographies as formal entrepreneurs typically would.

Third, canvassers, in contrast to survival entrepreneurs, seek knowledge from a slightly broader geography. They reconfigure processes and transfer to new (informal) markets for higher rewards. They do not succumb; their improvisation strategy aims for increased profits.

The entrepreneurs' pursuit of profits is about improved status and not necessarily firm growth. For instance, canvassers will likely use their business profits to take their children to better schools and improve their home conditions before reinvesting in their ventures. Canvassers resemble formal entrepreneurs in the drive for profit but differ in how they redistribute the profits. For canvassers, venture scalability is not an immediate priority.

Finally, growth-oriented entrepreneurs resemble formal entrepreneurs. They often introduce significant changes in the local context. They are movers, pushing boundaries to replace dated systems with newer technologies, structures, and processes. They pursue new opportunities to grow their ventures. These entrepreneurs are most likely transitioning to formalization but remain opportunistic. They have goals and standards like formal entrepreneurs but reduce costs by operating in informal settings. In essence, informality is simply a laboratory to test their ideas. As a result, their capacity to grow rests on their ability to amass resources and penetrate larger markets more quickly.

DISCUSSION AND CONCLUSION

We explore underdog entrepreneurs' identity and response strategies to the challenges of operating in an informal economy. We find four different types of entrepreneurial identities and three response strategies that entrepreneurs resort to when faced with dynamic market uncertainties and the severe resource constraints that bedevil entrepreneurs in the informal economy. As entrepreneurial identity is central to strategy (Fauchart & Gruber, 2011; Navis & Glynn, 2011; Powell & Baker, 2014), we highlight the implications of different identities on the response strategies of entrepreneurs in the informal economy. We argue that entrepreneurial identity either constrains or enhances the extent to which entrepreneurs 'make do' when faced with adversity. Consequently, the paper shows that the need for survival, growth, and opportunity-seeking behavior underpins how entrepreneurs respond in times of market uncertainties and resource constraints that underlie the environmental change of the informal

economy. More generally, our results mirror Miller and Le Breton-Miller's (2017) model of challenge-based underdog entrepreneurship. We show how adversity, resource constraints, and uncertainty in the informal economy lead to variations in adaptive requirements through heterogeneous identities, creating different response strategies.

Since guardians emphasize non-economic needs, such as their perceived social status, their strategy will remain unchanged, even under changing environmental conditions. Thus, guardians fail to reinvent themselves and their businesses. They succumb to challenges and improvise when their social identity is not threatened. Survival entrepreneurs focus heavily on using the resource at hand primarily to satisfy their sustenance. We argue that they will succumb to the extent that they can continue to make a living. However, survival entrepreneurs usually improvise by switching or expanding their product portfolio. As canvassers constantly search for new and more reliable markets, we argue that they are doubtful to succumb. Instead, they improvise by focusing on developing and serving new markets. Growth-oriented entrepreneurs tend to have the most robust response as they make do by reconfiguring their resources and acquiring new capabilities to overcome challenges. Consequently, they mainly tend to push the boundaries of their limitations.

Scholars have shown that entrepreneurial identity enables us to understand the different motives driving the entrepreneurial process (Alsos et al., 2016; Fauchart & Gruber, 2011; Mmbaga et al., 2020). Essentially, entrepreneurs' social identity can be driven by economic self-interest and non-economic social interests (Fauchart & Gruber, 2011; Zahra et al., 2009). By focusing on the informal economy context where beliefs, values, and norms govern entrepreneurial behavior, we contribute to this discussion in two ways. First, we find that guardians run their business with the primary motive of perpetuating their perceived social identity to save face in the community in which they are embedded rather than for (1) economic, (2) socio-economic, or (3) political motives, as discussed in prior literature (Fauchart & Gruber,

2011; Gruber & MacMillan, 2017; Zahra et al., 2009). Hence, we identify a fourth (non-economic) type of entrepreneurial identity in the informal economy. The guardian is remarkably different from other entrepreneurs discussed in prior literature and this study's other three types of entrepreneurs. They tend to ignore/sacrifice profitable business opportunities inconsistent with their perceived social identity, even when such decisions lead to a consistent business decline. In terms of relationship to other typologies, the conceptualizations more closely related to the guardian are Miles and Snow's (1978) "defender" and Powell and Baker's (2014) single identity "keeper of the bottom line." In the Miles and Snow typology, the defender (an organization) perceives their environment as stable and prioritizes efficiency by concentrating on only one market segment. Powell and Baker's singular identity, "keeper of the bottom line," relates more to the founder's role identity in pursuing profit. The resemblance may be fuelled by the perception that both "defender" and single identity prioritize one economic element (i.e., the bottom line and market efficiency). However, the social identity perspective highlights how entrepreneurs identify based on their social constructions. For example, in an uncertain environment, the guardian ignores adversity to forego economic gains in exchange for a social image in the local community. The guardian entrepreneur may help us understand why entrepreneurs succumb to precarious and changing environmental conditions and further enlighten us on why some entrepreneurs cannot reinvent their business models in times of adversity.

We show that the informal institutional pressures, be they real or perceived, such as the fear of being looked down upon by community members, may prevent entrepreneurs from exploiting some opportunities, even if they are aware of the profitable nature of those opportunities. While some entrepreneurs may actively select informal operations to avoid the bureaucracy associated with formal operations, scholars have argued that the role identity of entrepreneurs prevents them from exploiting some opportunities (Slade Shantz et al., 2018). For

instance, Slade Shantz and colleagues (2018) argue that informal institutional mechanisms of fatalism in collectivist societies may limit entrepreneurs to pursue only predetermined and inherited opportunities. In contrast, guardians are not limited to pursuing inherited identities. Instead, some entrepreneurs deliberately ascribe to certain identities in society and consequently choose to limit themselves from pursuing some opportunities. Again, providing further insight into prior literature (Alvarez & Barney, 2014; Slade Shantz et al., 2018), we find that while guardians imitate their masters, they are unlikely to imitate other entrepreneurs even if they have a good idea of their business models.

Additionally, we shed further insights on entrepreneurial identities driven by economic self-interest (Fauchart & Gruber, 2011) of entrepreneurs operating in the informal economy. We argue that survival entrepreneurs, canvassers, and growth-oriented entrepreneurs show varied motivations that underlie their response strategies. The growth-oriented entrepreneurial identity resembles the Darwinian identity (Fauchart and Gruber, 2011). The growth-oriented informal entrepreneurial identity is most aligned with formal entrepreneurship identities, given their aspiration for the traditional business-related goals of profit maximization and wealth accumulation. Yet, regarding response strategies, the growth-oriented entrepreneur lags behind the Darwinian entrepreneur because they must overcome their informality. The informality burden prevents them from devoting all their attention to activities to ensure business success. When faced with high uncertainty, growth-oriented entrepreneurs will most likely devise “under the radar” response strategies that can potentially jeopardize their profit and wealth creation goals.

Boundary conditions and future research

The study is set in five industrial clusters with a high concentration of informality, enabling us to explore our research question in varied industries. One may argue that the study is limited to

a single country context, and the findings may not be relevant to other settings. However, we believe that Ghana is an appropriate context where entrepreneurs in the informal economy operate under similar conditions as other Sub-Saharan African countries and developing economies in general (Odera, 2013; Takyi-Asiedu, 1993; Vermeire & Bruton, 2016). However, while the study focused on informal entrepreneurs facing resource constraints and market uncertainty because of environmental changes, our findings may not be relevant to informal entrepreneurs in developed countries as they show stark differences in infrastructural development (Webb et al., 2014). Consequently, entrepreneurs operating informally in developed regions can draw on more advanced environmental conditions (Siqueira et al., 2016; Williams et al., 2017). We are also likely to see different results in individualistic cultures where the normative pressure to conform to the perception of one's role in society may be less pronounced (Hofstede, 2011). In such cultures, we do not expect entrepreneurs to act primarily to save face.

Furthermore, it could be argued that the guardian identity might have resulted because the entrepreneurs sampled operated in industrial clusters where many other craftsmen of the same trade. Hence, the need for entrepreneurs to differentiate themselves. Under such conditions, inheriting or creating an identity and staying consistent with such an identity, even in the presence of adversity, may be a valuable approach to branding oneself. However, evidence from our data indicates that the Guardian identity is motivated by a non-economic need to save face. We encourage further studies to consider entrepreneurs not operating in industrial clusters.

Considering the underdog entrepreneurship research, we see several ways in which the findings of our study could be challenged and extended. First, the nature and extent of adversity the underdog (informal) entrepreneurs respond to varies (Miller and Le Breton- Miller, 2017). Would the response strategies have been the same had the informal entrepreneurs faced more extreme nonmarket adversity (e.g., war and health pandemics)? While we think the core of our

study highlighting informal entrepreneurial identity and response strategies provides insight into underdog entrepreneurship strategies, we anticipate more unusual approaches (Paharia et al., 2011) and different performance expectations (Nurmuhamood, 2020). Future research to explore underdog entrepreneurship response strategies in extreme and extended nonmarket adversity could be insightful.

Second, while we believe our model has relevance for underdog entrepreneurship in the social-cultural context, underdog entrepreneurship is heterogeneous (Miller and Breton-Miller, 2017). It also includes cognitive, body, and emotionally challenged entrepreneurs, such as disabled entrepreneurs (Martin and Honig, 2020) and ADHD entrepreneurs. In this respect, we believe a comparative analysis of varieties of underdog entrepreneurship would forefront significant nuances of entrepreneurship response strategies. For example, would informal entrepreneurs' response strategies differ significantly from disabled entrepreneurs or refugee entrepreneurs? What about when there is an intersectionality of underdog entrepreneurship, such as informal entrepreneurs with disabilities or informal refugee entrepreneurs? Future research to establish theories that explain differences in response strategies and how underdog entrepreneurship intersectionality influences response strategies will be significantly insightful.

As a result, future studies can pay attention to various methods for establishing response strategies. For example, using case studies and longitudinal surveys to follow underdog entrepreneurs over episodes of adversity and quasi-experiments to tease out what circumstances are likely to influence some responses and not others will provide a more nuanced perspective of underdog entrepreneurs' response strategies.

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Table 1: Description of clusters in the sample

| Cluster Name | Description | Environmental Changes |
|--|---|--|
| Suame Manufacturing | It is one of the largest clusters in Africa, with more than 9,000 firms and an estimated 200,000 informal workers (Hart, 2016). It hosts firms involved in manufacturing, vehicle repair, metalworking, and the sale of engineering materials. | Technological: Less educated entrepreneurs struggle to cope with new technologies (i.e., computer programming knowledge to repair newer car models). |
| Sokoban Wood Industrial Cluster (SWIC) | It hosts 8,000 workers and is a wood-based industrial cluster making various furniture products. Most of the entrepreneurs in the cluster have not registered their businesses nor paid taxes to the central government. | Geographical: The cluster was relocated to a new town. |
| Accra Newtown | It hosts firms involved in various printing services, such as analog and digital printing, designing, separation, engraving, lamination and binding, and selling and servicing inputs required in printing. | Technological and economic: Difficulties in acquiring and using new machine models and fierce competition from external firms. |
| Moro market cluster | Located in Kumasi, it hosts 500 informal entrepreneurs. It is the smallest cluster in the study. It constitutes firms predominantly in the footwear industry, for example, shoemakers, traders, and service providers of complementary inputs to the footwear-making business. | Economic: Fierce competition from China. |
| Bonwire Kente | It is rural based steeped in traditional Ghanaian culture. Bonwire indigenes are famous for making handwoven textiles reserved for social and sacred functions in Ghana. Most entrepreneurs are home based because weaving must be done in sheds in chilled environments. About 800 households are engaged in Kente weaving in Bonwire. | Economic: Fierce competition from China and irregular supply. |

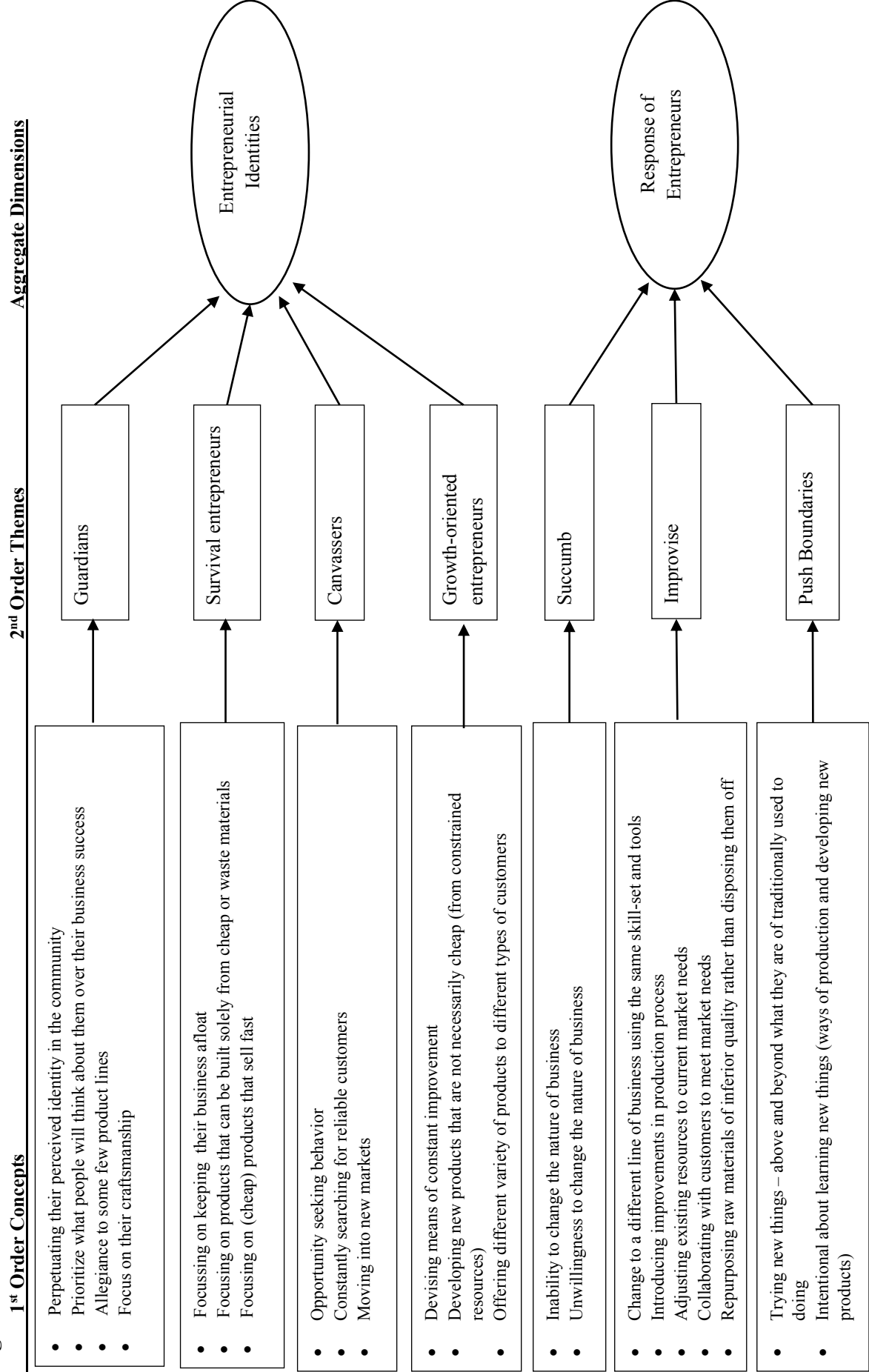
Table 2: Exemplary vignettes of entrepreneurs

| Name, Business, Location | Description |
|---|--|
| <ul style="list-style-type: none"> • Kwesi • Electric welding business • Suame Magazine | <p>Kwesi operates an electric welding business in one of Africa’s largest informal cluster - Suame Magazine in Ghana. He started his trade by building bugler-proof doors, gates, and metal containers (commonly used as stalls in Ghana), but now makes coal pots, hoes and rakes from scraps. Like many others in Suame, Kwesi operates from a wooden structure that barely has enough shelter from rain or the scorching sun. He has three apprentices who play essential roles, such as preparing scrap materials for production and following up on customers. Kwesi’s highest formal educational qualification is Junior high school, after which he later served as an apprentice to learn the trade of Electric welding and subsequently started his own business after four years of apprenticeship and service to his former master, as is the custom in Suame Magazine.</p> |
| <ul style="list-style-type: none"> • Joe • Printing press business • Accra New Town | <p>Joe has been running his printing press business in Ghana’s largest printing cluster in Accra New Town for the past eight years. Before that, he spent four years learning the trade and five additional years working in the industry to save and raise capital to start his own business. Joe has two industrial printing machines that he acquired through informal payment arrangements between himself and the supplier of the machines, who doubles as a long-time friend of Joe’s former master. He received formal education up to Junior high school. Joe works in a small metal container stall with one employee and three apprentices. He prints books, calendars, stickers, flyers, and souvenirs for schools, churches, businesses, and individuals. He mainly gets his business through third parties.</p> |
| <ul style="list-style-type: none"> • Boakye • Clothing production • Bonwire Tourist Center | <p>Boakye was born and bred in Bonwire, a town famous for producing a unique Ghanaian cloth known as Kente. At age 40, he has been operating his solo Kente weaving business for the past 13 years. He runs his business at the Bonwire Tourist Center, a government-built facility to support the Kente businesses and tourism in Bonwire. Boakye started Junior high school but could not complete it.</p> |

Table 3: Entrepreneurial identity and strategic responses

| | Guardian entrepreneurs | Survival entrepreneurs | Canvassers | Growth-oriented entrepreneurs |
|------------------------|--|--|---|--|
| Succumb | Will succumb if their current strategy is consistent with the perceived identity they hold in society. | Will succumb if only they can get by when their product or market strategy remains unchanged. | <i>Very unlikely to succumb, given that they are always in search for new opportunities.</i> | <i>Are not likely to succumb, as they inherently desire to take on challenges and are often on a mission to defy the odds to build their business.</i> |
| Improvise | Will only improvise if the new product line they would produce is consistent with their perspectives of their status in society. | Will improvise if they risk going out of business - because of the challenges they face, or if their current skills and capabilities permit them to develop new product lines that require minimal resources to produce. | Will improvise when faced with challenges by seeking new customers or new markets. | Will improvise only as a short-term measure of getting by. |
| Push Boundaries | <i>Would lack any motivation to push boundaries, as they are typically satisfied with their current product and market strategy.</i> | <i>Not likely to push boundaries because they innately seek to build new competencies that will enable them to develop new products.</i> | <i>Not likely to push boundaries as they are primarily not interested in developing new capabilities to develop new products.</i> | Will push boundaries because they are determined to go against all odds to be successful in business. |

Figure 1: Data Structure



Appendix 1: Summary description of 92 entrepreneurs

| Respondent | No. of employees | Nature of business | Age of entrepreneur in years | Number of years in business | Years of formal education |
|------------|------------------|--|------------------------------|-----------------------------|---------------------------|
| R1 | 4 | Electric Welding and Fabrication (EWF) | 38 | 6 | 9 |
| R2 | 5 | EWF | 47 | 11 | 9 |
| R3 | 3 | Book/Printing | 45 | 8 | 9 |
| R4 | 4 | Book/Printing | 46 | 5 | 9 |
| R5 | 4 | Book/Printing | 50 | 20 | 9 |
| R6 | 2 | Book/Printing | 35 | 8 | 9 |
| R7 | 3 | EWF | 40 | 15 | 12 |
| R8 | 3 | Carpenter | 43 | 18 | 8 |
| R9 | 1 | Carpenter | 31 | 8 | 0 |
| R10 | 4 | Carpenter | 30 | 14 | 9 |
| R11 | 2 | EWF | 49 | 16 | 9 |
| R12 | 1 | Carpenter | 35 | 15 | 6 |
| R13 | 1 | Carpenter | 45 | 23 | 6 |
| R14 | 1 | Book/Printing | 62 | 46 | 9 |
| R15 | 1 | EWF | 44 | 20 | 9 |
| R16 | 3 | Printing | 33 | 2 | 12 |
| R17 | 2 | Printing | 61 | 40 | 12 |
| R18 | 2 | Printing | 38 | 2 | 12 |
| R19 | 5 | Printing | 52 | 22 | 16 |
| R20 | 1 | Printing | 24 | 2 | 9 |
| R21 | 1 | Printing | 38 | 0.5 | 9 |
| R22 | 3 | Printing | 58 | 10 | 17 |
| R23 | 1 | Printing | 22 | 2 | 9 |
| R24 | 1 | Printing | 32 | 8 | 9 |
| R25 | 1 | Printing | 28 | 5 | 12 |
| R26 | 2 | Printing | 34 | 3 | 9 |
| R27 | 4 | EWF | 65 | 20 | 17 |
| R28 | 6 | EWF | 43 | 8 | 9 |
| R29 | 4 | Blacksmith | 56 | 27 | 9 |
| R30 | 4 | Scrap dealer | 44 | 20 | 9 |
| R31 | 2 | EWF | 29 | 4 | 9 |
| R32 | 1 | Kente Weaver | 39 | 8 | 9 |
| R33 | 43 | EWF | 56 | 27 | 12 |
| R34 | 3 | Carpenter | 31 | 9 | 12 |
| R35 | 3 | Wheelbarrow Manufacturer | 61 | 15 | 10 |
| R36 | 2 | EWF | 48 | 20 | 9 |
| R37 | 1 | EWF | 68 | 43 | 0 |
| R38 | 5 | Safe Manufacturer | 42 | 7 | 9 |
| R39 | 3 | Welding Machine Maker | 56 | 20 | 9 |
| R40 | 4 | EWF | 70 | 45 | 10 |
| R41 | 1 | Kente Weaver | 43 | 10 | 11 |
| R42 | 1 | Kente Weaver | 22 | 4 | 12 |
| R43 | 1 | Carpenter | 33 | 7 | 6 |
| R44 | 1 | Carpenter | 42 | 5 | 6 |
| R45 | 4 | Carpenter | 53 | 19 | 12 |
| R46 | 1 | Shoemaker | 21 | 1 | 9 |
| R47 | 1 | Shoemaker | 41 | 15 | 9 |

| | | | | | |
|-----|----|---------------------------------------|----|----|----|
| R48 | 1 | Carpenter | 34 | 15 | 6 |
| R49 | 2 | Carpenter | 65 | 41 | 10 |
| R50 | 1 | Kente Weaver | 37 | 10 | 12 |
| R51 | 1 | Kente Weaver | 23 | 1 | 12 |
| R52 | 15 | Kente Trader | 54 | 25 | 9 |
| R53 | 1 | Kente Weaver | 20 | 2 | 12 |
| R54 | 1 | Kente Weaver | 28 | 7 | 9 |
| R55 | 1 | Kente Weaver | 65 | 34 | 0 |
| R56 | 3 | Printing | 30 | 9 | 9 |
| R57 | 1 | Book Making | 32 | 4 | 9 |
| R58 | 1 | Printing | 31 | 7 | 10 |
| R59 | 1 | Printing | 37 | 5 | 11 |
| R60 | 2 | Electric Welding Machine Manufacturer | 48 | 20 | 9 |
| R61 | 1 | Coal Pot Maker | 46 | 24 | 4 |
| R62 | 2 | Blacksmith | 47 | 21 | 6 |
| R63 | 3 | EWf | 53 | 25 | 6 |
| R64 | 1 | EWf | 58 | 32 | 10 |
| R65 | 2 | EWf | 49 | 20 | 6 |
| R66 | 1 | Carpenter | 30 | 10 | 0 |
| R67 | 3 | Carpenter | 43 | 20 | 9 |
| R68 | 2 | Carpenter | 31 | 11 | 12 |
| R69 | 1 | Carpenter | 38 | 19 | 3 |
| R70 | 1 | Carpenter | 40 | 20 | 6 |
| R71 | 1 | Carpenter | 52 | 31 | 10 |
| R72 | 2 | Carpenter | 47 | 19 | 6 |
| R73 | 1 | Carpenter | 43 | 10 | 9 |
| R74 | 4 | Shoemaker | 31 | 6 | 6 |
| R75 | 2 | Shoemaker | 28 | 6 | 9 |
| R76 | 2 | Shoemaker | 37 | 16 | 9 |
| R77 | 2 | Shoemaker | 43 | 13 | 6 |
| R78 | 2 | Shoemaker | 41 | 20 | 9 |
| R79 | 1 | Shoemaker | 40 | 15 | 6 |
| R80 | 3 | Shoemaker | 38 | 17 | 6 |
| R81 | 7 | Foundry | 63 | 32 | 0 |
| R82 | 1 | Blacksmith | 46 | 9 | 9 |
| R83 | 1 | EWf | 38 | 10 | 11 |
| R84 | 4 | Kente & Souvenirs | 40 | 13 | 12 |
| R85 | 1 | Artist (Kente) | 54 | 21 | 12 |
| R86 | 1 | Kente Weaver | 34 | 10 | 12 |
| R87 | 1 | Kente Weaver | 70 | 46 | 0 |
| R88 | 3 | Kente Trader | 65 | 43 | 6 |
| R89 | 1 | Kente Weaver | 23 | 5 | 12 |
| R90 | 1 | Kente | 41 | 13 | 7 |
| R91 | 3 | Kente and Kente Souvenirs | 40 | 3 | 17 |
| R92 | 6 | Kente | 42 | 16 | 7 |

Appendix 2: Interview Protocol/Guide

Introduce myself

Ask for permission to record

1. Background of the interviewee and their business.
2. How is a typical day (week) of business to you? [Probe] What products or services is the business offering?
3. Did you think about registering your business when you were starting? Can you think of a time when you felt registering your business would have been good? Why did you feel that way?
4. Can you tell me about the resources you use in your business? [Probe] Where did you get the resources from when you started?
5. Would you say that you are okay with the resources you have for doing business? [Probe] Can you give me some examples or scenarios?
6. What are the most important or valuable resources you need to run your business? [Probe] Do you have these resources?
7. Probe why and how each resource mentioned is important to them.
8. You have run this type of business for the past years. Is this what you had in mind when you wanted to start doing business (here)? [Probe] What exactly did you consider when you started this business? Has that changed much? Why or why not? How has it (not) changed?
9. Can you think about a time in your business when so much changed? [Probe] When was that? How did you manage the situation?
10. How do you typically deal with your stakeholders? [Probe] Specific stakeholders like customers, suppliers, associations (in the cluster), local authorities, central government authorities, financiers, etc.?

Is it okay if we get back to you for some clarification or additional questions later?

Thank you very much for your help!

CHAPTER 3

ENTREPRENEURIAL PRE-ENTRY SEARCH IN THE INFORMAL ECONOMY

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Abstract

Informal economies are generally defined by high levels of new venture creation. To understand the process by which prospective entrepreneurs search for information before launching new ventures, we develop a theory of entrepreneurial pre-entry search in the informal economy. We predict larger volumes of information search by prospective entrepreneurs with more human capital. However, depending on the breadth and depth of their embeddedness in informal institutional domains, this effect can either be amplified or dampened. We find support for our theory with unique survey data from a large informal cluster in Ghana and provide important theoretical and policy insights on the entrepreneurship pre-entry stage in informal contexts.

Keywords: Entrepreneurial pre-entry stage, informal economy, human capital, informal institutional embeddedness, search

INTRODUCTION

To what extent do prospective entrepreneurs in the informal economy search for information before launching new ventures? New venture creation is essential for job creation, economic growth, and innovation (Schumpeter, 1934; Van Praag & Versloot, 2007). This is also true within the context of the informal economy (Webb et al., 2009; Williams & Nadin, 2010). The informal economy describes the parts of the economy that “*fail to adhere to the established institutional rules or are denied their protection*” (Feige, 1990, p. 990) and operate outside the reach of different levels and mechanisms of official governance (Guha-Khasnobis et al., 2006). Informality is particularly prevalent in most developing countries – for example, 89% of all workers in Sub-Saharan Africa are estimated to be employed in the informal economy (ILO, 2018). Despite this magnitude, the types of businesses founded in those settings are often of low quality, driven by necessity, and more likely to imitate than innovate (Dencker, Bacq, Gruber & Haas, 2021). Also, informal ventures typically suffer from lower levels of legitimacy than formal firms (Assenova & Sorenson, 2017) and are generally reluctant to formalize once established (Floridi et al., 2020).

We study the entrepreneurial pre-entry stage within the context of the informal economy. The pre-entry stage encapsulates a series of activities that prospective entrepreneurs engage in to learn (i.e., update their beliefs) about the viability and feasibility of their business idea (Bennett & Chatterji, 2019; Davidsson & Gruenhagen, 2020; Shepherd et al., 2021). According to Chen et al. (2018, p. 3), the information acquired during this stage “*shapes the entry decision, the beliefs of entrepreneurs at the start of the post-entry period, and subsequent learning and exit decisions*”. Prior research has largely focused on the antecedents of actual transitions into new venture creation (e.g., Davidsson & Honig, 2003; Lichtenstein, Carter, Dooley & Gartner, 2007), including the role of entrepreneurial intentions or attributes such as self-efficacy and overconfidence (e.g., Chen, Croson,

Elfenbein & Posen, 2018; Sieger & Minola, 2017; Wilson, Kickul, & Marlino, 2007). This prevalent focus on “nascent entrepreneurs” naturally limits the attention to early-stage founders who have undertaken some initial start-up (gestation) activities (Curtin & Reynolds, 2009), leaving prospective entrepreneurs who fail to launch their ventures or abandon their business ideas rather early in the entrepreneurial process off the radar of prior research (Yang & Aldrich, 2012). Studying the entrepreneurial pre-entry stage can thus assist us in understanding why some individuals successfully establish new ventures (of varying quality) while others never make the leap and start a business (Bennett & Chatterji, 2019).

Current theories of entrepreneurial pre-entry learning focus primarily on how entrepreneurs in relatively developed contexts learn about business opportunities depending on individual-level factors, such as education and experience (Bennett & Chatterji, 2019; Stappers & Andries, 2021). However, within the context of the informal economy, prospective entrepreneurs are generally refrained from accessing formal institutional benefits and are instead more strongly embedded in informal institutional domains (Webb et al., 2009, 2013). In developing countries and especially in contexts of large informal economic activity, entrepreneurship is to a large extent defined by necessity (Dahles & Prabawa, 2013; Devine & Kiggundu, 2016; Vermeire & Bruton, 2016), whereby ventures are created to fulfill basic physiological and safety needs (Dencker et al., 2021). Against this backdrop, this paper explores the following question: How do individual and external factors (separately and jointly) relate to the volume of information search prospective informal entrepreneurs conduct prior to entry?

We develop a set of hypotheses that explain how the extent of pre-entry search conducted by prospective informal entrepreneurs varies with their human capital endowments and the nature of their informal institutional embeddedness. Based on notions of information search, we first propose

a positive link between individuals' human capital and the extent of pre-entry search. Human capital endows prospective entrepreneurs with the necessary means to search for and absorb larger volumes of information. Second, individuals embedded in informal institutions (e.g., family or ethnic groups) can benefit from being proximal to particular information sources, thereby reducing the multiple costs incurred when acquiring that information elsewhere. Thus, we posit that individuals with a higher breadth of informal institutional embeddedness (i.e., access to more informal institutions) engage in more extensive information search, while individuals with a higher depth of informal institutional embeddedness (whose social ties are highly concentrated within few informal institutions) will engage in relatively sparser search. Finally, we propose an interplay between these internal and external factors such that individuals' breadth of informal institutional embeddedness *strengthens* the role played by their human capital in the pre-entry search, whereas their depth of informal institutional embeddedness *weakens* it, by making prospective entrepreneurs prioritize some sources of information and search more myopically for feedback within few informal institutions they trust the most.

To test our hypotheses, we rely on unique survey data from a sizeable informal cluster in Ghana covering 747 individuals who are either already established entrepreneurs or have intentions of becoming entrepreneurs in the future. We measure the extent of pre-entry search in three ways: via a) the number of pre-entry steps undertaken by prospective entrepreneurs to test the viability of their business idea (baseline analysis), b) the number of relatively difficult steps, and c) the type of search conducted based on different constellations of pre-entry steps identified in a cluster analysis. We find general support for our hypotheses. Importantly, our analyses reveal that informal institutional embeddedness can be a double-edged sword for prospective entrepreneurs in the informal economy: being broadly embedded in informal institutional domains contributes to more

extensive pre-entry search, but only when combined with high human capital endowments; being deeply embeddedness in only few of those informal institutional domains can, however, erode the gains that would otherwise accrue from individuals' human capital.

Our contributions are two-fold. First, our study adds to the long-lasting debates on the antecedents of new venture creation (e.g., Shepherd et al., 2021) and the emergent discussion on the importance of the entrepreneurial pre-entry stage (Bennett & Chatterji, 2019). By uncovering new explanations for why and how individuals engage in pre-entry learning, our study advances our understanding of new firm strategies and post-entry performance. Importantly, we unravel how human capital and informal institutional embeddedness interact in complex ways to foster prospective informal entrepreneurs' search as they consider launching their ventures. Assuming there is value in business planning on new venture performance (Burke et al., 2010), these findings can contribute to an enhanced understanding of why informal firms, once established, vary in their propensity to imitate rather than innovate. Second, by investigating heterogeneities in pre-entry search by entrepreneurs in the informal economy, we extend current theories of necessity entrepreneurship to contexts of informality. We suggest that the types of strategies typically followed by necessity entrepreneurs (e.g., Dencker et al., 2021; Nikiforou et al., 2019) may have deep roots in the pre-entry stage and strongly depend on the interaction between individuals' (lack of) human capital and their embeddedness in informal institutional domains. Entrepreneurship theories devoted to understanding necessity-driven venture creation should therefore embrace the complex interplay between individual and contextual factors and acknowledge that these dynamics may largely vary across informal and formal economy contexts.

THEORY AND HYPOTHESES

The entrepreneurial pre-entry stage

Extant research emphasizes that the decision to start a business should be regarded as a dynamic entrepreneurial process that includes a pre-entry stage, during which individuals engage in search to learn and update their beliefs about the viability and feasibility of their business ideas (Bennett & Chatterji, 2019; Chen et al., 2018; Woo et al., 1994). Each of those learning steps vary in the amount of costs and benefits to the prospective entrepreneur (Bennett & Chatterji, 2019). This way, prospective entrepreneurs can engage in search paths that enable them to receive feedback and update their beliefs about their prior assumptions and, ultimately, the quality of their business idea (Gavetti et al., 2012; Woo et al., 1994). Understanding the different learning steps that founders undertake prior to launching their ventures can uncover new explanations for the large heterogeneity in founding decisions, such as choice of industry and post-entry performance (Cao & Posen, 2022; Chen et al., 2018; Nikiforou et al., 2019).

Besides the value for prospective entrepreneurs of testing the quality of their business idea, we highlight that information search is costly and bears certain risks. Specifically, as prospective entrepreneurs face an abundance of information channels through which they can assess the viability of their ideas, the requirements for searching for and identifying the most valuable information are high. Prospective entrepreneurs can find themselves using substantial time and other resources managing sources of information that may or may not be relevant for testing their business idea. Thus, there are significant costs attached to searching for knowledge along multiple channels of information when assessing business ideas (Hansen, 1999). Precisely because this information search and early-stage tests are costly but essential, both theory and practice emphasize the value of information search for early stage ventures – for example, via business planning and/or

experimentation in a lean-startup approach (Burke et al., 2010; Delmar & Shane, 2003; Felin et al., 2020; Shepherd & Gruber, 2021). However, we know surprisingly little about how entrepreneurs undertake this information search prior to entry, especially within informal economy settings.

Entrepreneurship in the informal economy

Informal entrepreneurship is a widespread phenomenon. In a comparative study of entry into informal and formal entrepreneurship across the world, Autio & Fu, 2015 estimate that around 90% of all entrepreneurial activity in developing economies is informal (60% in developed/transition economies). In practice, there is a tendency to equate informal entrepreneurship with simple, imitative and unproductive ventures. For example, La Porta and Shleifer (2014: 268) suggest that *“the term ‘informal firm’ evokes the image of street hawkers selling goods out of baskets, or of eateries in front of homes”*. Similarly, in a recent review of informal entrepreneurship, Salvi, Belz and Bacq (2022, p. 6) state that *“when one thinks of informal entrepreneurs, it is common to visualize small producers or street vendors in developing economies, following the cliché that informal entrepreneurs are poor and engage in low performing, labor-intensive, entrepreneurial activities hidden from governmental authorities”*.

Clearly, informal entrepreneurship represents vast heterogeneity on a number of dimensions, including motivation, size, structure, strategy, and performance (e.g., La Porta and Shleifer, 2014; Salvi et al., 2022). For example, Godfrey (2011, p. 234) argues that *“the domain of the informal economy covers a conceptual area from the dusty developing country bazaar to the pristine developed country boardroom”*. George et al., 2016 explore why individuals become entrepreneurs in contexts of desperate poverty. Uzo & Mair, 2014 focus on informal economic activity conducted by firms in Nollywood, the Nigerian movie industry. Khavul et al., 2009 study the relationship between informal businesses in East Africa and the use of families and community

ties. As informal economic activities are typically more prevalent in areas of widespread poverty (Banerjee & Duflo, 2007) and in states with dysfunctional institutions and infringed social systems (Meagher, 2018; De Soto 2000), we argue that it is important to understand the mechanisms behind new venture creation in these contexts.

We build on prior work that emphasizes the role of both individual and contextual factors for entrepreneurial action (Davidsson & Honig, 2003; Khayesi, George & Antonakis, 2014; Shane, 2003; Uzo & Mair, 2014) and the importance of pre-entry learning (Bennett & Chatterji, 2019) to explain how differently individuals search for information about the viability of their business idea. Compared to individuals with relatively abundant employment opportunities, individuals in the informal economy typically have lower human capital endowments such as formal education, training, and relevant work experience (Dencker et al., 2021; Nikiforou, Dencker & Gruber, 2019). Furthermore, individuals in the informal economy are likely to turn to informal institutions in which they may be socially embedded – e.g., family, friends, ethnic or religious groups, and the broader community – as they search for information in the quest to learn and update their beliefs about the viability of their business ideas (Webb et al., 2013). As such, we emphasize that the informal economy is typically characterized by severe resource constraints, formal institutional voids, and fragile legal support and protection (Godfrey, 2011; Mair & Marti, 2009; Vermeire & Bruton, 2016; Webb et al., 2009). In the absence of formal institutional mechanisms, prospective entrepreneurs' human capital endowments as well as their informal institutional embeddedness will be fundamental to explain the extent of information search they undertake prior to entry.

The role of human capital in the entrepreneurial pre-entry search

Our first hypothesis concerns the relationship between individuals' human capital endowments and the extent of pre-entry search they undertake while assessing their business ideas in the informal economy. Human capital endowments are known to affect individuals' attention span, curiosity for different sources of information, awareness of the value of varying data sources, ability to process those same data and, ultimately, identification of market opportunities (Gruber et al., 2012; Marvel et al., 2016; Ucbasaran et al., 2008). As such, human capital enables learning (Hatch & Dyer, 2004; Marvel et al., 2016; Kanfer & Ackerman, 1989). It enhances individuals' capabilities of searching for information during the venture creation process (Unger et al., 2011). It also increases one's general stock of information and skills, including skills that are important in accessing information about their new venture idea (Marvel, 2013). For instance, scholars studying human capital and entrepreneurship argue that having more general human capital (e.g., formal education) is generally beneficial during the entrepreneurship process (Marvel, 2013; Ucbasaran et al., 2008, 2009). More precisely, having human capital is believed to enhance individuals' "*ability to comprehend, extrapolate, interpret, and apply new information*" in ways that individuals who lack prior knowledge cannot (Shane, 2000, p. 542). Furthermore, individuals who have some specific human capital (e.g., specific knowledge and experience about a market) are also equipped with specific information about how such markets function, and hence will be better placed to search for rich information about the quality of their business ideas (Marvel, 2013).

Based on the above, prospective informal entrepreneurs with greater human capital endowments will be better positioned to search for information related to the viability and quality of their business ideas. As a result of factors such as prior experience or formal education, these entrepreneurs will be able to internalize the value of searching extensively and gather multiple

feedback about their business ideas to test their viability. As human capital provides a toolkit for prospective entrepreneurs to overcome the costs associated with search, their information search will be less myopic (Levinthal and March, 1993). High-human capital individuals will then be able to engage in more extensive pre-entry learning, and include tasks that signal more commitment to the business and provide richer information about its viability. Hence, we hypothesize:

Hypothesis 1: The prospective informal entrepreneurs' human capital endowments are positively related with the extent of entrepreneurial pre-entry search.

The role of informal institutional embeddedness in the entrepreneurial pre-entry search

Given the importance of informal institutional domains in the informal economy, we extend our theory by examining the link between prospective entrepreneurs' informal institutional embeddedness and the extent of their pre-entry search. Specifically, we emphasize that individuals in the informal economy draw upon informal institutions in which they are embedded to learn about entrepreneurial opportunities (Uzo & Mair, 2014; Webb et al., 2013). These informal institutions serve as an alternative framework that compensates for the absence of strong formal institutions (Webb et al., 2009). Informal institutions serve as critical sources of advice, knowledge, and emotional support for prospective entrepreneurs (Webb et al., 2015). By being embedded in those informal institutions, individuals get access to information and resources that are vital for founding a venture (Jack & Anderson, 2002). Informal institutional embeddedness therefore nurtures trust, which then facilitates access to information and knowledge (Uzzi, 1997; Webb et al., 2015). By virtue of the familiarity and proximity to particular channels of information, informal institutional embeddedness can also shape the search process itself, by helping individuals to target their efforts toward some sources of knowledge, assign more value to some sources of information, and reduce the costs of acquiring that information elsewhere.

However, the way informal institutional embeddedness shapes prospective entrepreneurs' pre-entry search is not straightforward. We argue that informal institutional embeddedness may be both beneficial and detrimental to the entrepreneurs' extent of pre-entry search (Arregle et al., 2013; McKeever et al., 2014). On the one hand, scholars studying learning at the founding stage argue that the more sources of information are available, the more prospective founders learn (Ozgen & Baron, 2007). Consequently, we expect that prospective entrepreneurs who are *broadly* embedded (i.e., across various informal institutional domains) will have access to more information corridors and can collect more varied feedback from diverse sources about the viability of their idea (Shepherd et al., 2021).

On the other hand, being deeply embedded in a few informal institutions – i.e., assigning a disproportionate value to few informal domains – will limit individuals' attention and search to accessing information from a few trusted sources of information (Uzzi, 1997). Thus, having a high depth of informal institutional embeddedness will shape the priority assigned to some activities as their search for information. Individuals deeply embedded in few informal institutions will rely first and foremost on few of their close ties (family, friends, co-ethnic members or those with whom they share the same community or religion). More formally, we propose:

Hypothesis 2a: The prospective informal entrepreneurs' breadth of informal institutional embeddedness is positively related with the extent of entrepreneurial pre-entry search.

Hypothesis 2b: The prospective informal entrepreneurs' depth of informal institutional embeddedness is negatively related with the extent of entrepreneurial pre-entry search.

The interplay between human capital and informal institutional social embeddedness

Finally, we theorize how individual-level factors (human capital) interact with contextual factors (informal institutional embeddedness) and jointly shape the search that individuals undertake during the entrepreneurial pre-entry process. Scholars studying search at both the individual and

organizational levels argue that engaging in search across broader domains yields better outcomes than engaging in myopic search (Gavetti et al., 2012; Levinthal & March, 1993). Because individuals with more human capital are better placed to access and process larger volumes of information (Marvel, 2013; Shane, 2000), we expect that such individuals will be better positioned to overcome the costs of search. Thereby, they will be able to acquire and utilize information about their ideas when they are broadly embedded in multiple informal institutional domains.

On the contrary, when individuals' informal institutional embeddedness is deeply rooted in a few informal domains, the knowledge and information received from these particular interactions become key drivers of decision-making beyond the individuals' own education or experience. When individuals attribute more value to the information provided by some sources than others, their informal institutional embeddedness becomes biased towards one or two domains, making them engage in more myopic search and learn from fewer sources (Gavetti et al., 2012; Stuart & Podolny, 1996; Uzzi, 1997). Hence, individuals in the informal economy will defer to these trusting relations for insight and direction as they learn about their ideas. As the costs of search will increase, they limit their search to only a limited number of information corridors. Also, because individuals may access financial resources more easily from those relationships, they may prioritize their advice and neglect other sources of feedback (Bhagavatula et al., 2010). As such, even individuals with high levels of human capital are expected to become restricted in their search when their informal institutional embeddedness is deeply rooted in a few informal domains (e.g., their family or co-ethnic group). Therefore, our two final hypotheses postulate:

Hypothesis 3a: Prospective entrepreneurs with higher human capital will engage in more extensive pre-entry search when they are broadly embedded in different informal institutions.

Hypothesis 3b: Prospective entrepreneurs with higher human capital will engage in less extensive pre-entry search when they are deeply embedded in particular informal institutions.

DATA AND METHODS

Sample and data collection

To test our hypotheses, we designed an extensive survey targeting individuals working and/or living in the Accra New Town informal cluster in Ghana. The Accra Newtown locality is traditionally a residential area that has developed into a growing business hub for informal economic activities (Darbi & Knott, 2021). Hence, both domestic and commercial activities co-exist in the locality. At the heart of the locality is the main printing cluster that serves the entire country. This includes the manufacturers, (technical) service providers, importers, and resellers along the printing value chain. The locality is also home to other businesses such as selling, servicing, and repairing a wide variety of electronics and motorcycles. These core businesses are interspaced with a wide variety of other businesses across the cluster. These include importers and exporters of general goods, manufacturers of metal and wood products, and transport and construction services.

This geographical area is suitable for our study as it covers both non-entrepreneurs and (prospective) entrepreneurs and a large variation in family structures and business types. The survey was administered in the form of face-to-face structured interviews by a team of professional data collectors, who received training prior to data collection. The survey was divided in two main parts, administered at two distinct points in time, between October and December 2021. This two-stage data collection process has become standard in the literature to reduce common method bias (e.g., Scheaf et al., 2020) by allowing the key independent and dependent variables to be collected with an interval of time in between.

The first part of the survey included questions about individuals' current labor market status, demographics, personality, living conditions, human capital, and embeddedness in informal institutions (family, friends, religion, ethnicity, and community). A total of 1,095 individuals were

surveyed in this first wave. The second wave took place about two weeks later and targeted those who, in the first wave of data collection, were already entrepreneurs or were considering starting a business. The focus on the second stage of data collection was on each individual's entrepreneurial pre-entry stage and the multiple steps taken to assess the suitability of the business idea. A total of 754 individuals were surveyed again in the second wave (the remaining individuals were not surveyed again because they declared no entrepreneurial experience and no intention to become an entrepreneur in the first wave). Out of these, 438 had not yet made the transition into entrepreneurship but were considering to do so and taking steps towards that goal. These were therefore experiencing the pre-entry stage during the data collection. The remaining 316 individuals already had active businesses, so they could describe their pre-entry process retrospectively. Our hypotheses were therefore tested on the sample of individuals surveyed in both waves, which included 747 individuals with no missing information.⁶

Appendix 1 describes individuals surveyed in each wave. We conclude that the two samples are very similar, alleviating the concern that prospective and current entrepreneurs surveyed in the second wave are a selected sample in terms of observable characteristics (demographics or socio-economic status).

Measures

Dependent variable

Our dependent variable is the extent of pre-entry search, which we measure in three ways. First, we consider 27 possible steps prospective individuals could take to collect information about the viability of their business idea, and compute the total number of steps taken by each individual (which vary between 0 and 21). These activities broadly represent the different steps prospective

⁶ In a robustness check, we extend our baseline models and control for the stage in which respondents are (i.e. running a business already or considering founding one) to ensure that our findings are not driven by their different stages in the entrepreneurial process.

entrepreneurs may undertake to test the viability of their ideas (see Bennett & Chatterji, 2019; Lichtenstein, Carter, Dooley, & Gartner, 2007), with slight adaptations for the context under study, namely when it comes to tapping informal institutional domains that may be less relevant in other contexts. Secondly, we compute the number of difficult steps as an alternative dependent variable to show that our theory accounts for the complexity of steps involved in pre-entry search. Finally, we assess the type of search based on different constellations of the 27 possible pre-entry steps. This relies on a cluster analysis that identifies different profiles of entrepreneurs based on the steps they take. All three operationalizations capture the extent of information search and pre-entry learning about a business idea that a prospective entrepreneur engages in before founding.

Appendix 2 lists the 27 steps respondents were presented with and their frequency in the sample. Appendix 3a (3b) presents a histogram for the total number of (difficult) pre-entry steps taken by our respondents. We find rich variation in the pre-entry stage: while, on average, individuals take six different steps to assess their idea before launching a firm, more than 30% takes five or fewer steps, and about 20% take 10 or more steps prior to entry. Only 3% of the sample had taken no steps at all. We also observe interesting variation in the type of steps taken, with some being very common (e.g., saving money to invest in the business and discussing the idea with family or friends) and others being quite rare, despite the context (e.g., consulting members of their religious or ethnic groups for feedback on the idea or financial support).

Independent variables

Our independent variables include measures of individuals' human capital endowments (both general and specific) and informal institutional embeddedness (breadth and depth).

Human capital

Following prior research (e.g., Marvel, 2013), we have measured general human capital based on respondents' highest level of formal education completed (no formal education, primary education, junior high school, O'level, A'level, Senior high school, vocational training, diploma, HND Polytechnic, Degree, and Master's or above). After establishing a correspondence between these categories and the number of years of formal education they represent (see also Ucbasaran et al., 2009), we computed a dummy variable, *High Formal Education*, equal to 1 if the individual had at least 12 years of formal education and 0 otherwise. Also following prior work (e.g., Marvel, 2013; Marvel & Lumpkin, 2007), we measure specific human capital based on individuals' prior knowledge and hands-on experience on how to serve markets, customers and suppliers, rated by respondents in a 5-point Likert scale.⁷ *High prior knowledge and experience* is a dummy variable equal to 1 if the average rating of those items was equal to or higher than 4, and 0 otherwise. Table 1 provides descriptive statistics for these and other variables described below. About 14% of the respondents have *High Formal Education*, while 71% have *High prior knowledge and experience*, which indicates important variation in human capital endowments in our sample.

Informal Institutional Embeddedness

We assessed individuals' embeddedness in five informal institutional domains in which they could be embedded: family, friends, co-ethnic groups, local community, and religious groups (Uzo & Mair, 2014). Drawing from prior work (e.g., Dencker et al., 2009; Ng & Feldman, 2014; Wang & Altinay, 2012), we measure attachment, emotional, and hands-on support as they are important elements of informal institutional embeddedness at the pre-entry stage. We use three 5-point Likert scale items to measure embeddedness in each of those five informal institutions. For instance, to

⁷ For illustration, we asked individuals to rate statements from 1 (strongly disagree) to 5 (strongly agree) such as: "You have prior knowledge of ways to service/produce for the market you are/were targeting", "You have prior hands-on experiences in creating products and/or services similar to your (forthcoming) business".

measure embeddedness in the local community domain, we asked respondents to rate the following statements: *You a) have emotional support from...; b) have hands-on support from...; c) are tightly connected to... members of this Accra New Town community.*⁸

Based on these ratings, we measured individuals' *breadth* and *depth of informal institutional embeddedness*. We use the count of informal institutional domains in which the individual is highly embedded as a measure of *breadth*. Individuals are considered highly embedded within a certain informal institution if their average response to the three statements relative to that informal domain was equal to or higher than 4. Therefore, *breadth of informal institutional embeddedness* varies between 0 and 5, with higher values implying that individuals are broadly embedded in informal institutions. On average, our respondents are embedded in 1.6 domains (Table 1), and most (92.5%) declared to be embedded in their family (see Appendix 4a).

To measure an individual's *depth of informal institutional embeddedness*, we follow the logic of the Herfindahl-Hirschman index, often used to measure industry concentration. This allows us to measure how concentrated an individual's embeddedness is across the five possible informal institutions. The higher its value, the more relative weight an individual assigns to some informal institutions over others (e.g., the family). It is computed as follows, where i represents each of the five informal institutions and $Rating_i$ represents the average rating the individual gives to domain i (based on the 5-point Likert scales described above):

$$Depth\ of\ informal\ institutional\ embeddedness = \sum_{i=1}^5 \left(\frac{Rating_i}{\sum_{i=1}^5 Rating_i} \right)^2$$

Although inversely related (pairwise correlation = -0.36), these measures of breadth and depth capture different aspects of an individual's embeddedness in informal institutions.

*** Table 1 about here ***

⁸ The Cronbach alpha for each of those five domains ranges between 0.62 and 0.71.

Control variables

We control for a number of individual and environmental factors that may correlate with respondents' human capital and/or embeddedness, and also affect the number of steps they undertake to learn about the viability of their business ideas. Following prior studies, we control for individuals' age, gender, marital status, number of children, income, personality traits (big-5 personality traits, measured with a validated 15-item scale as in Lang et al. (2011), ethnicity, and industry, as all of these aspects could affect decisions related to starting a business and shape the costs and benefits of pre-entry learning (Aldrich & Waldinger, 1990; Dencker et al., 2009; Korunka et al., 2003; Marvel & Lumpkin, 2007; Nikiforou et al., 2019; Pittino et al., 2020). Detailed statistics for these control variables can be found in Table 1 and Appendix 1. Table 2 presents the correlation matrix for some of the key variables included in our models.

*** *Table 2 about here* ***

Estimation method

Given the nature of our baseline measure for the extent of pre-entry search – the total number of pre-entry steps taken by prospective entrepreneurs, a count variable that takes integer values between 0 and 21 – we use count models to formally test our hypotheses. Given the overdispersion observed in this variable (meaning that the variance is much larger than the mean (Gruber et al., 2012; Kaiser et al., 2015), visible both in Table 1 and in Appendix 3), we use Negative Binomial models. All models are estimated with robust standard errors. We use the same type of models when we use the number of difficult steps as an alternative dependent variable. Finally, we conduct a cluster analysis to identify groups of individuals in the informal economy who may engage in different types of search based on distinct combinations of pre-entry steps, and then estimate multinomial logit models to

assess how their human capital, informal institutional embeddedness, and the interplay between these two predict the type of search they conduct.

RESULTS

Pre-entry search based on the total number of steps taken

Table 3 summarizes our estimations predicting the total number of pre-entry steps that prospective entrepreneurs in the informal economy take. M1 includes only our control variables. M2 adds both human capital measures (formal education and prior knowledge and experience). M3 and M4 add, respectively, the breadth and the depth of informal institutional embeddedness. M5 to M8 add the respective interactions between our measures of embeddedness and human capital. M9 includes all interaction terms in the same specification as a consistency check.

We find support for Hypothesis 1, as the coefficients for both formal education and prior knowledge and experience are both positive and statistically significant in Model 4, i.e. prior to including any interaction terms ($p < 0.01$ in both cases). According to our estimations of average marginal effects, individuals with high formal education (prior knowledge and experience) take 1.4 (1.5) more steps than individuals without this human capital, which in relative terms represents a difference of 22% (24%) in the total number of steps taken prior to entry.

Contrary to our expectations, the coefficient of breadth of informal institutional embeddedness is not statistically significant ($p > 0.10$), providing no support for H2a. In contrast, we confirm a negative link between the individual's depth of informal institutional embeddedness and their number of entrepreneurial pre-entry steps ($p = 0.030$ in M4), supporting H2b. More precisely, we estimate a decrease of 5% in the number of pre-entry steps taken when the depth of embeddedness increases one-standard deviation from its mean value.

We use the remaining models of Table 3 to assess the validity of Hypotheses 3a and 3b. Both M5 and M6 report positive, yet marginally significant coefficients for the interaction terms between breadth of informal institutional embeddedness and either measure of human capital ($p < 0.10$). In M7 and M8, in turn, we find that the depth of embeddedness negatively moderates the association between human capital and pre-entry steps, but only for formal education ($p < 0.01$). Because these are non-linear models and interaction effects should not be directly interpreted from coefficient estimates, we compute marginal effects and illustrate the predicted number of steps for different levels of human capital and embeddedness in Figures 1 to 4.

Figures 1 and 2 provide clearer support for H3a: we observe that individuals with higher levels of human capital (either general or specific) undertake more pre-entry steps than individuals with lower human capital endowments, especially when they are more broadly embedded in informal domains. As theorized, individuals that can combine both internal (human capital) and external (embeddedness in informal institutions) resources will engage in more extensive pre-entry search, which may allow them to cover different and possibly complementary sources of information. In contrast, being broadly embedded in informal institutional domains alone does not equip individuals for extensive pre-entry search, if they lack human capital (general or specific).

The patterns visible in Figures 3 and 4 are also in line with our H3b. As can be seen, as individuals become more deeply embedded in few informal institutional domains, their pre-entry search becomes sparser even if they have high human capital (general or specific). In other words, the ability of high human capital individuals to engage in more extensive pre-entry search is “muted” when they are deeply embedded in few informal domains. Interestingly, we observe that, as those with high human capital become more deeply embedded in particular sources of informal institutional support, their advantage over individuals with less human capital is lost, as the latter

start taking as many pre-entry learning steps as the former. This confirms that high depth of informal institutional embeddedness may trump the value of human capital and make more educated and experienced individuals rather myopic in their pre-entry search.

In sum, with the exception of H2a, we find strong support for our hypotheses.

**** Table 3 about here ****

**** Figures 1-4 about here ****

Pre-entry search based on the total number of difficult steps taken

The second way in which we measure the extent of pre-entry search is to repeat our baseline analyses considering only the difficult, or high-cost steps taken by our respondents in the pre-entry stage. In so doing, we show that our findings are not an artifact of individuals engaging mostly in easy, low-cost (and possibly of lower value) steps. Appendix 2 marks with an “*” the 13 steps that are considered relatively more difficult or of higher cost. These steps were classified as such based on the independent rating by three experts on the context studied. On average, respondents took 3.3 difficult steps prior to entry, though rich variation exists in our data both in terms of number and type of pre-entry steps taken (cf. Appendix 2 and 3). We obtain very similar results to those presented in our baseline analyses (see Appendix 5).⁹

Different types of pre-entry search: cluster analysis

The third way in which we assess heterogeneities in the extent of pre-entry search is to identify different types of search that prospective entrepreneurs in the informal economy undertake. To do so, k-means cluster analysis was applied to uncover how individuals in our sample can be grouped (Gartner, 1990; Kubler et al., 2018), based on the combinations of steps they take during the pre-entry stage. The results of this analysis show three distinct clusters as described below, which we

⁹ Computing the relevant marginal effects after the estimation of these models produces patterns very similar to those illustrated in Figures 1 to 4. We can make them available upon request.

label as follows: sparse search, narrow search, and comprehensive search. Figures 5 and 6 show that while all groups often engage in activities that signal financial resource commitment to their idea, those who engage in narrow search take substantially more easy steps than those who engage in sparse search (e.g., they discuss their idea or consult experts within their family or circle of friends). However, none of these two clusters take “go-to-market” steps, which are relatively more difficult. Instead, individuals conducting comprehensive search take all three kinds of steps. Table 4 further describes each of these three clusters in terms of human capital endowments and the nature of their informal institutional embeddedness.

*** *Figures 5 and 6 about here* ***

*** *Table 4 about here* ***

Cluster 1: Sparse search

The first type of pre-entry search we identify is *sparse search*, which accounts for nearly 44% of our sample. On average, these individuals engage in three steps only (cf. Table 4). Their attention during the pre-entry stage is not drawn to gathering external information with which they could assess the potential of their business ideas; instead, they are rather execution-focused from the very beginning of the entrepreneurial process. Their primary objective is to save money and commit resources that are essential to starting their business. As can be seen in Figure 6, 62% of them save money to invest in pursuing the business idea, 37% take steps to acquire inputs that will enable them to launch their business. Only 30% of individuals in this cluster discuss their business idea with their family members. We thus confirm that these individuals engage in very limited search.

Taking a closer look at their characteristics, we notice that this is the cluster with the lowest level of education (see Table 4): only 11% have 12 or more years of formal education. With regards to their specific human capital, 64% of the members of this cluster have high prior knowledge and

experience related to the specific business idea they intend to pursue; yet this is still lower than the average of 71% reported by the full sample. With regards to their embeddedness in informal institutions, individuals who engaged in sparse search are exposed to slightly fewer corridors of information than the average informal entrepreneur surveyed. At the same time, this is the cluster most deeply embedded in few informal institutions, which indicates that individuals who search sparsely rely disproportionately on only a few trusted sources of information.

Cluster 2: Narrow search

About a third of our sample engages in a second type of pre-entry learning: *narrow search*. Their search is narrow because it is limited to the informal institutions in which they are embedded. On average, these individuals take 7 to 8 steps (cf. Table 4 and Figure 5), but they mostly test the viability of their business idea by consulting their family and friends, on top of securing financial resources and other inputs necessary to their business (see Figure 6). The additional activities carried by cluster 2 compared to cluster 1 are generally a combination of easy, low-cost steps.

Cluster 3: Comprehensive search (n=177, 23.7%)

About 28% of our sample stands out and engages in *comprehensive search*. Individuals in this cluster engage in 11 steps on average. They search for information about the viability and feasibility of their business ideas by taking both easy and more difficult steps. Besides securing financial and other resources, nearly all of them tested, somehow, the demand for their product or service (e.g. by doing pilot tests, talking to potential customers and soliciting feedback about their idea, or making a sale). The great majority also reaches out to informal sources of support. Yet, the most distinctive aspect of this cluster is their greater engagement in more costly, “go-to-market” steps.

Predicting different types of search

Following the cluster analysis described above, we employ a multinomial logistic regression model to assess, more formally, the interplay between individuals' human capital endowments and informal institutional embeddedness in predicting the type of search they engage prior to founding a business (see Appendix 6, in which the "sparse search" cluster is used as a baseline group). Models 1a to 6a estimate the probability of engaging in narrow instead of sparse search. Similarly, models 1b to 6b, estimate the probability of conducting comprehensive instead of sparse search. Appendix Figures 1a to 1d illustrate the marginal effects of human capital endowments on the probability of belonging to each cluster, depending on individuals' breadth and depth of informal institutional embeddedness. These are obtained after estimating models 3a-6b in Appendix 6.

Appendix Figure 1a depicts the marginal effects of having high (vs. low) formal education on the probability of belonging to each cluster for different values of breadth of embeddedness. Highly educated individuals are less likely than less educated individuals to search sparsely, especially when they are embedded in several informal institutional domains (see the first chart in this figure). Since this is the cluster taking the lowest number of pre-entry steps, these findings are consistent with H3a, which anticipated complementary effects between individuals' human capital and their breadth of embeddedness in predicting the extent of their pre-entry search. We find even stronger evidence supporting H3a when we use "high prior knowledge and experience" as a proxy for specific human capital. As Appendix Figure 1b shows, there is an increasing (decreasing) probability of carrying comprehensive (sparse) search when specific experience is combined with broad informal institutional embeddedness (third and first charts, respectively).

Appendix Figures 1c and 1d illustrate, in turn, how different types of search vary between high and low human capital individuals, depending on how deeply embedded they are in particular informal institutional domains over others. In line with H3b, we find an increasing (decreasing) probability of conducting sparse (comprehensive) search when highly educated individuals' informal institutional embeddedness is deeply rooted in few domains (first and third charts of Appendix Figure 1a). This result is more nuanced when we use "high prior knowledge and experience" as a proxy for individuals' human capital endowments (Appendix Figure 1d). This indicates that the risk of myopic search induced by high depth of embeddedness is less pronounced for individuals with specific human capital than for individuals with more generic human capital.

In sum, these supplemental analyses report evidence consistent with our Hypotheses 3a and Hypothesis 3b. Our three-fold analysis therefore gives broad support for our theory.

Ruling out alternative explanations

We performed three additional analyses to rule out potentially confounding explanations for our results. First, to ensure that our results are not driven by different motives for founding a firm, we extended our baseline models with control variables accounting for opportunity, necessity or other motives. The results (in Appendix 7) are similar to our baseline findings.

Second, given that individuals were at different stages of the entrepreneurial process, which could have affected the extent of their search, we estimated models that controlled for each individual's business stage (i.e. whether they were still taking steps towards founding or had already launched a business). Our key findings (in Appendix 8) remain overall consistent.

Finally, to further alleviate concerns that pre-entry search may vary with the type of industry of the business (which has been controlled for in all estimations), we show additional descriptive statistics in Appendix 9. We can see that the industry distribution across the three clusters is fairly

comparable. Examples of businesses launched within manufacturing in our sample include the production of baked and processed food, furniture, metal products, books, paper bags, household items, and handicrafts. Although manufacturing activities represent the most complex businesses in the informal economy – which could require more extensive pre-entry search – both sparse and narrow search clusters include a non-negligible share of individuals launching or already running businesses in manufacturing industries, confirming that the differences we detect in pre-entry search are not explained by the complexity of the businesses.

DISCUSSION AND CONCLUSION

The entrepreneurial pre-entry stage is an important yet largely overlooked stage of the dynamic entrepreneurial process. Studying the entrepreneurial pre-entry stage can contribute to our understanding of the roots of organizations, their varying quality, and the strategies that firms and entrepreneurs adopt throughout the various stages of the organization's life cycle. Based on rich survey data collected in the informal economy, this paper sheds new light on the role of individual factors (namely human capital), contextual factors (particularly informal institutional embeddedness), and their combination in influencing the nature and extent of search that prospective entrepreneurs undertake to learn about the viability of their business idea. While scholars have only recently begun empirically examining the entrepreneurial pre-entry stage, the emphasis of the literature has been limited to how prospective entrepreneurs navigate the entrepreneurial pre-entry process depending on individual-level factors (Bennett & Chatterji, 2019; Stappers & Andries, 2021). For instance, Bennett and Chatterji (2019) examine how three factors – opportunity costs, confidence levels, and prior industry experience – help explain the variation in the number of steps that entrepreneurs in developed contexts take prior to entry.

This paper extends this line of research by showing an important interplay between contextual and individual-level factors. In particular, our study demonstrates that an individual's environment, namely the depth of their informal institutional embeddedness can erode the gains that would otherwise accrue from individual-level factors such as human capital endowments during the crucial pre-entry search. We find that the social context in which prospective entrepreneurs are embedded can constrain their pre-entry search, even if they have rich human capital endowments. Human capital is essential for individuals to understand the value of pre-entry search, to process and integrate information from different sources, and to use that same information in their decision-making. Whereas the benefits of human capital can be strengthened when individuals are broadly embedded in a larger number of informal institutions, they can be offset when individuals are deeply embedded and, thus, reliant on only a few domains.

Furthermore, our study provides new evidence of the influence of informal institutions prior to starting a business. Our findings propose alternative explanations for why the informal economy and necessity entrepreneurship is riddled with replicative businesses. Prior research has explained that replication is pervasive among necessity entrepreneurs because of low levels of human capital, limited access to funding, weak property protection rights, and weak enforcement of laws (Alvarez & Barney, 2014; Dencker et al., 2021; Webb et al., 2013). For instance, Dencker and colleagues (2021, p. 68) argue that high levels of human capital will propel individuals to engage in "*skill-preserving entrepreneurial process*", while those with low levels of human capital will engage in replication. Our data suggest that when necessity entrepreneurs concentrate their embeddedness in a few informal domains, even those with abundant human capital will resort to myopic search, potentially leading to replicative entrepreneurial strategies. Given the results of our cluster analysis,

we foresee a relatively high likelihood for prospective entrepreneurs who engage in sparse (comprehensive) search to launch replicative (innovative) business.

While engaging in fewer activities may indicate a faster timespan from ideation to the actual decision to start a business, it may also indicate that individuals conducting relatively narrow search and targeted testing pre-entry do not consider many important indicators before deciding to explore (or abandon) their business idea. Because the richness of the information gathered during this pre-entry search process has consequences for post-entry venture outcomes (Bennett & Chatterji, 2019; Cao & Posen, 2022), one could speculate that entrepreneurs' pre-entry process will correlate with their post-entry performance. Some entrepreneurs may abandon promising business ideas too early or pursue less promising opportunities based on their limited and possibly biased pre-entry search process. We could therefore expect that individuals deeply embedded in a few institutional domains may undermine their post-entry performance if they pursue a business idea based on limited information collected pre-entry. While testing this association is out of the scope of this paper, our findings open a number of important research avenues that may help us explain heterogeneities in the type of business created by entrepreneurs in the informal economy, as well as variation in their post-entry performance.

This paper responds to calls to push the boundaries of our current understanding of embeddedness and encourage a multi-level, multi-dimensional account of embeddedness. By examining five different informal institutions in which individuals may be embedded, we can extend the boundaries of current literature beyond viewing embeddedness within just a single context (Korsgaard et al., 2022; Wigren-Kristofersen et al., 2019). We account for embeddedness from both a social and an institutional perspective, while prior research has adopted just one of these angles. In doing so, we shed light on the diversity of institutions in the informal economy (Nason & Bothello,

2022). Furthermore, by examining an individual's breadth and depth of informal institutional embeddedness, we attempt to provide some insights on how scholars can account for the dynamic and multi-dimensional nature of embeddedness, as opposed to the single-layered, dichotomous account of embeddedness that dominates the literature, simply considering entrepreneurs as either embedded or not (e.g., Korsgaard et al., 2022; Wigren-Kristofersen et al., 2019). Hence, we shift the attention from whether or not entrepreneurs are embedded to *how* they are embedded in different domains (how broadly, how deeply, and in which domains).

In addition to these future research avenues, we also concede some limitations of our study, which can inspire others to extend our work with different data and methods. Despite the strengths of our two-stage data collection process and the ability to collect rich information about the pre-entry stage of a large number of entrepreneurial ventures, we do not have a longitudinal design that allows us to assess the sequence in which those pre-entry steps were taken by different individuals. This also limits our ability to establish any causal relationships and explains our conservative, correlational interpretations. Ethnographic studies, field experiments, and alternative survey designs would certainly be welcome and strengthen our understanding of the complex search processes that entrepreneurs experience prior to entry, especially in informal contexts. Relatedly, we study entrepreneurs in the informal economy, who have very different forms of support compared to entrepreneurs in the developed world. Our findings may therefore not fully apply in formal contexts, so more research is needed before we can generalize our findings regarding the interplay between human capital and embeddedness to contexts in which informality is less prevalent. Finally, although we do our best to rule out a number of alternative explanations for our findings, we cannot fully disentangle whether the pre-entry search we assess in our study encompasses activities aimed at gathering information about the viability of the business or also building legitimacy (e.g.,

Zimmerman & Zeitz, 2002). Follow-up studies could explore the extent to which this is a primary concern among informal prospective entrepreneurs.

In conclusion, we find that while human capital is essential in searching for information at the very early stages of new venture creation, individuals who have their embeddedness deeply concentrated in only a few informal institutions stand the risk of not benefiting from their human capital endowments as they search for information about the viability of their business idea. This is important because we highlight the strong role of informal institutions at the founding of organizations in contexts where formal institutions are, at best, very weak, if not absent.

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TABLES

Table 1. Descriptive Statistics

| Variable | Mean | Std. Dev. | Min | Max |
|-------------------------------------|-------|-----------|-------|-------|
| Dependent Variable | | | | |
| Total number of pre-entry steps | 6.372 | 3.928 | 0.000 | 21.00 |
| Independent Variables | | | | |
| High formal education | 0.141 | 0.348 | 0.000 | 1.000 |
| High prior knowledge and experience | 0.711 | 0.454 | 0.000 | 1.000 |
| Breadth of embeddedness | 1.627 | 1.060 | 0.000 | 5.000 |
| Depth of embeddedness | 0.228 | 0.023 | 0.200 | 0.358 |
| Selected Control Variables | | | | |
| Female | 0.392 | 0.489 | 0.000 | 1.000 |
| Number of children | 1.363 | 1.752 | 0.000 | 10.00 |
| Neuroticism | 2.685 | 0.798 | 1.000 | 5.000 |
| Extraversion | 2.912 | 0.898 | 1.000 | 5.000 |
| Openness | 3.853 | 0.691 | 1.333 | 5.000 |
| Agreeableness | 4.093 | 0.583 | 1.667 | 5.000 |
| Conscientiousness | 4.227 | 0.576 | 2.000 | 5.000 |

N = 747. Descriptive statistics for other control variables are reported in Appendix 1.

Table 2. Correlation matrix

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|---------------------------------------|---------|---------|---------|---------|---------|---------|--------|---------|---------|--------|--------|-------|
| (1) Total number of pre-entry steps | 1.000 | | | | | | | | | | | |
| (2) High formal education | 0.144* | 1.000 | | | | | | | | | | |
| (3) High prior knowledge & experience | 0.164* | 0.071 | 1.000 | | | | | | | | | |
| (4) Breadth of embeddedness | 0.029 | -0.021 | -0.007 | 1.000 | | | | | | | | |
| (5) Depth of embeddedness | -0.069 | 0.052 | 0.017 | -0.359* | 1.000 | | | | | | | |
| (6) Female | -0.040 | -0.033 | -0.183* | -0.115* | 0.057 | 1.000 | | | | | | |
| (7) Number of children | 0.001 | -0.073* | 0.066 | 0.121* | -0.096* | 0.065 | 1.000 | | | | | |
| (8) Neuroticism | -0.094* | -0.062 | -0.005 | -0.096* | 0.011 | 0.223* | -0.006 | 1.000 | | | | |
| (9) Extraversion | -0.006 | -0.005 | -0.009 | 0.053 | -0.113* | 0.070 | 0.025 | 0.039 | 1.000 | | | |
| (10) Openness | 0.136* | 0.151* | 0.044 | 0.023 | 0.097* | -0.112* | -0.022 | -0.092* | -0.102* | 1.000 | | |
| (11) Agreeableness | 0.030 | 0.001 | -0.035 | 0.142* | -0.055 | -0.067 | 0.109* | -0.163* | -0.098* | 0.197* | 1.000 | |
| (12) Conscientiousness | 0.085* | 0.108* | 0.098* | -0.067 | 0.173* | -0.112* | 0.106* | -0.063 | -0.149* | 0.417* | 0.276* | 1.000 |

* p < 0.1. The correlation coefficients for other categorical variables presented in Appendix 1 are omitted to save space and available upon request.

Table 3. Predicting the total number of pre-entry steps

| | M1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 |
|---|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| High Formal Education | | 0.221 (0.067) [0.001] | 0.221 (0.067) [0.001] | 0.220 (0.066) [0.001] | 0.046 (0.134) [0.730] | 0.220 (0.067) [0.001] | 1.953 (0.616) [0.002] | 0.220 (0.066) [0.001] | 1.766 (0.720) [0.014] |
| Prior knowledge and experience (K & E) | | 0.233 (0.053) [0.000] | 0.233 (0.053) [0.000] | 0.236 (0.053) [0.000] | 0.231 (0.053) [0.000] | 0.126 (0.091) [0.168] | 0.238 (0.052) [0.000] | 0.245 (0.523) [0.640] | -0.186 (0.592) [0.754] |
| Breadth of embeddedness | | | 0.000 (0.018) [0.996] | -0.016 (0.019) [0.402] | -0.013 (0.018) [0.463] | -0.045 (0.036) [0.204] | | | -0.068 (0.038) [0.074] |
| Depth of embeddedness | | | | -2.419 (1.112) [0.030] | | | -1.044 (1.094) [0.340] | -2.160 (2.077) [0.298] | -2.235 (2.199) [0.309] |
| High F. Education x Breadth of embeddedness | | | | | 0.109 (0.061) [0.075] | | | | 0.036 (0.062) [0.560] |
| Prior K & E x Breadth of embeddedness | | | | | | 0.066 (0.040) [0.099] | | | 0.070 (0.043) [0.108] |
| High F. Education x Depth of embeddedness | | | | | | | -7.560 (2.693) [0.005] | | -7.007 (2.917) [0.016] |
| Prior K & E x Depth of embeddedness | | | | | | | | -0.040 (2.321) [0.986] | 1.368 (2.464) [0.579] |
| Female | 0.036 (0.050) [0.474] | 0.071 (0.050) [0.155] | 0.071 (0.050) [0.156] | 0.079 (0.050) [0.116] | 0.070 (0.050) [0.161] | 0.071 (0.050) [0.152] | 0.079 (0.050) [0.112] | 0.082 (0.050) [0.102] | 0.077 (0.049) [0.121] |
| Number of children | -0.010 (0.016) [0.536] | -0.003 (0.016) [0.878] | -0.003 (0.016) [0.878] | -0.004 (0.016) [0.825] | -0.001 (0.016) [0.944] | -0.005 (0.016) [0.773] | -0.005 (0.016) [0.774] | -0.004 (0.016) [0.807] | -0.006 (0.016) [0.712] |
| Neuroticism | -0.055 (0.029) [0.063] | -0.055 (0.029) [0.058] | -0.055 (0.029) [0.058] | -0.059 (0.029) [0.041] | -0.053 (0.029) [0.069] | -0.053 (0.029) [0.069] | -0.056 (0.029) [0.050] | -0.058 (0.029) [0.046] | -0.056 (0.029) [0.050] |
| Extraversion | -0.004 (0.025) [0.873] | -0.008 (0.025) [0.756] | -0.008 (0.025) [0.757] | -0.014 (0.025) [0.582] | -0.008 (0.025) [0.759] | -0.009 (0.025) [0.723] | -0.013 (0.025) [0.595] | -0.014 (0.025) [0.566] | -0.014 (0.024) [0.560] |
| Openness | 0.082 (0.036) [0.025] | 0.061 (0.037) [0.095] | 0.061 (0.037) [0.095] | 0.067 (0.037) [0.067] | 0.060 (0.037) [0.104] | 0.061 (0.037) [0.093] | 0.064 (0.037) [0.083] | 0.066 (0.037) [0.073] | 0.066 (0.036) [0.071] |
| Agreeableness | -0.016 (0.039) [0.679] | 0.001 (0.039) [0.978] | 0.001 (0.039) [0.979] | -0.006 (0.040) [0.881] | 0.005 (0.039) [0.901] | 0.005 (0.040) [0.895] | -0.002 (0.039) [0.962] | -0.009 (0.040) [0.826] | 0.006 (0.040) [0.875] |
| Conscientiousness | 0.052 (0.046) [0.257] | 0.032 (0.045) [0.483] | 0.032 (0.045) [0.486] | 0.045 (0.046) [0.327] | 0.034 (0.045) [0.456] | 0.030 (0.045) [0.504] | 0.050 (0.045) [0.266] | 0.047 (0.046) [0.302] | 0.047 (0.045) [0.301] |
| Constant | 1.629 (0.270) [0.000] | 1.563 (0.272) [0.000] | 1.563 (0.274) [0.000] | 2.110 (0.366) [0.000] | 1.557 (0.272) [0.000] | 1.620 (0.276) [0.000] | 1.740 (0.351) [0.000] | 2.028 (0.532) [0.000] | 2.099 (0.576) [0.000] |
| Pseudo R2 | 0.0174 | 0.0252 | 0.0252 | 0.0265 | 0.0259 | 0.0257 | 0.0282 | 0.0263 | 0.0289 |

Note: Negative binomial estimations. Robust standard errors in parentheses; p values in squared brackets.

N = 747. All models include dummy variables for industry, ethnicity, age group, income range, and marital status.

Table 4. Human capital and informal institutional embeddedness across clusters of pre-entry search

| | Full Sample (N=747) | Sparse search (N=325) | Narrow Search (N=245) | Comprehensive Search (N=177) |
|--|------------------------|--------------------------|--------------------------|---------------------------------|
| Average number of pre-entry steps | 6.372 | 3.003 | 7.473 | 11.034 |
| High formal education | 0.141 | 0.108 | 0.127 | 0.220 |
| Percentage with High Prior Knowledge and Experience | 0.711 | 0.637 | 0.743 | 0.802 |
| Breadth of embeddedness | 1.627 | 1.557 | 1.804 | 1.508 |
| Depth of embeddedness | 0.228 | 0.231 | 0.224 | 0.227 |

FIGURES

Figure 1. Total number of pre-entry steps depending on individuals' general human capital (formal education) and breadth of informal institutional embeddedness

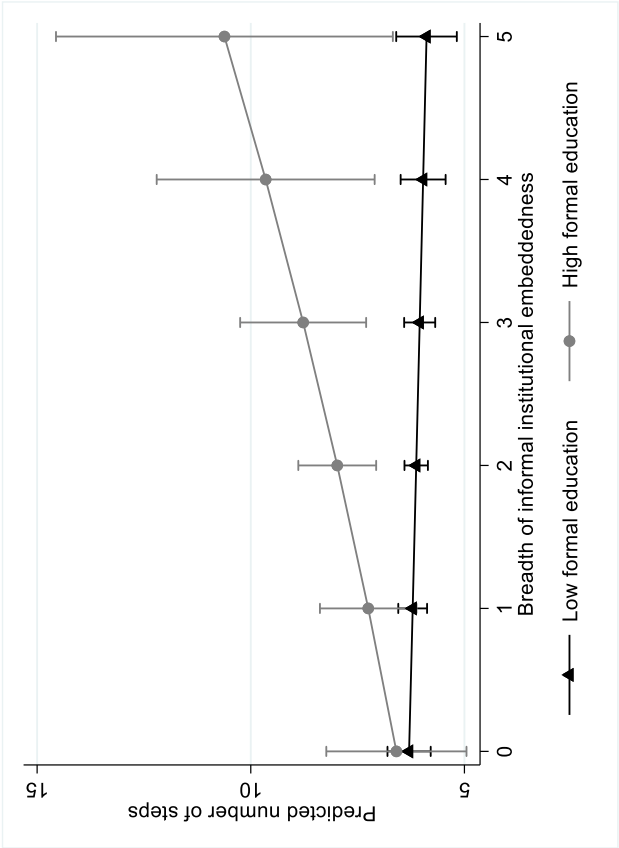


Figure 2. Total number of pre-entry steps depending on individuals' specific human capital (prior knowledge and experience) and breadth of informal institutional embeddedness

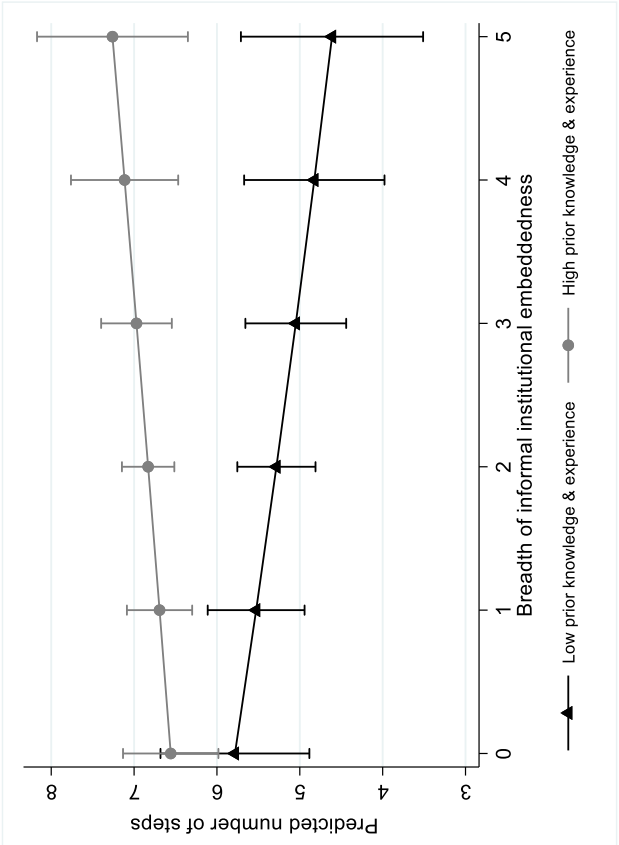


Figure 3. Total number of pre-entry steps depending on individuals' general human capital (formal education) and depth of informal institutional embeddedness

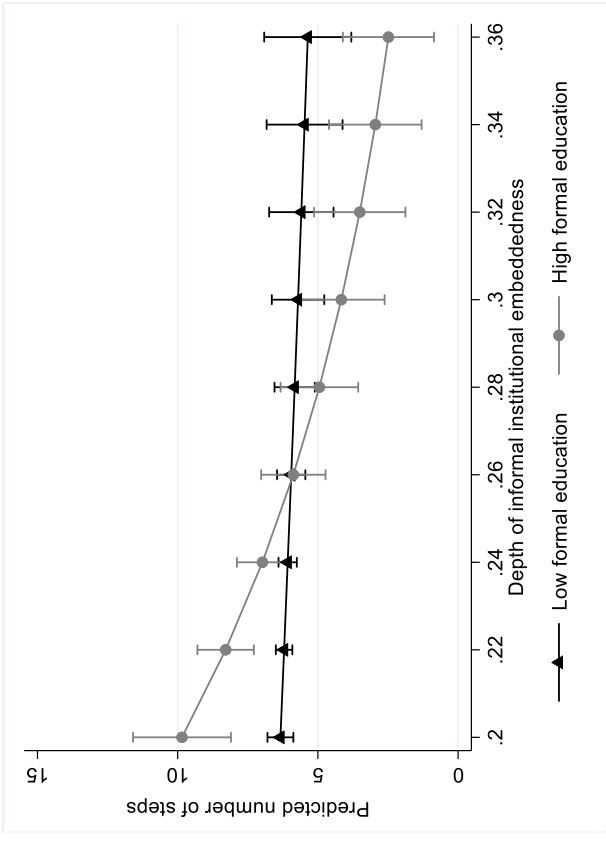


Figure 4. Total number of pre-entry steps depending on individuals' specific human capital (prior knowledge and experience) and depth of informal institutional embeddedness

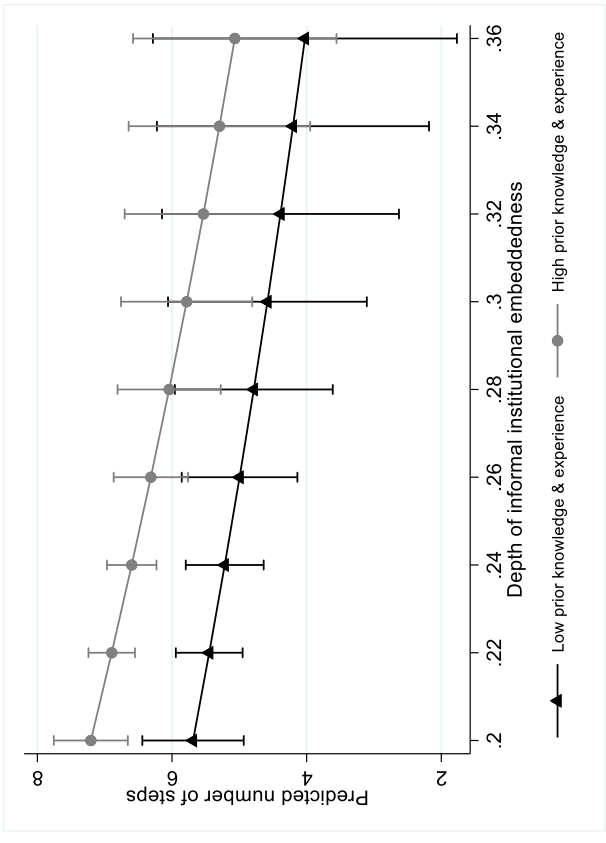


Figure 5. Number and type of steps taken by each clusters of prospective entrepreneurs in the informal economy

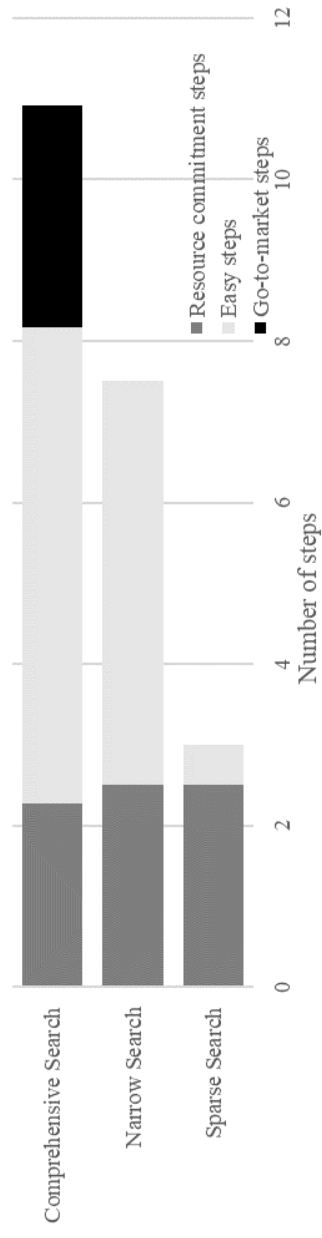
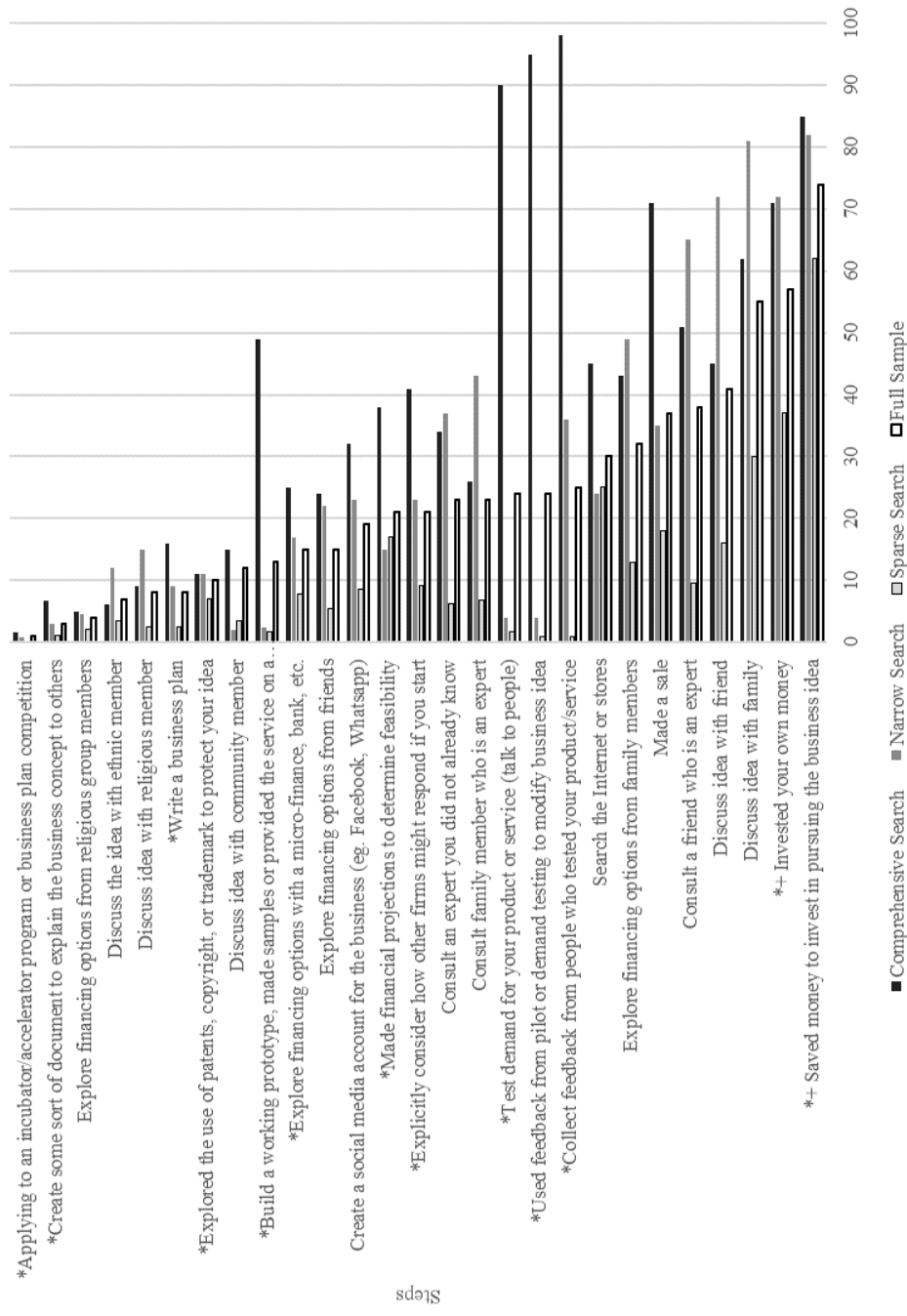


Figure 6. Percentage of steps taken by individuals in the full sample and within each cluster of pre-entry search



APPENDIX

Appendix 1. Descriptive statistics for individuals surveyed in the first and second waves

| | First wave (N = 1,095) | Second wave (N = 747) |
|--|------------------------|-----------------------|
| Age | Percent | Percent |
| 18-24 | 24.79 | 23.43 |
| 25-34 | 33.39 | 32.80 |
| 35-44 | 23.15 | 25.30 |
| 45-54 | 10.98 | 11.38 |
| 55-64 | 5.31 | 4.95 |
| 65 and Above | 2.10 | 2.01 |
| I won't say | 0.27 | 0.13 |
| Sex (Female) | 39.07 | 39.22 |
| Marital Status | | |
| Single | 58.97 | 57.83 |
| Currently married or partnered | 35.62 | 36.81 |
| Divorced, separated or widowed | 5.13 | 4.95 |
| I won't say | 0.27 | 0.40 |
| Income | | |
| No income GH¢0 | 9.71 | 7.90 |
| Less than GH¢400 | 14.93 | 15.53 |
| Above GH¢400 - But less than GH¢1,000 | 45.79 | 48.06 |
| Above GH¢1000 - But less than GH¢2,500 | 17.40 | 17.67 |
| Above GH¢2,500 - But less than GH¢5,000 | 3.02 | 3.21 |
| Above GH¢5,000 - But less than GH¢10,000 | 0.82 | 0.80 |
| Above GH¢10,000** | 0.18 | 0.27 |
| I don't know | 5.68 | 4.82 |
| I won't say | 2.47 | 1.74 |
| Number of children | | |
| 0 | 52.11 | 49.80 |
| 1 | 12.36 | 12.05 |
| 2 | 12.36 | 13.25 |
| 3 | 11.45 | 12.18 |
| 4 | 6.96 | 7.76 |
| 5 | 2.20 | 2.41 |
| 6 | 1.28 | 1.34 |
| 7 | 0.27 | 0.27 |
| 8 | 0.46 | 0.40 |
| 9 | 0.27 | 0.40 |
| 10 | 0.18 | 0.13 |
| 16 | 0.09 | 0 |
| Ethnicity | | |
| Akan (Non-Kwahu) | 39.10 | 40.29 |
| Akan (Kwahu) | 8.33 | 9.64 |
| Nzema | 0.55 | 0.54 |
| Ga/Ga-Adangbe | 15.48 | 14.99 |
| Ewe | 20.15 | 19.14 |
| Mole-Dagbane | 3.94 | 4.28 |
| Guan | 0.46 | 0.54 |
| Other: Please state | 11.54 | 10.17 |
| I won't say | 0.46 | 0.40 |
| Industry of idea | | |
| Undisclosed industries | 48.86* | 25.17 |
| Manufacturing | 8.95 | 13.12 |
| Re-Selling | 23.56 | 34.40 |
| Services | 18.63 | 27.31 |

*Those who are not entrepreneurs and do not have any business idea in the first wave have not been asked in which industry they have a business idea (not applicable to them). Therefore, those individuals have “undisclosed industries”, which explains the larger representation of this category in the first wave. These statistics are only shown for comparison purposes with individuals in the second wave.

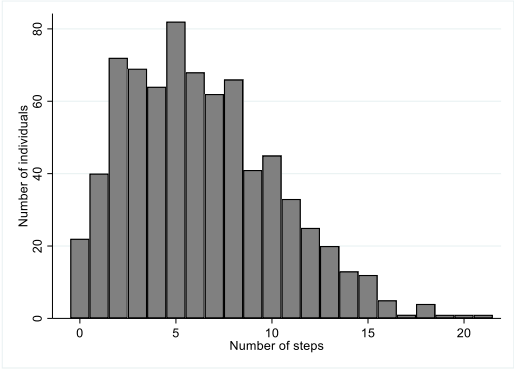
** GH¢100 was equivalent to 16.6 USD at the time of data collection

Appendix 2. List of pre-entry steps and their frequency in the sample (N = 747)

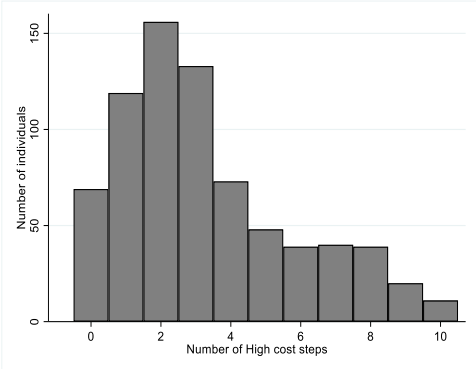
| | Variable | Mean |
|----|---|-------|
| 1 | *+Saved money to invest in pursuing the business idea | 0.744 |
| 2 | *+Invested your own money | 0.566 |
| 3 | Discuss idea with family | 0.545 |
| 4 | Discuss idea with friend | 0.414 |
| 5 | Consult a friend who is an expert | 0.379 |
| 6 | Made a sale | 0.364 |
| 7 | Explore financing options from family members | 0.319 |
| 8 | Search the Internet or stores | 0.297 |
| 9 | *Collect feedback from people who tested your product/service | 0.248 |
| 10 | *Used feedback from pilot or demand testing to modify business idea | 0.242 |
| 11 | *Test demand for your product or service (talk to people) | 0.236 |
| 12 | Consult family member who is an expert | 0.233 |
| 13 | Consult an expert you did not already know | 0.232 |
| 14 | *Explicitly consider how other firms might respond if you start | 0.214 |
| 15 | *Made financial projections to determine feasibility | 0.213 |
| 16 | Create a social media account for the business (eg. Facebook, Whatsapp) | 0.187 |
| 17 | Explore financing options from friends | 0.154 |
| 18 | *Explore financing options with a micro-finance, bank, etc. | 0.149 |
| 19 | *Build a working prototype, made samples or provided the service on a pilot basis | 0.134 |
| 20 | Discuss idea with community member | 0.115 |
| 21 | *Explored the use of patents, copyright, or trademark to protect your idea | 0.092 |
| 22 | *Write a business plan | 0.078 |
| 23 | Discuss idea with religious member | 0.076 |
| 24 | Discuss the idea with ethnic member | 0.068 |
| 25 | Explore financing options from religious group members | 0.036 |
| 26 | *Create some sort of document to explain the business concept to others | 0.031 |
| 27 | *Applying to an incubator/accelerator program or business plan competition | 0.007 |

Note: * denotes difficult steps, i.e. go-to-market steps (*) and resource commitment steps (*+)

Appendix 3a. Histogram for the number of pre-entry steps



Appendix 3b. Histogram for the number of difficult, high-cost pre-entry steps



Appendix 4.

Panel A. Five types of embeddedness in the sample

| Variable | Mean |
|--------------------------------|-------|
| Family embeddedness | 0.925 |
| Friendship embeddedness | 0.281 |
| Religious embeddedness | 0.212 |
| Ethnic embeddedness | 0.098 |
| (Local) community embeddedness | 0.111 |

Panel B. Breadth of informal institutional embeddedness in the sample

| Count of domains in which the individuals are embedded | Percentage |
|--|------------|
| 0 | 4.28 |
| 1 | 56.76 |
| 2 | 21.02 |
| 3 | 10.04 |
| 4 | 5.76 |
| 5 | 2.14 |

Appendix 5. Negative binomial results for number of high-cost/difficult pre-entry steps

| | M1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 |
|---|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| High Formal Education | | 0.253 (0.084) [0.003] | 0.253 (0.084) [0.003] | 0.254 (0.083) [0.002] | 0.121 (0.180) [0.500] | 0.253 (0.084) [0.003] | 2.178 (0.744) [0.003] | 0.255 (0.083) [0.002] | 2.171 (0.888) [0.014] |
| Prior knowledge and experience (K & E) | | 0.314 (0.064) [0.000] | 0.315 (0.064) [0.000] | 0.318 (0.064) [0.000] | 0.314 (0.064) [0.000] | 0.149 (0.110) [0.177] | 0.320 (0.063) [0.000] | 0.724 (0.586) [0.216] | 0.146 (0.642) [0.820] |
| Breadth of embeddedness | | | -0.014 (0.023) [0.552] | -0.033 (0.025) [0.185] | -0.024 (0.024) [0.306] | -0.088 (0.048) [0.065] | | | -0.103 (0.048) [0.033] |
| Depth of embeddedness | | | | -2.806 (1.235) [0.023] | | | -0.942 (1.178) [0.424] | -1.060 (2.289) [0.643] | -1.421 (2.309) [0.538] |
| High F. Education x Breadth of embeddedness | | | | | 0.083 (0.088) [0.345] | | | | -0.004 (0.088) [0.962] |
| Prior K & E x Breadth of embeddedness | | | | | | 0.103 (0.053) [0.052] | | | 0.100 (0.056) [0.072] |
| High F. Education x Depth of embeddedness | | | | | | | -8.411 (3.230) [0.009] | | -8.348 (3.541) [0.018] |
| Prior K & E x Depth of embeddedness | | | | | | | | -1.801 (2.586) [0.486] | 0.063 (2.666) [0.981] |
| Female | 0.099 (0.059) [0.095] | 0.142 (0.059) [0.016] | 0.139 (0.059) [0.019] | 0.147 (0.059) [0.013] | 0.138 (0.059) [0.020] | 0.140 (0.059) [0.018] | 0.148 (0.059) [0.012] | 0.153 (0.059) [0.010] | 0.143 (0.059) [0.014] |
| Number of children | 0.001 (0.020) [0.980] | 0.008 (0.020) [0.702] | 0.008 (0.020) [0.689] | 0.007 (0.021) [0.732] | 0.009 (0.020) [0.654] | 0.005 (0.020) [0.818] | 0.006 (0.021) [0.778] | 0.006 (0.020) [0.755] | 0.003 (0.021) [0.886] |
| Neuroticism | -0.061 (0.036) [0.088] | -0.064 (0.036) [0.075] | -0.065 (0.036) [0.070] | -0.070 (0.036) [0.052] | -0.063 (0.036) [0.080] | -0.062 (0.036) [0.087] | -0.065 (0.035) [0.067] | -0.064 (0.036) [0.073] | -0.064 (0.035) [0.067] |
| Extraversion | -0.017 (0.031) [0.578] | -0.023 (0.031) [0.445] | -0.022 (0.031) [0.469] | -0.029 (0.031) [0.354] | -0.022 (0.031) [0.476] | -0.023 (0.031) [0.449] | -0.029 (0.031) [0.344] | -0.029 (0.031) [0.344] | -0.029 (0.031) [0.349] |
| Openness | 0.149 (0.046) [0.001] | 0.127 (0.046) [0.006] | 0.127 (0.046) [0.005] | 0.134 (0.046) [0.004] | 0.126 (0.046) [0.006] | 0.128 (0.046) [0.005] | 0.129 (0.046) [0.005] | 0.130 (0.046) [0.005] | 0.132 (0.046) [0.004] |
| Agreeableness | -0.085 (0.048) [0.076] | -0.062 (0.046) [0.180] | -0.059 (0.047) [0.210] | -0.066 (0.048) [0.166] | -0.056 (0.047) [0.235] | -0.054 (0.047) [0.255] | -0.063 (0.047) [0.182] | -0.071 (0.047) [0.130] | -0.053 (0.048) [0.270] |
| Conscientiousness | 0.045 (0.056) [0.426] | 0.021 (0.055) [0.708] | 0.017 (0.056) [0.763] | 0.032 (0.056) [0.565] | 0.018 (0.055) [0.742] | 0.015 (0.055) [0.792] | 0.039 (0.055) [0.475] | 0.037 (0.056) [0.500] | 0.031 (0.055) [0.568] |
| Constant | 1.199 (0.327) [0.000] | 1.092 (0.329) [0.001] | 1.117 (0.332) [0.001] | 1.747 (0.428) [0.000] | 1.110 (0.330) [0.001] | 1.211 (0.333) [0.000] | 1.240 (0.408) [0.002] | 1.296 (0.587) [0.027] | 1.492 (0.605) [0.014] |
| Pseudo R2 | 0.0322 | 0.0437 | 0.0438 | 0.0453 | 0.0441 | 0.0448 | 0.0470 | 0.0450 | 0.0484 |

Note: Robust standard errors in parentheses; p values in squared brackets. N = 747. All models include dummy variables for industry, ethnicity, age group, income range, and marital status. A list of difficult pre-entry steps can be found in Appendix 2.

Appendix 6. Multinomial logistic regression predicting the type of pre-entry search
(Baseline cluster = Sparse search)

| | M1a | M1b | M2a | M2b | M3a | M3b | M4a | M4b | M5a | M5b | M6a | M6b |
|---|------------------------------|------------------------------|-----------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------------------------|--------------------------------|------------------------------|------------------------------|
| High Formal Education | 0.375 (0.299) [0.209] | 0.965 (0.305) [0.002] | 0.393 (0.297) [0.185] | 0.972 (0.299) [0.001] | -0.600 (0.602) [0.319] | 0.501 (0.652) [0.442] | 0.371 (0.298) [0.213] | 0.974 (0.302) [0.001] | 5.032 (3.307) [0.128] | 8.139 (2.751) [0.003] | 0.400 (0.297) [0.178] | 0.975 (0.300) [0.001] |
| Prior knowledge and experience (K & E) | 0.140 (0.086) [0.106] | -0.077 (0.112) [0.492] | | | 0.088 (0.090) [0.330] | -0.101 (0.117) [0.390] | 0.033 (0.140) [0.812] | -0.586 (0.246) [0.017] | | | | |
| Breadth of embeddedness | 0.546 (0.211) [0.009] | 0.978 (0.250) [0.000] | 0.571 (0.213) [0.007] | 0.989 (0.253) [0.000] | 0.537 (0.211) [0.011] | 0.974 (0.251) [0.000] | 0.258 (0.366) [0.481] | 0.015 (0.435) [0.973] | 0.572 (0.214) [0.007] | 0.992 (0.252) [0.000] | 2.606 (2.076) [0.209] | 2.954 (2.266) [0.192] |
| Depth of embeddedness | | | - 13.481 (4.463) [0.003] | -9.596 (4.916) [0.051] | | | | | -11.000 (4.628) [0.017] | -4.071 (5.047) [0.420] | -7.556 (7.630) [0.322] | -3.687 (8.535) [0.666] |
| High F. Education x Breadth | | | | | 0.599 (0.296) [0.043] | 0.307 (0.379) [0.417] | | | | | | |
| Prior K & E x Breadth | | | | | | | 0.182 (0.174) [0.296] | 0.678 (0.271) [0.012] | | | | |
| High F. Education x Depth | | | | | | | | | -19.924 (14.346) [0.165] | -30.867 (11.694) [0.008] | | |
| Prior K & E x Depth | | | | | | | | | | | -8.999 (9.171) [0.326] | -8.605 (9.946) [0.387] |
| Female | -0.079 (0.211) [0.708] | 0.575 (0.237) [0.015] | -0.063 (0.214) [0.767] | 0.635 (0.239) [0.008] | -0.087 (0.212) [0.683] | 0.571 (0.237) [0.016] | -0.079 (0.211) [0.707] | 0.582 (0.237) [0.014] | -0.071 (0.215) [0.742] | 0.618 (0.239) [0.010] | -0.066 (0.214) [0.757] | 0.631 (0.240) [0.009] |
| Number of children | -0.057 (0.080) [0.480] | -0.038 (0.089) [0.674] | -0.065 (0.082) [0.425] | -0.049 (0.091) [0.588] | -0.052 (0.081) [0.519] | -0.034 (0.090) [0.704] | -0.064 (0.082) [0.434] | -0.055 (0.091) [0.545] | -0.069 (0.082) [0.400] | -0.052 (0.091) [0.566] | -0.067 (0.083) [0.420] | -0.048 (0.091) [0.598] |
| Neuroticism | -0.242 (0.126) [0.055] | -0.076 (0.134) [0.571] | -0.270 (0.129) [0.037] | -0.080 (0.134) [0.550] | -0.232 (0.127) [0.067] | -0.068 (0.134) [0.613] | -0.237 (0.126) [0.061] | -0.065 (0.135) [0.629] | -0.268 (0.129) [0.038] | -0.081 (0.134) [0.547] | -0.259 (0.131) [0.048] | -0.069 (0.134) [0.607] |
| Extraversion | 0.071 (0.107) [0.508] | -0.002 (0.120) [0.989] | 0.049 (0.108) [0.650] | -0.033 (0.121) [0.784] | 0.074 (0.107) [0.492] | 0.000 (0.120) [1.000] | 0.070 (0.107) [0.514] | -0.006 (0.121) [0.963] | 0.056 (0.109) [0.605] | -0.031 (0.122) [0.799] | 0.055 (0.108) [0.609] | -0.028 (0.121) [0.819] |
| Openness | -0.065 (0.149) [0.661] | 0.199 (0.181) [0.272] | -0.034 (0.149) [0.822] | 0.209 (0.181) [0.249] | -0.067 (0.149) [0.651] | 0.196 (0.181) [0.278] | -0.061 (0.149) [0.681] | 0.207 (0.182) [0.256] | -0.035 (0.149) [0.815] | 0.205 (0.181) [0.259] | -0.038 (0.150) [0.799] | 0.205 (0.182) [0.259] |
| Agreeableness | 0.121 (0.166) [0.469] | -0.114 (0.202) [0.571] | 0.101 (0.170) [0.553] | -0.171 (0.206) [0.408] | 0.137 (0.168) [0.416] | -0.108 (0.202) [0.593] | 0.133 (0.167) [0.428] | -0.085 (0.204) [0.676] | 0.116 (0.169) [0.492] | -0.128 (0.207) [0.537] | 0.102 (0.171) [0.551] | -0.167 (0.208) [0.421] |
| Conscientiousness | -0.051 (0.185) [0.784] | 0.450 (0.227) [0.047] | 0.005 (0.184) [0.978] | 0.549 (0.233) [0.018] | -0.040 (0.185) [0.831] | 0.459 (0.228) [0.044] | -0.058 (0.186) [0.756] | 0.437 (0.228) [0.055] | 0.019 (0.183) [0.919] | 0.553 (0.229) [0.016] | 0.004 (0.184) [0.983] | 0.542 (0.233) [0.020] |
| Constant | -0.367 (1.121) [0.743] | -2.173 (1.293) [0.093] | 2.777 (1.484) [0.061] | -0.256 (1.656) [0.877] | -0.435 (1.122) [0.698] | -2.218 (1.289) [0.085] | -0.239 (1.135) [0.833] | -1.592 (1.304) [0.222] | 2.114 (1.510) [0.162] | -1.629 (1.712) [0.341] | 1.400 (2.049) [0.495] | -1.625 (2.299) [0.480] |
| Pseudo R2 | 0.124 | 0.124 | 0.128 | 0.128 | 0.126 | 0.126 | 0.128 | 0.128 | 0.132 | 0.132 | 0.129 | 0.129 |

Note: Robust standard errors in parentheses; p values in squared brackets. N = 747. All models include dummy variables for industries, ethnicity, age group, income range, and marital status.

Appendix 7. Number of pre-entry steps, controlling for entrepreneurial motivations

| | M1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 |
|---|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| High Formal Education | | 0.214 (0.067) [0.001] | 0.214 (0.067) [0.001] | 0.213 (0.066) [0.001] | 0.021 (0.133) [0.875] | 0.213 (0.067) [0.001] | 1.875 (0.630) [0.003] | 0.213 (0.066) [0.001] | 1.598 (0.739) [0.030] |
| Prior knowledge and experience (K & E) | | 0.239 (0.053) [0.000] | 0.239 (0.053) [0.000] | 0.244 (0.053) [0.000] | 0.238 (0.053) [0.000] | 0.124 (0.091) [0.173] | 0.245 (0.052) [0.000] | 0.319 (0.531) [0.548] | -0.122 (0.602) [0.840] |
| Breadth of embeddedness | | | -0.007 (0.018) [0.709] | -0.023 (0.020) [0.241] | -0.022 (0.019) [0.246] | -0.056 (0.036) [0.120] | | | -0.079 (0.039) [0.041] |
| Depth of embeddedness | | | | -2.456 (1.136) [0.031] | | | -1.021 (1.122) [0.363] | -1.898 (2.117) [0.370] | -2.175 (2.252) [0.334] |
| High F. Education x Breadth of embed. | | | | | 0.120 (0.061) [0.050] | | | | 0.052 (0.063) [0.413] |
| Prior K & E x Breadth of embed. | | | | | | 0.071 (0.040) [0.079] | | | 0.073 (0.044) [0.098] |
| High F. Education x Depth of embed. | | | | | | | -7.250 (2.756) [0.009] | | -6.410 (3.001) [0.033] |
| Prior K & E x Depth of embed. | | | | | | | | -0.337 (2.359) [0.886] | 1.100 (2.514) [0.662] |
| Female | 0.026 (0.050) [0.605] | 0.063 (0.050) [0.208] | 0.061 (0.050) [0.225] | 0.070 (0.050) [0.163] | 0.059 (0.050) [0.233] | 0.062 (0.050) [0.218] | 0.072 (0.050) [0.148] | 0.075 (0.050) [0.137] | 0.068 (0.050) [0.170] |
| Number of children | -0.009 (0.016) [0.573] | -0.002 (0.016) [0.900] | -0.002 (0.016) [0.912] | -0.003 (0.016) [0.852] | -0.000 (0.016) [0.986] | -0.004 (0.016) [0.795] | -0.004 (0.016) [0.793] | -0.004 (0.016) [0.823] | -0.005 (0.016) [0.742] |
| Neuroticism | -0.050 (0.029) [0.089] | -0.050 (0.029) [0.086] | -0.050 (0.029) [0.084] | -0.054 (0.029) [0.063] | -0.048 (0.029) [0.102] | -0.048 (0.029) [0.101] | -0.051 (0.029) [0.075] | -0.052 (0.029) [0.073] | -0.050 (0.029) [0.079] |
| Extraversion | -0.007 (0.025) [0.779] | -0.011 (0.025) [0.657] | -0.011 (0.025) [0.673] | -0.017 (0.025) [0.499] | -0.011 (0.025) [0.670] | -0.012 (0.025) [0.634] | -0.016 (0.025) [0.511] | -0.017 (0.025) [0.484] | -0.017 (0.024) [0.478] |
| Openness | 0.065 (0.036) [0.073] | 0.045 (0.037) [0.215] | 0.046 (0.037) [0.213] | 0.052 (0.037) [0.156] | 0.043 (0.037) [0.236] | 0.046 (0.037) [0.211] | 0.049 (0.037) [0.178] | 0.050 (0.037) [0.169] | 0.051 (0.036) [0.164] |
| Agreeableness | -0.014 (0.039) [0.727] | 0.003 (0.038) [0.927] | 0.005 (0.039) [0.895] | -0.002 (0.039) [0.957] | 0.010 (0.039) [0.805] | 0.010 (0.039) [0.804] | 0.000 (0.039) [0.993] | -0.006 (0.039) [0.874] | 0.010 (0.039) [0.794] |
| Conscientiousness | 0.055 (0.045) [0.224] | 0.035 (0.045) [0.433] | 0.033 (0.045) [0.459] | 0.047 (0.045) [0.301] | 0.036 (0.045) [0.425] | 0.032 (0.045) [0.478] | 0.053 (0.045) [0.239] | 0.050 (0.045) [0.268] | 0.049 (0.045) [0.277] |
| Opportunity (vs. Necessity) Motivations | 0.130 (0.049) [0.007] | 0.130 (0.048) [0.007] | 0.131 (0.048) [0.007] | 0.128 (0.048) [0.008] | 0.136 (0.049) [0.005] | 0.133 (0.048) [0.006] | 0.118 (0.048) [0.014] | 0.123 (0.048) [0.010] | 0.127 (0.049) [0.009] |

| | | | | | | | | | |
|-----------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Other motivations (vs. Necessity) | 0.076 (0.084) [0.365] | 0.113 (0.087) [0.193] | 0.114 (0.087) [0.190] | 0.140 (0.088) [0.114] | 0.122 (0.087) [0.162] | 0.125 (0.087) [0.149] | 0.124 (0.087) [0.156] | 0.135 (0.089) [0.128] | 0.141 (0.088) [0.107] |
| Constant | 1.584 (0.268) [0.000] | 1.505 (0.270) [0.000] | 1.515 (0.272) [0.000] | 2.065 (0.367) [0.000] | 1.506 (0.269) [0.000] | 1.574 (0.274) [0.000] | 1.680 (0.354) [0.000] | 1.906 (0.540) [0.000] | 2.036 (0.587) [0.001] |
| Pseudo R2 | 0.0191 | 0.0270 | 0.0271 | 0.0283 | 0.0279 | 0.0277 | 0.0298 | 0.0281 | 0.0308 |

Note: Negative binomial models. Robust standard errors in parentheses; p values in squared brackets. N = 747. All models include dummy variables for industries, ethnicity, age group, income range, and marital status.

Appendix 8. Number of pre-entry steps, controlling for stage of search

| | M1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 |
|---|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| High Formal Education | | 0.214 (0.067) [0.001] | 0.214 (0.067) [0.001] | 0.213 (0.066) [0.001] | 0.021 (0.133) [0.875] | 0.213 (0.067) [0.001] | 1.875 (0.630) [0.003] | 0.213 (0.066) [0.001] | 1.598 (0.739) [0.030] |
| Prior knowledge and experience (K & E) | | 0.239 (0.053) [0.000] | 0.239 (0.053) [0.000] | 0.244 (0.053) [0.000] | 0.238 (0.053) [0.000] | 0.124 (0.091) [0.173] | 0.245 (0.052) [0.000] | 0.319 (0.531) [0.548] | -0.122 (0.602) [0.840] |
| Breadth of embeddedness | | | -0.007 (0.018) [0.709] | -0.023 (0.020) [0.241] | -0.022 (0.019) [0.246] | -0.056 (0.036) [0.120] | | | -0.079 (0.039) [0.041] |
| Depth of embeddedness | | | | -2.456 (1.136) [0.031] | | | -1.021 (1.122) [0.363] | -1.898 (2.117) [0.370] | -2.175 (2.252) [0.334] |
| High F. Education x Breadth of embeddedness | | | | | 0.120 (0.061) [0.050] | | | | 0.052 (0.063) [0.413] |
| Prior K & E x Breadth of embeddedness | | | | | | 0.071 (0.040) [0.079] | | | 0.073 (0.044) [0.098] |
| High F. Education x Depth of embeddedness | | | | | | | -7.250 (2.756) [0.009] | | -6.410 (3.001) [0.033] |
| Prior K & E x Depth of embeddedness | | | | | | | | -0.337 (2.359) [0.886] | 1.100 (2.514) [0.662] |
| Female | 0.026 (0.050) [0.605] | 0.063 (0.050) [0.208] | 0.061 (0.050) [0.225] | 0.070 (0.050) [0.163] | 0.059 (0.050) [0.233] | 0.062 (0.050) [0.218] | 0.072 (0.050) [0.148] | 0.075 (0.050) [0.137] | 0.068 (0.050) [0.170] |
| Number of children | -0.009 (0.016) [0.573] | -0.002 (0.016) [0.900] | -0.002 (0.016) [0.912] | -0.003 (0.016) [0.852] | -0.000 (0.016) [0.986] | -0.004 (0.016) [0.795] | -0.004 (0.016) [0.793] | -0.004 (0.016) [0.823] | -0.005 (0.016) [0.742] |
| Neuroticism | -0.050 (0.029) [0.089] | -0.050 (0.029) [0.086] | -0.050 (0.029) [0.084] | -0.054 (0.029) [0.063] | -0.048 (0.029) [0.102] | -0.048 (0.029) [0.101] | -0.051 (0.029) [0.075] | -0.052 (0.029) [0.073] | -0.050 (0.029) [0.079] |
| Extraversion | -0.007 (0.025) [0.779] | -0.011 (0.025) [0.657] | -0.011 (0.025) [0.673] | -0.017 (0.025) [0.499] | -0.011 (0.025) [0.670] | -0.012 (0.025) [0.634] | -0.016 (0.025) [0.511] | -0.017 (0.025) [0.484] | -0.017 (0.024) [0.478] |
| Openness | 0.065 | 0.045 | 0.046 | 0.052 | 0.043 | 0.046 | 0.049 | 0.050 | 0.051 |

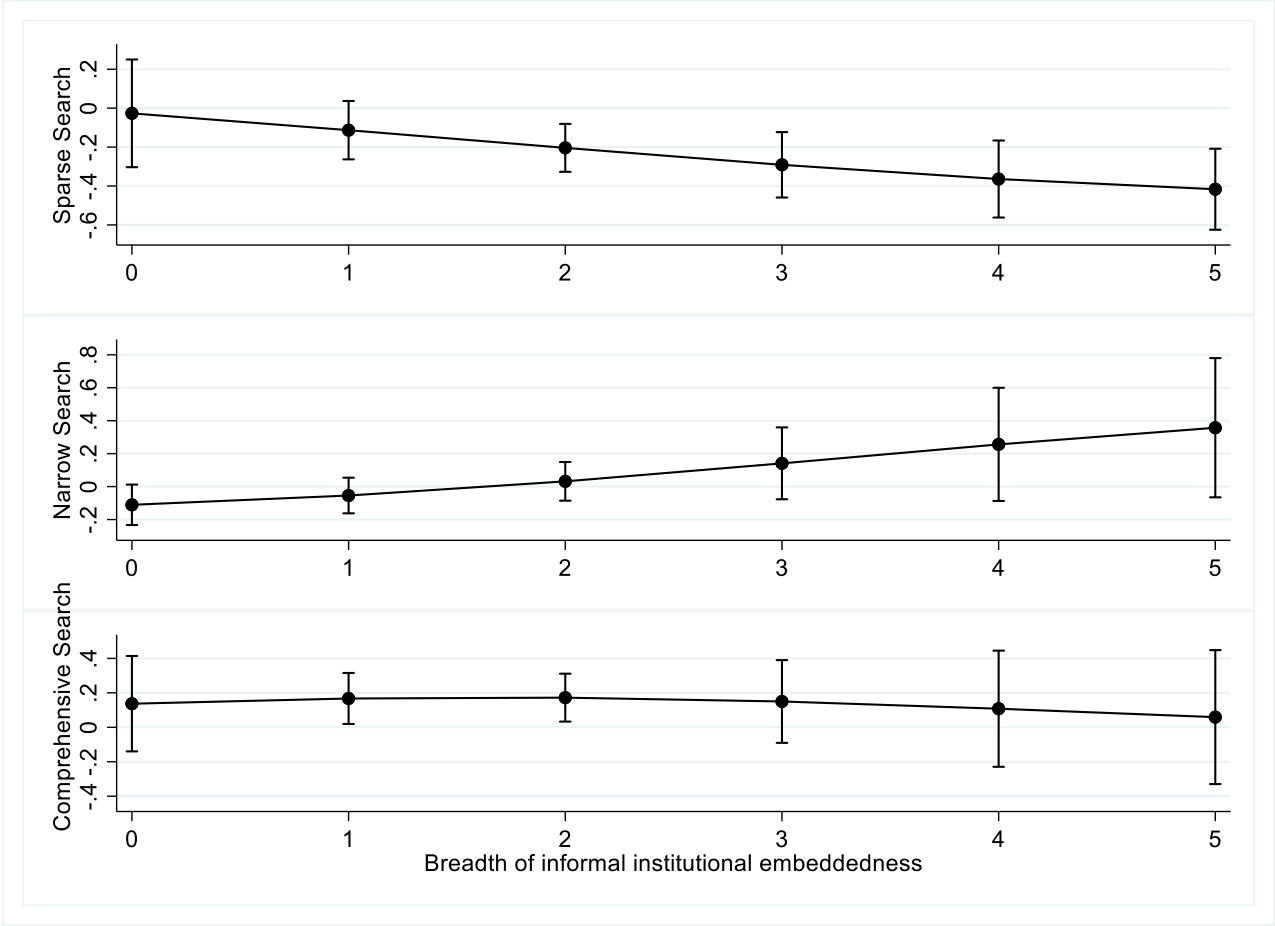
| | | | | | | | | | |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | (0.036) | (0.037) | (0.037) | (0.037) | (0.037) | (0.037) | (0.037) | (0.037) | (0.036) |
| | [0.073] | [0.215] | [0.213] | [0.156] | [0.236] | [0.211] | [0.178] | [0.169] | [0.164] |
| Agreeableness | -0.014 | 0.003 | 0.005 | -0.002 | 0.010 | 0.010 | 0.000 | -0.006 | 0.010 |
| | (0.039) | (0.038) | (0.039) | (0.039) | (0.039) | (0.039) | (0.039) | (0.039) | (0.039) |
| | [0.727] | [0.927] | [0.895] | [0.957] | [0.805] | [0.804] | [0.993] | [0.874] | [0.794] |
| Conscientiousness | 0.055 | 0.035 | 0.033 | 0.047 | 0.036 | 0.032 | 0.053 | 0.050 | 0.049 |
| | (0.045) | (0.045) | (0.045) | (0.045) | (0.045) | (0.045) | (0.045) | (0.045) | (0.045) |
| | [0.224] | [0.433] | [0.459] | [0.301] | [0.425] | [0.478] | [0.239] | [0.268] | [0.277] |
| Business stage (launched vs. not launched) | 0.150 | 0.194 | 0.194 | 0.189 | 0.201 | 0.193 | 0.176 | 0.189 | 0.178 |
| | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) |
| | [0.014] | [0.001] | [0.001] | [0.002] | [0.001] | [0.001] | [0.004] | [0.002] | [0.003] |
| Constant | 1.584 | 1.505 | 1.515 | 2.065 | 1.506 | 1.574 | 1.680 | 1.906 | 2.036 |
| | (0.268) | (0.270) | (0.272) | (0.367) | (0.269) | (0.274) | (0.354) | (0.540) | (0.587) |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.001] |
| Pseudo R2 | 0.0191 | 0.0270 | 0.0271 | 0.0283 | 0.0279 | 0.0277 | 0.0298 | 0.0281 | 0.0308 |

Note: Negative binomial models. Robust standard errors in parentheses; p values in squared brackets. N = 747. All models include dummies for industries, ethnicity, age group, income range, and marital status.

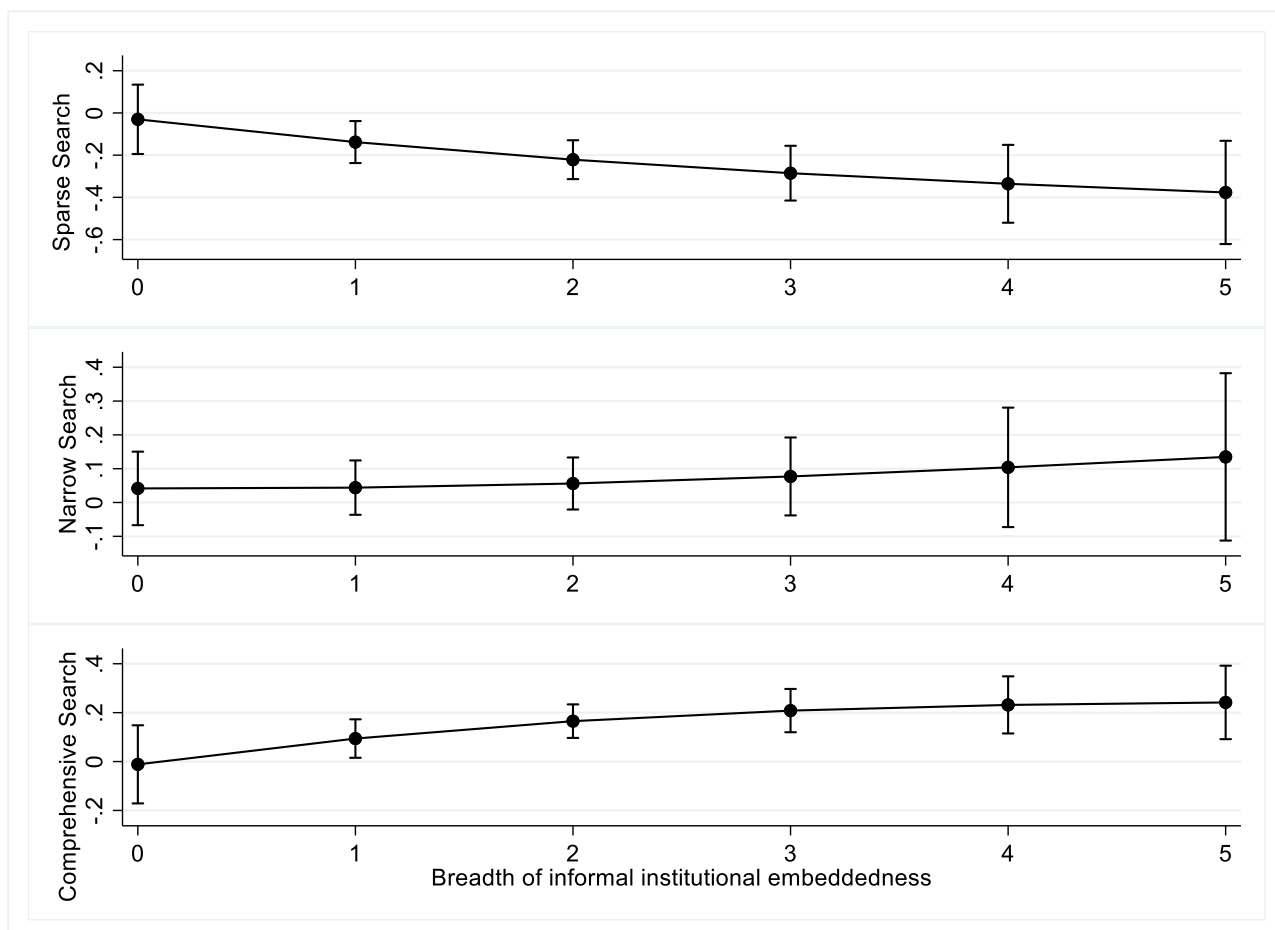
Appendix 9. Differences in industries of the prospective business idea across clusters (in %)

| Industry Category | Full Sample (n=747) | Sparse search (n=325) | Narrow Search (n=245) | Comprehensive Search (n=177) |
|-------------------|------------------------|--------------------------|--------------------------|---------------------------------|
| Manufacturing | 17.50 | 15.13 | 19.57 | 20.19 |
| Re-Selling | 46.07 | 52.77 | 39.13 | 40.38 |
| Services | 36.43 | 32.10 | 41.30 | 39.42 |
| Total | 100% | 100% | 100% | 100% |

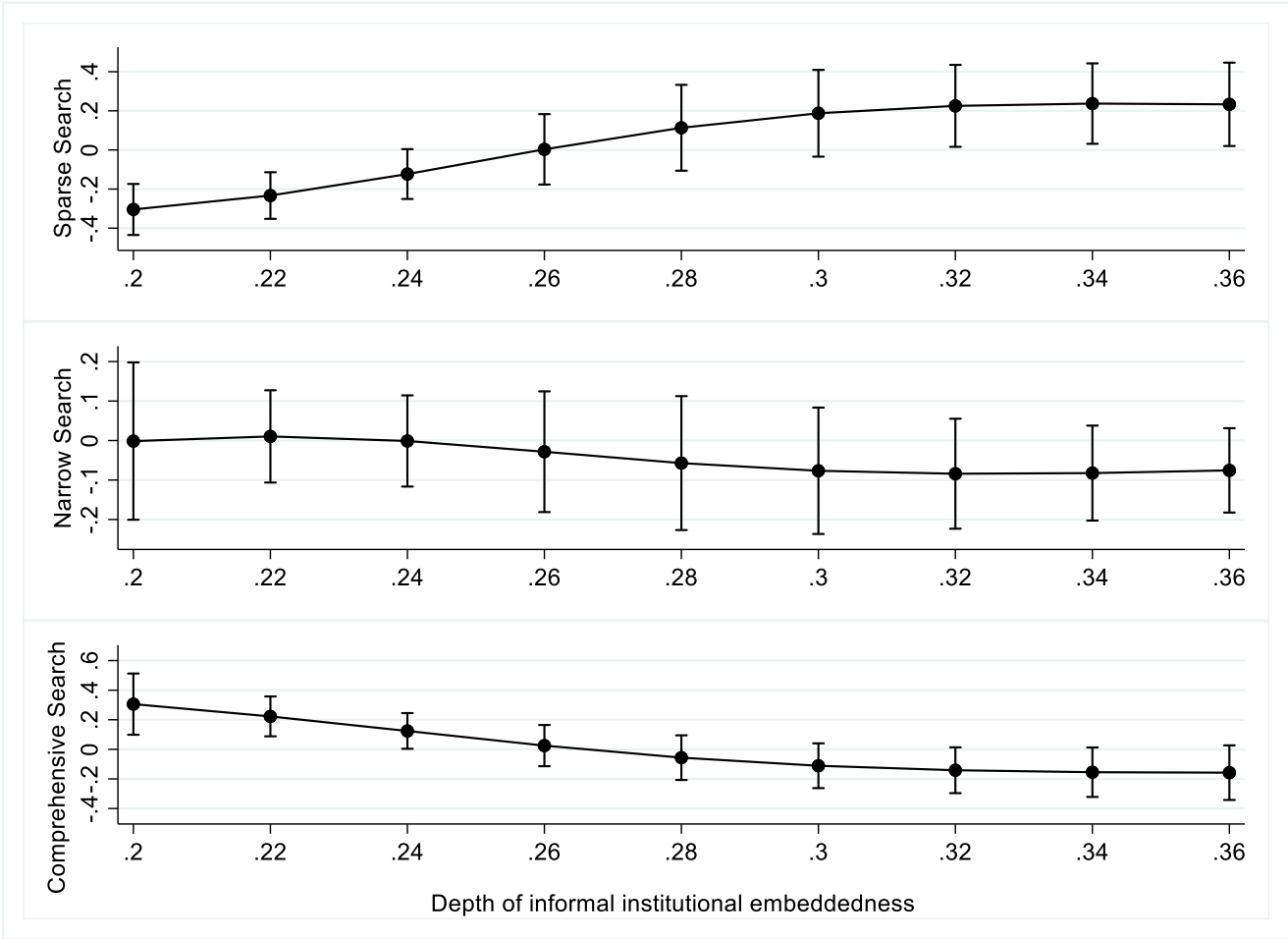
Appendix Figure 1a. Marginal effect of “High Formal Education” on the probability of belonging to different clusters of pre-entry search, for different levels of “Breadth of informal institutions embeddedness”



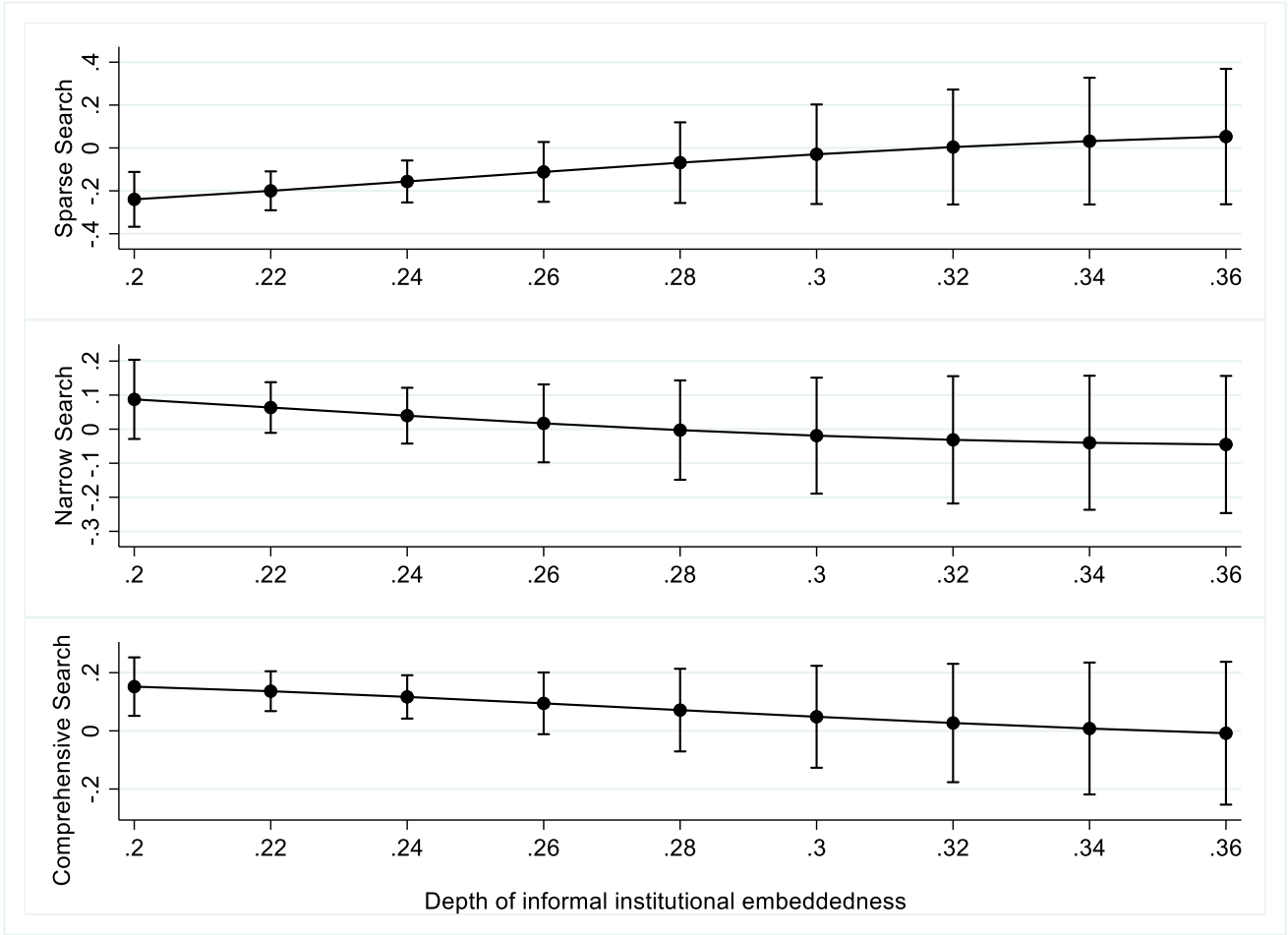
Appendix Figure 1b. Marginal effect of “High Prior Knowledge and Experience” on the probability of belonging to different clusters of pre-entry search, for different levels of “Breadth of informal institutions embeddedness”



Appendix Figure 1c. Marginal effect of “High Formal Education” on the probability of belonging to different clusters of pre-entry search, for different levels of “Depth of informal institutions embeddedness”



Appendix Figure 1d. Marginal effect of “High Prior Knowledge and Experience” on the probability of belonging to different clusters of pre-entry search, for different levels of “Depth of informal institutions embeddedness”



CHAPTER 4

RINSE AND REPEAT? ENTREPRENEURIAL PRE-ENTRY SEARCH BY HABITUAL ENTREPRENEURS IN THE INFORMAL ECONOMY.

Shelter Selorm Teyi

Abstract

Prior literature on habitual entrepreneurs has documented important variation in entrepreneurial performance associated with past experience. As a result, new theory and evidence on entrepreneurial learning has pervaded the literature. However, the literature has remained relatively silent on *what* and *when* entrepreneurs search and potentially learn from prior spells of entrepreneurship. In effect, how prior experience shapes the actions of entrepreneurs. We propose that studying the pre-entry search activities of habitual entrepreneurs can shed new light on this aspect of the literature. Drawing on the literature on cognitive and behavioral learning, we argue that prior pre-entry search experience enables habitual entrepreneurs to develop cognitive frameworks which they draw on when faced with similar tasks. We also hypothesize that when entrepreneurs exceed their performance aspirations, they are able to draw on their resource buffers to undertake a more extensive search in their subsequent pre-entry activities than those who do not exceed their performance aspirations. Using unique data of 136 habitual entrepreneurs in the informal economy in Ghana, we find broad support for our theory.

Keywords: Habitual entrepreneurs, pre-entry search, learning, informal economy, Ghana

INTRODUCTION

An emergent stream of research at the nexus of the entrepreneurship and strategy literature highlights the importance of the entrepreneurial pre-entry process – how (prospective) entrepreneurs search for information about the feasibility and viability of their business idea before they decide whether to launch a venture or abandon the idea (Bennett & Chatterji, 2019; Chen et al., 2018). These studies argue that how (prospective) entrepreneurs search and absorb information shapes their entry and post-entry decisions. The pre-entry process, depending on how entrepreneurs search and absorb information, also influences the process of “learning by doing” (Felin et al., 2020; Ucbasaran et al., 2008). Learning by doing refers to how previous entrepreneurial experience affects subsequent spell(s) of entrepreneurship (Cope & Watts, 2000; Patel et al., 2022; Rocha et al., 2015).

Previous research on entrepreneurial learning has emphasized the central role of experience in the process of learning by doing, often suggesting a positive relationship between entrepreneurial experience and performance (Baron & Ensley, 2006; Ucbasaran et al., 2008). As a result, most studies largely compare the performance of novice (no prior entrepreneurial experience) with that of habitual (with prior entrepreneurial experience) entrepreneurs (Ucbasaran et al., 2014; Westhead et al., 2005a). This stream of research thus argues that habitual entrepreneurs benefit from cognitive frameworks that they develop through experience, whereas novice entrepreneurs lack the ability to recognize meaningful patterns that could enhance the venture creation process. While this literature shows performance differences between habitual and novice entrepreneurs, heterogeneities may exist among habitual entrepreneurs with regards to their actions as they accumulate experience, which may reflect, to some extent, learning by doing or shape their subsequent actions in future ventures¹⁰(Cope & Watts, 2000; Ucbasaran et al., 2014).

¹⁰ Empirical studies on learning from entrepreneurial experience among habitual entrepreneurs show inconclusive results (Eggers & Song, 2015; Patel et al., 2022). While some scholars do not find empirical support for entrepreneurial learning among habitual entrepreneurs (Frankish et al., 2013), others show that the value of prior entrepreneurial experience in a subsequent business(es) may be seen initially, but depreciate with time (Parker, 2013). Lafontaine and Shaw (2016) argue that while prior

The paper integrates the literature on cognitive and behavioral learning, to deepen our understanding on entrepreneurial learning by focusing on a specific entrepreneurial task (pre-entry search). More so, understanding whether and how entrepreneurs may learn at the pre-entry stage, may help us uncover important stages of the entrepreneurial process in which learning matters, as well as, how learning from previous entrepreneurial experience may impact strategic decision making in subsequent businesses (Cope & Watts, 2000; Lin et al., 2019).

By looking at the entrepreneurial pre-entry search that habitual entrepreneurs undertake, this paper answers the question, *(how) does the search entrepreneurs conduct in their first venture creation process relate to the search they conduct in the second spell of entrepreneurship?*

Capturing the pre-entry search activities of habitual entrepreneurs at two separate time intervals allow us to examine whether any change occurs in the search behavior (and in which direction). Hence, this paper addresses an important knowledge gap in the entrepreneurship and learning literature by looking at the earliest stage of the venture creation process (Lafontaine & Shaw, 2016; McGrath, 1996; Wuebker et al., 2021), because this early stage may influence subsequent stages and explain differences in performance in the long run (Chen et al., 2018; Cope & Watts, 2000).

To answer our research question, we draw on cognitive and behavioral (performance feedback) learning theories to explain how the pre-entry search in the first spell of entrepreneurship affects pre-entry in the second spell, and how pre-entry search in the first spell interacts with the performance relative to entrepreneurs' aspirations (Kuusela et al., 2017; Pidduck et al., 2020; Ref & Shapira, 2017). The literature on cognitive and behavior suggests that experience enables entrepreneurs to develop cognitive frameworks that help them to learn and process new information, and they draw on these frameworks in subsequent decisions when faced with similar tasks (Fiske & Linville, 1980; Pidduck et al., 2020). The literature on performance feedback, especially the resource perspective complements our theory by explaining that performance above aspiration provides; (1) additional resources that decision makers can explore more fully and (2) a more relaxed environment

entrepreneurial experience may be a predictor of success in subsequent ventures, the specific type of experience that is transferred to the subsequent business remains vague.

and the freedom to afford broader search and experimentation (Kuusela et al., 2017; Ref & Shapira, 2017).

As implied above, we propose a baseline relationship predicting a positive association between the extent of pre-entry search in the first and second spell of entrepreneurship. Next, we propose that this relationship is positively moderated by performance above aspirations. Finally, as part of the identification of the mechanisms, we posit that the positive moderating effect of performance above aspirations is particularly important for high resource-consuming activities. Using a unique dataset from 136 habitual entrepreneurs operating in a large informal cluster in Ghana, we test our predictions using negative binomial regression models and find broad support for our hypotheses. Our results show that the extent of prior search positively correlates with the extent of subsequent search, and this relationship is stronger when entrepreneurs exceed their performance aspirations.

The main contribution of this paper is in two-fold. First, we contribute to the strategic entrepreneurship literature by providing insight on early stage decision-making of habitual entrepreneurs in the informal economy. We do this by integrating cognitive and behavioral perspectives of learning to shed light on how entrepreneurial pre-entry search may change with accumulated experience. Doing so can help explain heterogeneities in entrepreneurial long-term performance, because many entrepreneurial actions have roots in the pre-founding and founding stages (Cope & Watts, 2000; Felin et al., 2020; Wuebker et al., 2021). Second, our theory focuses on a resource perspective to explain performance feedback and pre-entry search. Thus, we contribute to the literature on entrepreneurial learning with emphasis on habitual entrepreneurs. This study answers calls for more research that integrate a resource perspective and learning theory (Greve, 2021). Specifically, our data reveal that habitual entrepreneurs usually rinse and repeat what has worked in the past. Again, we find that entrepreneurs tend to seek for more information at the pre-entry stage when they exceed their performance aspirations relative to when they do not exceed their performance aspirations.

THEORY AND HYPOTHESES

Habitual entrepreneurs in the informal economy

Scholars have argued that studying habitual entrepreneurs is essential if we are to learn about the venture creation process for a number of reasons (MacMillan, 1986; Schjoedt, 2021). First, habitual entrepreneurs may display some distinct ‘entrepreneurial cognition’ and ‘experience curve’ that could further our understanding of the entrepreneurship process (MacMillan, 1986; Ucbasaran, Wright, & Westhead, 2003). In other words, habitual entrepreneurs enable us to move beyond heterogeneity among individual entrepreneurs to gain insights regarding the variation in the venture creation process. Second, successful habitual entrepreneurs may have developed skills in overcoming challenges in the venture creation process that can be distilled and shared with novice entrepreneurs (MacMillan, 1986; Ucbasaran et al., 2014). Habitual entrepreneurs are assumed to benefit from having started a business by receiving performance feedback. Consequently, they can start another business with the benefit of hindsight from their previous business (Eggers & Song, 2015). This means they are considered to learn from past experience to improve on their performance in subsequent ventures. Finally, habitual (serial and portfolio) entrepreneurs contribute more to job creation and economic development than one-time entrepreneurs, constituting therefore an interesting group for policy makers (Hoye & Pries, 2009; Nielsen & Sarasvathy, 2016).

While habitual entrepreneurship is a global phenomenon (Carter & Ram, 2003; Ucbasaran et al., 2014), it is particularly common in the informal economy (Kiggundu & Pal, 2018). In the informal economy such as African resource-constrained contexts, entrepreneurs can hardly subsist on a single business, hence, the adoption of a portfolio strategy to make a living, especially when businesses are seasonal (Galdino et al., 2018; Weber et al., 2022). Therefore, entrepreneurs in the informal economy are involved in multiple businesses as a strategy for economic survival, diversification of risk, or for meeting long-term growth aspirations (Carter et al., 2004; Detienne & Chirico, 2013). In other words, some entrepreneurs in the informal economy in Africa grow by diversifying into several small businesses, rather than concentrating their efforts on a single business (Kiggundu & Pal, 2018; Namatovu et al., 2018). While those in the lower classes use it as a strategy to survive, those in the higher classes employ it as a growth strategy (Rosa, 2019).

As noted by other scholars, the (absence of or) weak legal protection that characterizes the informal economy spurs entrepreneurs to develop “octopus businesses” that grow laterally as opposed to vertical growth (scaling up existing business) (Kiggundu & Pal, 2018). The portfolio approach is a strategy that entrepreneurs use to hide their capital from “*political vultures, ... and reducing the exposure of the business income to a wide range of levies, licenses, and other taxes*” and other stakeholders such as family, community, and religious members (Charman et al., 2014; Kiggundu, 2002, pp. 121–122; Nason & Bothello, 2022).

Despite the immense contribution of entrepreneurs to the informal economy, yet the literature in entrepreneurial strategy lacks adequate research about the activities or steps that entrepreneurs actually engage in at the pre-entry stage, and even far less for habitual entrepreneurs in the informal economy (Bennett & Chatterji, 2019; Rosa, 2019; Wuebker et al., 2021). Such insights will enable scholars to better understand (1) how entrepreneurs choose the strategies they pursue at the inception of the firm; (2) the post entry strategies and performance of firms; (3) the exit and re-entry decisions that entrepreneurs are confronted with (Burton et al., 2016; Posen & Cao, 2019).

Entrepreneurial experience and pre-entry search

While novice entrepreneurs do not have any entrepreneurial experience, habitual or repeat entrepreneurs have been involved in at least one new venture creation process prior to starting another business (Ucbasaran et al., 2008). The repetitive process that habitual entrepreneurs go through to launch ventures has been of interest to scholars studying entrepreneurial learning (Politis, 2008). Scholars argue that to understand habitual entrepreneurs, studies need to pay attention to the role of specific entrepreneurial experiences as a source of entrepreneurial learning (Ucbasaran et al., 2014). Additionally, there is the notion that habitual entrepreneurs develop cognitive abilities over time that facilitate learning during subsequent spells of new venture creation (Politis, 2008; Westhead et al., 2005b). Similarly, McGrath and MacMillan (2000) argue that experienced entrepreneurs have an “entrepreneurial mindset” that prompts them to search out and pursue opportunities with enormous discipline. This entrepreneurial mindset suggests that habitual entrepreneurs develop a set of knowledge and a framework for processing information that makes them competent in organizing new ventures (Ucbasaran et al., 2008).

The entrepreneurial mindset has a cognitive aspect that enable entrepreneurs to process information, apply knowledge, encode and selectively access relevant information (Kuratko et al.,

2021; Sarasvathy et al., 2013). In the same vein, prior research indicates that cognitive schemas “guide the processing of new information and the retrieval of stored information” (Fiske & Linville, 1980, p. 543). Hence, entrepreneurial experience can influence an individual’s capacity to acquire and organize complex information (Dencker et al., 2009a; Ucbasaran et al., 2008). Consequently, cognitive theories facilitate our understanding of how individuals make sense of their experiences.

Again, scholars maintain that prior entrepreneurial experience facilitates the development of cognitive resources that may not only help entrepreneurs to learn, but also aid them to develop an absorptive capacity to plan, learn and adapt (Baron & Henry, 2010; Dencker et al., 2009a). This cognitive perspective is important for assessing heterogeneity among entrepreneurs and their strategic choices (Pidduck et al., 2020). Experience helps individuals to develop multiple cognitive schemas that await selection when a similar task is required (Moore et al., 2021; Torney-Purta, 1991). Given that cognitive resources that are developed over time are usually relied on when performing similar tasks, the paper argues that how entrepreneurs search for information during their first spell of entrepreneurship will guide how they search in the next spell of entrepreneurship. For instance, entrepreneurs who search (less) extensively will develop the cognitive resources to be able to search in a similar way in their second spell of entrepreneurship. In sum, we expect a positive association in the volume of information search during the pre-entry stage of both spells of entrepreneurship. Therefore, following the above discussion, we propose the following baseline relationship:

Baseline hypothesis: There is a positive relationship between the extent of search conducted in the first and second spells of entrepreneurship.

However, we expect that the strength of this relationship will be contingent on the type of performance feedback entrepreneurs receive from their initial business. In what follows, we argue that habitual entrepreneurs tend to repeat prior pre-entry search strategies particularly when they perform above their aspirations.

Performance relative to aspirations

Feedback is important in decision making. Consequently, the literature on learning from experience argues that firm performance matters in understanding behavioral change and strategic

decision making (Greve, 2021). Scholars emphasize that decision makers are influenced by comparisons of their present performance with that of their past performance and/or the performance of comparable organizations when strategizing (Joseph & Gaba, 2015; Smulowitz et al., 2020). Decision makers simplify complex performance outcomes by comparing them to their performance aspirations (Joseph et al., 2016). Performance aspiration levels enable decision makers to interpret prior performance, thereby influencing the trajectory and search behavior of organizations (Joseph et al., 2016; Kim et al., 2015). Aspiration levels reflect the goals of organizations such that performance above aspirations is seen as success and performance below aspirations is seen as undesirable (Kim et al., 2015). Hence, performance relative to aspirations is a potent learning mechanism that enables decision makers to update their beliefs and assumptions (Kim et al., 2015). For instance, studies have shown that in case of desirable performance (success), firms tend not to change their current strategy, whereas undesirable performance is associated with a change in current strategy (Joseph et al., 2016; Kim et al., 2015).

Scholars have explained multiple strategic decisions of firms as responses to discrepancies between their performance relative to their aspirations – i.e. above (success) or below (failure) expectations (Argote & Greve, 2007; Cyert & March, 1963; Smulowitz et al., 2020). While performance relative to aspirations has mainly been applied to decision making at the firm level (Argote & Greve, 2007; Greve, 1998), we apply performance relative to aspirations to entrepreneurs in the informal economy for two reasons. First, we follow prior scholars who argue that both individuals and firms search when there are discrepancies between their current performance and their expectations. For instance, Bromiley states that *“the aspiration argument applies equally to individuals and organizations”* (Bromiley, 2004, p. 26). Second, in the informal economy, the entrepreneur and his or her business are entangled. Hence, entrepreneurs look for multiple alternative ventures to improve their income (Weiss & Weber, 2017; Nason & Bothello, 2022). At the same time, the informal economy is characterized by greater uncertainty, hence, people look to ensure their income by investing their resources in starting new businesses (dispersed growth) in the informal economy. As Nason and Bothello (2022, p. 8) noted *“dispersed growth refers to an individual expanding economic activity across several independent entrepreneurial endeavors”*.

Whether or not the initial venture can be interpreted as a success or a failure may impact the learning and subsequent behavior of entrepreneurs (Bernoster et al., 2020; Minniti & Bygrave, 2001;

Ucbasaran, Wright, Westhead, et al., 2003). In effect, learning takes place when firms over or underperform (Ref & Shapira, 2017).

A growing resource perspective argues that when firms perform above their aspirations, they gain additional resources that “may motivate firms to find a way of using them more fully” (Kuusela et al., 2017; Ref & Shapira, 2017, p. 1421) to secure their long-term growth (Ref & Shapira, 2017). Therefore, performance above aspiration may affect the search behavior of entrepreneurs, particularly the number of search activities they engage in prior to starting another business. We argue that performance above aspiration will provide conditions for more extensive search because entrepreneurs (1) gain more resources to undertake more volume of search (2) are not under any time pressure to launch another venture.

First, when organizations perform better than their expectations, it provides excess resources that serve as buffers (Ref & Shapira, 2017). Consequently, performance above aspiration may be an indication that the entrepreneur has resources that he might want to deploy for a dispersed growth (Nason & Bothello, 2022; O’Brien & David, 2014). Such resource buffers are expected to be deployed as the entrepreneur engages in pre-entry activities during another spell of entrepreneurship.

Second, entrepreneurs who perform above aspiration will be better placed to take their time to have a more extensive search than those whose performance do not exceed their level of aspiration. This is mainly because the ‘wait and see’ phenomenon will apply mostly to them as they will take the time to search for more information about their new venture idea (Alsos & Kolvereid, 1998). Entrepreneurs who perform above aspiration may be cushioned from the time pressures that are faced by decision makers who may not have the financial buffers that will afford them the time to carefully explore a variety of search activities (Gruber, 2010) or engage in extensive experimentation (Ref & Shapira, 2017) during the earliest stages of the venture creation process.

From earlier discussions, we would expect habitual entrepreneurs to rely on the schema they developed in the first pre-entry search to guide their second spell of entrepreneurship. For instance, if an entrepreneur searches extensively during their first spell of entrepreneurship, then they would develop the cognitive resources and “know-how” of searching extensively (narrowly) in the subsequent spells of entrepreneurship. In addition, if they perform above aspiration then they will experience the value of an extensive (narrow) search and are expected to repeat same in their next

spell of entrepreneurship. Hence, individuals who conduct extensive search in their prior pre-entry search will continue to pursue same only when they perform above their aspirations.

In contrast, performance below aspirations creates resource constraints and, in the absence of alternative resources, the number of search activities are expected to fall (Kuusela et al., 2017). Hence, we expect that entrepreneurs who do not exceed their performance expectation will not have the resource buffers to search for more volume of information during the pre-entry stage as compared to their peers who exceed their performance aspirations. In a nutshell, we expect that entrepreneurs who exceed their performance will be able to afford searching for greater volumes of information during the pre-entry stage than those who do not exceed their aspirations. Therefore, we hypothesize that:

Hypothesis 1 (H1): The positive relationship between the number of pre-entry search in the first and second spells of entrepreneurship is stronger (weaker) when entrepreneurs' performance in their first business is (not) above their aspirations.

To test of the mechanism underlying H1: if indeed performance above aspirations gives entrepreneurs more resources, then, we should expect this relationship to matter particularly for high resource-consuming activities, as they are more resource demanding.

Resource-consuming activities

Entrepreneurs in the informal economy operate under severe resource constraints (Mair & Marti, 2009). As opposed to the strong formal institutions and infrastructural developments that support economic activities in the formal economy, entrepreneurs in the informal economy often work with underdeveloped infrastructure systems (Kistruck et al., 2011; Sutter et al., 2017). These include poor communication networks, inefficient transportation systems, and the inability to access electricity and water (Khoury & Prasad, 2016). Equally, the lack of well-defined property rights, ill-enforced laws, limited enforcement and judicial apparatuses, hinder economic actors' ability to appropriate value from their activities (Webb et al., 2010; Webb & Ireland, 2015). In the absence of efficient financial and capital markets, entrepreneurs in these contexts usually resort to informal lending arrangements to subsist and often lack significant financial resource that are needed to exploit other business opportunities (Webb et al., 2015).

From a resource perspective, Kuusela and colleagues (2017) argue that organizational activities can either require the commitment of resources (resource-consuming) or freeing resources (resource-freeing). Following this logic, entrepreneurial pre-entry search activities can be seen as resource-consuming activities as they require entrepreneurs to commit time, energy and financial resources needed to learn about their business idea and to turn the idea into a business. Some search activities are more costly or resource consuming than others (Bennett & Chatterji, 2019; Gans et al., 2019). For instance, discussing your business with a family member or friend is not as resource consuming as building a prototype or making samples of your product or providing a service on a pilot basis. Consequently, we categorize pre-entry search activities into low and high resource-consuming activities.

In contexts of resource constraints, the availability of resources and financial buffers may be central in understanding the strategies that entrepreneurs and firms adopt (Kuusela et al., 2017; Nason & Bothello, 2022). Therefore, we expect that when entrepreneurs perform above aspirations, they will have more resources to be able to undertake more high resource-consuming activities relative to when they do not perform above aspiration. Therefore, we hypothesize that:

Hypothesis 2 (H2): Performance above aspirations strengthens the positive relationship between entrepreneurs' pre-entry search in the first and second businesses, especially when entrepreneurs engage in high resource-consuming pre-entry steps in their second spell.

DATA AND METHODS

Sample and data collection

Given the lack of existing data on the entrepreneurial pre-entry activities of habitual entrepreneurs in the informal economy, we conducted a survey in Accra New Town, an informal cluster in Ghana. Ghana is a sub-Saharan African country with about 90 percent of economic activities taking place in the informal sector (ILO, 2018; Ofori-Atta, 2020). The informal economy comprises “economic activities that occur outside of formal institutional boundaries but which remain within informal institutional boundaries for large societal groups” (Webb et al., 2009, 2013, p. 599). Since Hart’s (1973) seminal paper on the informal economy which was set in Ghana, the country has continued to attract attention among scholars interested in understanding the informal

economy as it is very representative of the phenomenon of informality in developing economies (see, Newman & Alvarez, 2022; Slade Shantz et al., 2020).

As the study focused on the informal economy, there is hardly any structure to support a self-administered questionnaire. Hence, we collected the data using face-to-face interviews as it allowed us to have a good coverage of the target population and increase the response rate of our survey. The data collection was done with the help of a team of professional data collectors (enumerators) who were trained on the specific questionnaire of the study and had enough time to reflect on the questionnaire and undertake pilot tests before the main study. The enumerators used electronic tablets to capture the data in real time. The tablets also enabled us to have the GPS coordinates of each location where an interview was conducted.

Self-reported data that are collected from survey research are faced with the challenge of common method bias, particularly when data is sought from the same respondent at the same time because the relationship between variables can be inflated (Christmann, 2000). To minimise concerns about common method bias, we employed a two-stage data collection approach (e.g., Scheaf et al., 2020) with at least two weeks time interval between the first and second wave of data collection. The time lag limits the inhibit respondents from drawing on the short-term memory and using *“previous answers to fill in gaps in what is recalled and/or to infer missing details”* (Podsakoff et al., 2003, p. 888). The data collection took place in the last quarter of 2021.

Considering the weak formal institutions and the challenging address system in the community, entrepreneurs are difficult to track. Hence, we employed some strategies to increase the response rate when following-up on the respondents for subsequent data collection. First, enumerators were assigned to specific areas in the locality, hence, making it easy to follow-up on those who they had interviewed in the first wave. Second, enumerators gave some descriptions about the specific places and people they interviewed and took GPS coordinates on the tablets that were used for the interviews to enable easy tracking. Third, respondents who indicated their willingness to be part of the two rounds of data collection provided their phone number(s) and the phone number of one more reliable person through whom they could be reached in case we found difficulty in reaching them.

Given that we needed some personal details from the respondents in order to follow-up on them, we stressed the importance of ensuring the anonymity and confidentiality of responses in the study, and subsequently, removed all identifiers before analyzing the data. Respondents were informed that all responses would remain anonymous and that they could drop out of the survey whenever they wanted to. Respondents were assured that there were no right or wrong answers and were encouraged to answer all questions honestly. In line with best practice in survey research (Podsakoff et al., 2003), we followed these procedures in an effort to reduce the likelihood of respondents editing their responses to suit ‘the researcher’.

In the first wave of data collection, a total of 1,095 individuals were surveyed. A total of 754 individuals were surveyed again in the second wave. Out of this, 438 were seriously considering to start a business for the first time and the remaining 316 individuals were already entrepreneurs. Out of the 316 entrepreneurs, 136 (180) were (not) seriously engaged in the process of starting another business. This paper focuses on the 136 entrepreneurs who have active businesses and are in the process of actively considering to start another business.

Appendix 1 presents some descriptive statistics on entrepreneurs in our sample such as age, income, gender, family size and levels of formal education.

Measures

Dependent variable

The main dependent variable is the extent of pre-entry search in the second spell of entrepreneurship, measured by the total number of steps taken by entrepreneurs in their second business. We used a list of 27 pre-entry activities that entrepreneurs take as they learn about their new venture idea. These included activities such as discussing the business idea with a friend, testing demand for the product or service, or exploring financing options from family. These steps were adapted from prior scholars (Bennett & Chatterji, 2019; Lichtenstein, Carter, Dooley, & Gartner, 2007) to fit the context of the informal economy. Each step is coded as a dummy variable equal to 1 if an entrepreneur had taken the step and 0 otherwise. Entrepreneurs in our sample took a minimum of 0 and a maximum of 15 steps. See figure 1a for the histogram of the steps and appendix 2 provides a list of the steps.

Figures 1a and 1b about here

Secondly, we computed the number of high resource-consuming steps taken by entrepreneurs in the second spell of entrepreneurship as an alternative dependent variable to test the validity of Hypothesis 2 (see figure 1b).

As reported in Table 1 (descriptive statistics), on average, entrepreneurs take five different steps as they test the viability of their second business idea. The data showed that close to 28% take at most two steps, approximately 30% take between 5 to 8 steps and about 20% take 9 or more steps, thereby showing variation in steps taken by entrepreneurs during their second spell of entrepreneurship. We found that some of the steps that are rarely taken include discussing the ideas or exploring financing options from members of their religious group. We also found that the steps that are most commonly taken are saving money to invest in the business and discussing the idea with family and friends (see Appendix 2).

Table 1 about here

Independent variables

Our main independent variables are the number of steps taken in the first spell of entrepreneurial pre-entry search and the performance discrepancy relative to entrepreneurs' aspirations.

Pre-entry steps in the first spell of entrepreneurship – we theorize that the extent of pre-entry search in the first spell of entrepreneurship is a relevant predictor of the extent of search in the second spell of entrepreneurship. Similar to our dependent variable, we used a list of 27 steps that entrepreneurs took during their first spell of entrepreneurship as they learned about their new venture idea. Entrepreneurs in our sample took a minimum of 0 and a maximum of 15 steps. Figure 1c provides the distribution of this variable and appendix 4a provides a comparison of steps taken in the first and second spell of pre-entry search. The entrepreneurs in our sample took an average of 7 pre-entry steps in their first business (see table 1).

Figure 1c about here

Performance above aspiration is a dummy variable that captures the performance of entrepreneurs' business relative to aspirations/expectations. This performance measure refers to the business entrepreneurs are currently running (i.e. their first business). It is important to note that the subsequent business, which is the focus of this study does not have performance records yet, since the business is at the pre-entry stage and is yet to be launched. Given that most entrepreneurs in the informal economy do not keep (proper) financial records, scholars have argued that monthly sales

records can be relied upon to make estimations in such contexts (de Mel et al., 2009). Accordingly, the measure was created by relying on the sales figures reported by the respondents (Agbleze, 2022; Parker et al., 2017; Washburn & Bromiley, 2012). Following prior research, performance above aspiration variable was coded 1 for observations in which the sales of an entrepreneur's business is above the historical aspiration level and 0 if otherwise (Joseph et al., 2016).

Control variables

We controlled for a number of factors that might influence the number of steps entrepreneurs undertake in the second spell of entrepreneurship. Following prior studies, we control for individuals' age, level of formal education, prior knowledge and experience, gender, number of children, income, personality traits, and industry, as all of these aspects could affect decisions related to starting a business and shape pre-entry learning.

Human capital

Prior research on entrepreneurship have emphasized the importance of general and specific human capital in the founding of firms (Marvel, 2013; Rauch & Rijsdijk, 2013). Following prior scholars, a dummy variable was created with 1 representing high formal education (12 years and above of formal education) and 0, otherwise. Again, relying on previous studies (Marvel, 2013; Marvel & Lumpkin, 2007), specific human capital was measured using the individuals' prior knowledge and hands-on experience in three areas, namely, the ways to serve markets, customers, and suppliers (regarding the business they intend to start). Each of these aspects were assessed using two questions, rated in a 5-point Likert scale, to measure both the knowledge and the hands-on experience of the individual at the time of the survey. These are self-reported answers to question that were rated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). For instance, one question reads as follows, "*You have prior knowledge of ways to service/produce for the market you are/were targeting*", and another reads "*You have prior hands-on experiences in creating products and/or services similar to your (forthcoming) business*". After calculating the average response for all these items, we computed a dummy variable, *High prior knowledge and experience*, equal to 1 if the average rating was equal to or higher than 4, and 0 otherwise.

Age was coded into six self-reported categories: "18-24"; "25-34", "35-44", "45-54", "55-64", and "65 and above". Gender was coded 1 for women and 0 for men. With regards to the

number of children, respondents were asked ‘*How many children do you currently have?*’. Income was coded into seven self-reported categories: “*no income GH¢0*”, “*less than GH¢400*”, “*above GH¢400 – but less than GH¢1,000*”, “*above GH¢1,000 – but less than GH¢2,500*”, “*above GH¢2,500 – but less than GH¢5,000*”, “*above GH¢5,000 – but less than GH¢10,000*”, and “*above GH¢10,000*”.¹¹

Following prior studies (e.g., Dencker et al., 2009; Korunka et al., 2003; Miller & Le Breton-Miller, 2017), we controlled for the “Big 5” personality traits: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. These were measured with a validated 15-item scale (see Lang et al., 2011). Finally, a dummy was created for *same industry* = 1 if the second business will be in the same industry as the first business, 0 otherwise. Detailed statistics for these control variables can be found in Table 1 and Appendix 1.

Econometric approach

The dependent variable, which is the total number of pre-entry steps taken by entrepreneurs during their second spell of entrepreneurship – varies between 0 and 15 but only takes integer values. We therefore used count models to formally test our hypotheses. Given that the variable is over-dispersed (mean = 5.375 , SD = 3.668) - see Table 1 - we use negative binomial regressions for all model estimations with robust standard errors (Kaiser et al., 2015). We test the robustness of our findings with Poisson models and generally found results to be slightly stronger.

RESULTS

Descriptive statistics

Table 1 and 2 show the descriptive statistics and correlation matrix for the main variables, respectively. These results show considerable variation in the focal measures observed in our data (also see Appendix 1, and Figures 1a, 1b & 1c). We see that the number of steps taken during the first spell of entrepreneurship is positively correlated with the number of steps taken in the second spell of entrepreneurship. This indicates that taking more steps in the first spell of entrepreneurship may enable entrepreneurs to take more steps during the second spell of entrepreneurship. The data

¹¹ GH¢100 was equivalent to 16.6 USD at the time of data collection. Statistics for income is in Appendix 1.

also show variations in performance discrepancy. Approximately 41% of entrepreneurs' performance is above their aspirations.

*** Table 2 about here ***

Predicting the total number of pre-entry steps in the second spell of entrepreneurship

Table 3 summarizes our empirical results predicting the extent of search based on the number of pre-entry steps that entrepreneurs take during their second spell of entrepreneurship in the informal economy, as they learn about their new business idea. In a sequential analysis, Model 1 reports only our control variables. Model 2 adds our first independent variable (number of steps taken in the first spell of entrepreneurship); this allowed us to test our baseline prediction. Model 3 adds the interactions between number of steps taken in the first spell of entrepreneurship and performance above aspirations, allowing us to test the validity of H1. Model 4 adds the interactions between number of steps taken in the first spell of entrepreneurship and performance above aspirations, when we limit our dependent variable to only high resource-consuming activities, therefore allowing us to test H2.

The baseline hypothesis proposed a positive link between the extent of search in the first and second spells of entrepreneurship. Model 2 of Table 1 show the estimated coefficients for the number of steps in the first search (first spell of entrepreneurship) is 0.099 ($p = .000$). Hence, we found support for our baseline hypothesis. Our estimations of average marginal effects show that 1 step increase in the first search is associated with 0.5 more steps increase in the number of steps taken in the second spell of entrepreneurship. The marginal effect is 0.533 which in relative terms represents about 10 % increase in the extent of search conducted in the second spell.

Turning to the interaction terms, Hypothesis 1 proposed that the positive relationship between search in the first and second spell of entrepreneurship is stronger (weaker) for entrepreneurs who (did not) perform above their aspirations. As Model 3 shows, we found support for H1. The coefficient of the interaction between *Performance above aspiration* and the *Number of steps in the first search* is positive and statistically significant in Model 3 ($p < 0.050$). Because coefficients of interaction terms in non-linear models should not be directly interpreted from coefficient estimates, we compute marginal effects to illustrate the predicted number of steps in the second business, depending on entrepreneurs' first pre-entry search and their performance relative to aspirations (see Figure 2a). As can be seen, there is a positive association between the extent of pre-

entry search in the first and second spells of entrepreneurship, and this positive association is much steeper (i.e. stronger) for entrepreneurs performing above aspirations. We observe from figure 2a that entrepreneurs tend to search more broadly during the second spell of pre-entry search, the more extensive their pre-entry search was in the first spell, in line with our baseline prediction. Moreover, this relationship is more pronounced for those whose performance exceeds their aspirations. Although the differences may be marginally significant statistically, we must note that the sample is rather small, which limits the power of our estimations. We therefore suspect that more significant differences would be found if we were to enlarge our sample with more respondents.

*** Figures 2a about here ***

*** Table 3 about here ***

Hypothesis 2 predicted that the positive relationship between search in the first and second spell of entrepreneurship is stronger when we focus on high resource-consuming activities in the second pre-entry stage, which may benefit even more from past experience and especially so when entrepreneurs perform above their aspirations. Indeed, Model 3 provides support for this final prediction. *Performance above aspiration* and the *Number of steps in the first search* is positive and statistically significant ($p < 0.01$). Similar to figure 2a, figure 2b shows a positive association between the extent of pre-entry search in the first and second spells of entrepreneurship. While this positive association is much steeper (stronger) for entrepreneurs performing above aspirations, we also observe more significant differences between high and low performers in figure 2b relative to figure 2a, hence, showing support for H2. Again, however, enlarging the sample size could increase the power of our estimations and lead to more significant differences between the two groups of entrepreneurs.

*** Figures 2b about here ***

Robustness Checks

We performed a number of robustness checks to confirm the validity of our results. First, it has been argued that Poisson regression with robust standard errors may be adequate for count models (Wooldridge, 2010). Hence, we repeated our main analysis using Poisson regression and found broad support for our predictions (see Appendix 5a, b and c). Second, we calculated the

difference between historical and current sales of the initial business of the entrepreneurs and code performance relative to aspirations into three categories. Namely, performance below aspiration, performance equal to aspiration and performance above aspiration and found broad support for our hypothesis (see Appendix 6a, b and c).

Post Hoc Analysis

The purpose of this paper is to examine if and how habitual entrepreneurs learn from their first spell of entrepreneurship when starting a subsequent business. The paper achieved this by focusing on the number of pre-entry activities that entrepreneurs engage in during both spells of entrepreneurship. However, to provide insights into entrepreneurial learning at this early stage, we undertook a variety of exploratory analysis by first looking at different constellations of steps that entrepreneurs take in either spell. Hence, we drew on different categorizations of pre-entry activities to learn about steps that entrepreneurs undertake in subsequent pre-entry search. Second, we used cluster analysis to identify groups of individuals in the informal economy who may engage in different types of search based on distinct combinations of pre-entry steps.

Categorizing steps differently

We integrated perspectives from prior studies (Bennett & Chatterji, 2019; Brush et al., 2008; Manolova et al., 2012) to develop further categories to generate additional insights about the activities that habitual entrepreneurs undertake during the pre-entry stage. We developed four broad categories, namely learning activities, administrative activities, resource activities, and exchange activities. Learning activities are steps that primarily provide information about the quality of the business idea under consideration (Bennett & Chatterji, 2019). Administrative activities are *“those steps that were required to advance the entrepreneurial process but were unlikely to yield substantial new information about the profitability of the idea”* (Bennett & Chatterji, 2019, p. 17). Resource activities include financial, human, tools and equipment and other property that an entrepreneur marshals as part of the pre-entry stage (Brush et al., 2008). Exchange activities refer to transactions that take place across the boundaries of organizations (Katz & Gartner, 1998; Manolova et al., 2012). A careful observation of these categorizations in Table 4 shows some interesting results

worth highlighting¹². First, while overall the mean number of activities dropped from the first to the second entrepreneurial spell (from 7.213 to 5.375 in Table 1), one would have expected that easy steps such as talking to family and friends may be reduced during the second spell of entrepreneurship, but these steps become even more important, indicating the value of informal sources of knowledge to entrepreneurs.

*** Table 3 about here ***

Second, activities that may be considered as high resource-consuming learning tasks such as building a prototype, making samples of the product available, or testing the demand for products dropped substantially. This, coupled with a steep drop in exchange activities such as making a sale, may enrich our knowledge about the possible sequence of activities that habitual entrepreneurs undertake. Since exchange activities (e.g. making a sale) signal an advanced stage of pre-entry activities, and respondents were yet to launch their business, we could speculate that entrepreneurs start with easy or less resource-consuming activities before moving on to high resource-consuming activities.

Different types of pre-entry search

We measured heterogeneities in the extent of pre-entry search by identifying different constellations of search activities that entrepreneurs in the informal economy undertake. We used k-means cluster analysis to show the groups that individuals in our sample belong to (Gartner, 1990; Kubler et al., 2018), based on the combinations of pre-entry steps they take. The results showed three distinct clusters during the first pre-entry search as described below, which we labelled as follows: sparse search, narrow search, and comprehensive search (Figure 3a). As the labels indicate, the extent of search is smallest in the first cluster and widest in the third group. When applying the same procedure to the second spell of pre-entry search, we only identified two distinct clusters characterizing entrepreneurs' pre-entry search: sparse search and comprehensive search (Figure 3b). This suggests that entrepreneurs conduct relatively more extreme types of search the second time they launch a business. Figures 3a and 3b, Table 5, and Appendix 4a and 4b, present more detailed

¹² For instance, 36% of the respondents discussed their idea with a friend in their first search, while 40% did so in their second search.

statistics on the pre-entry search conducted in both spells of entrepreneurship based on this cluster analysis.

*** *Figures 3a and 3b about here* ***

*** *Table 5 about here* ***

To provide more insights on how entrepreneurs search during the second spell of entrepreneurship based on the first search, we analyzed how each cluster of entrepreneurs identified in the first pre-entry search conduct their search in their second business (See Table 6a). The results indicate that most (93%) of the individuals who searched sparsely the first time continue to do so in their second spell of entrepreneurship. Likewise, most (51%) entrepreneurs who conducted rather narrow search seem to continue to search sparsely for information the second time they set up a business. Given these patterns, it becomes even more vital to understand whether these patterns reflect any learning from experience or the lack of it thereof.

Table 6b therefore reports how often entrepreneurs performed above their aspirations or not, depending on the type of pre-entry search conducted prior to their first venture. Interestingly, we observed that most entrepreneurs who searched sparsely in the first spell of entrepreneurship (60%) exceeded their performance aspirations. On the other hand, a large portion of those who conducted comprehensive search (68%) did not exceed their performance aspirations. Although it is not within the scope of this study to investigate whether the extent of pre-entry search may affect an entrepreneur's performance aspirations, we cannot exclude the possibility that those conducting sparse search develop rather low performance aspirations, which may be easily exceeded. Likewise, it may be the case that those conducting comprehensive search develop rather high performance aspirations, which may be difficult to meet. Indeed, the fact that we observed most entrepreneurs who conduct sparse search at first doing the same in their second business (cf. Table 6a) could be attributed to some inertia resulting from exceeding their aspiration (if their original aspirations were low).

*** *Table 6a and 6b about here* ***

CONCLUSION, DISCUSSION AND LIMITATIONS

The literature on habitual entrepreneurship has highlighted the importance of entrepreneurial experience (Baron & Ensley, 2006; Ucbasaran et al., 2008). However, we know relatively little about how entrepreneurs' prior experience shapes their actions. Hence, in responding to calls for studies that examine specific entrepreneurial task and experience (Ucbasaran et al., 2014), we examined the entrepreneurial pre-entry search activities of habitual entrepreneurs in the informal economy. The pre-entry stage is an early stage of the venture creation process where entrepreneurs search for information to learn about the feasibility and viability of their business idea (Bennett & Chatterji, 2019). This early stage learning has important implications for strategic decisions and outcome post-entry (Chen et al., 2018; Cope & Watts, 2000).

Theoretically, we anticipated that performance relative to aspirations would shape how entrepreneurs' use their pre-entry search experience from the first business in the way they search for information and test the viability of their business idea in the second business. Empirically, we found that the extent of prior search positively correlates with the extent of subsequent search, and this relationship is stronger when entrepreneurs exceed their performance aspirations. More precisely, entrepreneurs seem to be prone to replicate their search behavior especially when they perform well. Those who search sparsely continue to search sparsely, while those who search most broadly are the ones who used to so already in the previous business.

Our findings indicate a resource mechanism such that the more they search first, the more they search in the second case, especially when performance above aspiration gives entrepreneurs resource buffers to engage in more volumes of search activities. This is even more important in a resource scarce informal economy context where the most common step that individuals take after seriously considering a business idea is to save money towards developing or pursuing the idea. The paper answers calls for studies that integrates a resource perspective and learning theory (Greve, 2021). Thus, we contribute to the discourse on how performance feedback relates to learning from a resource perspective in two ways. First, by focusing on entrepreneurs in a resource-constrained context, we highlight how prior search experience and performance shape pre-entry learning. Second, we build on prior work distinguishing between resource-freeing and resource-consuming

activities (Kuusela et al., 2017), highlighting a difference between high and low resource-consuming activities and its implications for how entrepreneurs search during the pre-entry stage. Our post-hoc analysis signals that habitual entrepreneurs may start by engaging in low resource-consuming activities before advancing to high resource-consuming activities. This could indicate that on the whole, habitual entrepreneurs draw from their previous experience and act more cautiously in subsequent businesses, thereby showing different patterns in the start-up activities as highlighted by prior studies (Alsos & Kolvereid, 1998; Dabić et al., 2021).

It may also reflect the cognitive framework that entrepreneurs develop during the pre-entry search that creates a template for them to draw upon especially when they are successful (Ahmad et al., 2020; Minniti & Bygrave, 2001). Cognitive processes are difficult to change, especially if an entrepreneur has been previously successful (Busenitz & Barney, 1997; Ucbasaran, Wright, Westhead, et al., 2003). Success may create inertia, resistance to change and the tendency to repeat successful strategies that have worked in the past, based on the belief that those strategies will continue to be successful (Funken et al., 2020; Minniti & Bygrave, 2001). While all these mechanisms may be valid explanations, our data currently does not allow us to disentangle the independent effects of habitual entrepreneurs' cognitive framework from the results of exceeding performance aspirations.

The observation that most entrepreneurs in the informal economy may not learn much about the viability of their first business, yet they may exceed their (rather low) aspirations and repeat the same search behavior in subsequent business could shed light on the pervasiveness of necessity entrepreneurship and survivalist businesses that are commonplace in the informal economy. While habitual entrepreneurs in the formal economy are prone to pursue more innovative businesses (Robson et al., 2012), those in the informal economy may pursue more replicative businesses. Put differently, most habitual entrepreneurs in the informal economy do not push the boundaries of their previous knowledge by searching more broadly because they are satisfied with their current strategy, hence, the pervasiveness of replication in the informal economy. This is however in line with a large body of literature that show a relationship *“between strong performance and persistence with current strategy”* such that when performance *“exceeds aspirations, there is no need to change what appears to be the ‘right’ strategy”* (Kim et al., 2015, p. 1363).

Whereas this study provides important contributions to the literature, it is not without limitations. The hypotheses are tested using a unique dataset that is based on self-reported information by entrepreneurs. Survey methodology lends itself to a number of biases; while we employed a variety of measures to ensure that our results are not significantly influenced by these biases, we acknowledge that respondents may suffer from recall bias (Singh et al., 2016). Accordingly, future researchers may benefit from longitudinal studies over long periods of time where observations can be recorded close to “real time”. Longitudinal studies can enable us to have long-term measurement of performance in the informal economy. They will also enable scholars to assess performance in the second business to fully investigate whether learning effects may take place or not. However, since tracking down respondents in the informal economy is a difficult task, partnering with third party organizations that have access to a large sample of entrepreneurs in the informal economy might prove to be useful.

A large sample size is important for the statistical power needed to unearth nuances in the entrepreneurial pre-entry activities of habitual entrepreneurs in the informal economy. Given our current sample size, we are limited to only a few analytical tools with statistical significance being low. We believe that larger sample sizes will enable scholars to test more complex relationships such as differences that could relate to serial and parallel entrepreneurs. Future studies may benefit from highlighting differences that may exist between serial and parallel entrepreneurs in the informal economy during the pre-entry search stage of the venture creation process.

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TABLES

Table 1: Descriptive Statistics

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|--|-----|-------|-----------|-------|--------|
| Dependent Variable | | | | | |
| Total number of pre-entry steps – second spell | 136 | 5.375 | 3.668 | 0.000 | 15.000 |
| High cost steps | 136 | 2.375 | 1.996 | 0.000 | 9.000 |
| Independent Variables | | | | | |
| Total number of pre-entry steps – first spell | 136 | 7.213 | 3.725 | 0.000 | 15.000 |
| Performance Above | 136 | 0.412 | 0.494 | 0.000 | 1.000 |
| Control Variables | | | | | |
| Formal Education | 136 | 0.184 | 0.389 | 0.000 | 1.000 |
| Prior knowledge & exp. | 136 | 0.765 | 0.426 | 0.000 | 1.000 |
| Female | 136 | 0.426 | 0.496 | 0.000 | 1.000 |
| Number of children | 136 | 2.000 | 1.606 | 0.000 | 8.000 |
| Neuroticism | 136 | 2.637 | 0.783 | 1.000 | 4.667 |
| Extraversion | 136 | 2.895 | 0.927 | 1.000 | 4.667 |
| Openness | 136 | 3.988 | 0.736 | 2.000 | 5.000 |
| Agreeableness | 136 | 4.140 | 0.629 | 1.667 | 5.000 |
| Conscientiousness | 136 | 4.475 | 0.493 | 2.667 | 5.000 |
| Same Industry | 136 | 0.360 | 0.482 | 0.000 | 1.000 |

Table 2: Pairwise correlations

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
|--|---------|---------|---------|---------|---------|---------|---------|--------|---------|--------|--------|--------|-------|-------|
| (1) No. of steps in 2 nd Search | 1.000 | | | | | | | | | | | | | |
| (2) highcoststeps2 | 0.806* | 1.000 | | | | | | | | | | | | |
| (3) No. of steps in 1 st Search | 0.555* | 0.352* | 1.000 | | | | | | | | | | | |
| (4) Formal Education | 0.045 | -0.023 | 0.094 | 1.000 | | | | | | | | | | |
| (5) Prior kno. & exp. | 0.176* | 0.166 | 0.271* | 0.039 | 1.000 | | | | | | | | | |
| (6) Female | -0.178* | -0.021 | -0.217* | -0.064 | -0.258* | 1.000 | | | | | | | | |
| (7) No.of children | -0.107 | -0.081 | -0.093 | -0.190* | 0.022 | 0.121 | 1.000 | | | | | | | |
| (8) Neuroticism | -0.250* | -0.198* | -0.120 | 0.010 | -0.043 | 0.287* | -0.084 | 1.000 | | | | | | |
| (9) Extraversion | -0.099 | -0.113 | -0.071 | 0.109 | -0.076 | 0.163 | 0.071 | 0.236* | 1.000 | | | | | |
| (10) Openness to exp. | 0.196* | 0.188* | 0.185* | 0.094 | 0.156 | -0.236* | -0.150 | -0.123 | -0.096 | 1.000 | | | | |
| (11) Agreeableness | -0.036 | -0.160 | 0.130 | 0.015 | 0.031 | -0.232* | 0.134 | -0.104 | -0.102 | 0.204* | 1.000 | | | |
| (12) Conscientiousness | 0.137 | 0.091 | 0.153 | 0.030 | -0.051 | -0.199* | -0.181* | -0.027 | -0.171* | 0.365* | 0.434* | 1.000 | | |
| (13) Performance_above | -0.082 | 0.015 | -0.213* | 0.027 | -0.064 | 0.064 | 0.000 | 0.134 | 0.096 | -0.074 | -0.020 | 0.042 | 1.000 | |
| (14) Same Industry | -0.098 | -0.103 | -0.132 | -0.079 | -0.270* | 0.096 | -0.029 | 0.041 | 0.141 | -0.008 | -0.070 | -0.061 | 0.088 | 1.000 |

“* $p < 0.05$ ”

Table 3. Predicting the total number of pre-entry steps in the second pre-entry search
Negative Binomial Results

| VARIABLES | Model 1 | Model 2 | Model 3 | High RC Model 4 |
|---|------------------------------------|--------------------------------|-------------------------------------|---------------------------------|
| No. of steps in 1 st Search | | 0.099*** (0.013) [0.000] | 0.074*** (0.018) [0.000] | 0.045** (0.021) [0.034] |
| Performance Above Aspiration | | | -0.474* (0.248) [0.055] | -0.577** (0.282) [0.041] |
| Performance Above Aspiration x No. of steps in 1 st Search | | | 0.058** (0.024) [0.017] | 0.080*** (0.029) [0.006] |
| Female | -0.067 (0.128) [0.604] | -0.049 (0.113) [0.664] | -0.065 (0.109) [0.554] | 0.161 (0.144) [0.265] |
| Formal Education | 0.059 (0.137) [0.668] | -0.041 (0.116) [0.724] | -0.052 (0.111) [0.640] | -0.128 (0.131) [0.329] |
| Prior knowledge and experience | 0.249 (0.166) [0.133] | 0.055 (0.138) [0.690] | 0.084 (0.140) [0.551] | 0.172 (0.161) [0.285] |
| Number of children | 0.004 (0.042) [0.918] | -0.006 (0.045) [0.893] | -0.008 (0.047) [0.870] | -0.006 (0.068) [0.926] |
| Neuroticism | - 0.167** (0.076) [0.028] | -0.167** (0.068) [0.014] | - 0.171*** (0.066) [0.010] | -0.227*** (0.084) [0.007] |
| Extraversion | -0.016 (0.058) [0.781] | -0.011 (0.054) [0.840] | -0.016 (0.052) [0.753] | -0.049 (0.072) [0.498] |
| Openness | 0.071 (0.090) [0.427] | 0.035 (0.074) [0.637] | 0.049 (0.072) [0.492] | 0.143 (0.103) [0.164] |
| Agreeableness | -0.129 (0.086) [0.134] | -0.186** (0.076) [0.014] | - 0.192*** (0.074) [0.009] | -0.339*** (0.098) [0.001] |
| Conscientiousness | 0.167 (0.138) [0.227] | 0.148 (0.121) [0.223] | 0.100 (0.116) [0.387] | 0.161 (0.148) [0.280] |
| Constant | 1.513** (0.732) [0.039] | 1.489** (0.641) [0.020] | 1.985*** (0.674) [0.003] | 1.903** (0.860) [0.027] |
| Pseudo R2 | 0.0479 | 0.114 | 0.120 | 0.109 |

Note: Robust standard errors in parentheses; p values in squared brackets. N = 136. All models include dummy variables for industry, age group, and income range. Robust standard errors in brackets *** p<0.01, ** p<0.05, * p<0.1
High RC --High Resource Consuming activities only

Table 4: Percentage of respondents who each of the listed steps in first and second spells of pre-entry search

| Variable | First Search | Second Search |
|---|---------------------|----------------------|
| Learning | | |
| Discuss with friend | 36 | 40 |
| Discuss with family | 52 | 57 |
| Discuss with ethnic member | 10 | 07 |
| Discuss with community member | 13 | 10 |
| Discuss with religious member | 09 | 03 |
| Search the Internet or stores | 29 | 27 |
| Consult a friend who is an expert | 36 | 33 |
| Consult family member who is an expert | 25 | 20 |
| Consult an expert you did not already know | 20 | 22 |
| Explicitly consider how other firms might respond | 26 | 21 |
| <i>Build a working prototype, made samples or provided the service on a pilot basis</i> | <i>31</i> | <i>10</i> |
| <i>Test demand for your product or service (talk to people)</i> | <i>38</i> | <i>16</i> |
| <i>Collect feedback from people who tested your product/service</i> | <i>39</i> | <i>15</i> |
| <i>Used feedback from pilot or demand testing to modify business idea</i> | <i>38</i> | <i>16</i> |
| Administrative | | |
| <i>Create some sort of document to explain the business concept to others</i> | <i>08</i> | <i>04</i> |
| Create a social media account for the business (eg. Facebook, Whatsapp) | 16 | 15 |
| Made financial projections to determine feasibility | 32 | 24 |
| <i>Write a business plan</i> | <i>10</i> | <i>04</i> |
| Resource (Acquisition) | | |
| Explore financing with a micro-finance, bank, etc. | 13 | 15 |
| Explore financing options from family members | 40 | 32 |
| Explore financing options from friends | 10 | 14 |
| Explore financing options from religious group | 03 | 02 |
| Applying to an incubator/accelerator program or business plan competition | 00 | 00 |
| Explored the use of patents, copyright, or trademark to protect your idea | 11 | 08 |
| Resource (Commitment) | | |
| Saved money to invest in pursuing the business idea | 88 | 65 |
| Invested your own money | 88 | 39 |
| Exchange | | |
| Made a sale | 55 | 18 |

Table 5. Clusters of pre-entry search during 1st and 2nd spell of entrepreneurship

| Clusters of pre-entry search: first spell of entrepreneurship | Full Sample (N=136) | Sparse search (N=43) | Narrow Search (N=49) | Comprehensive Search (N=44) |
|---|----------------------------|-----------------------------|-----------------------------|------------------------------------|
| Average number of pre-entry steps | 7.765 | 3.326 | 8.449 | 11.341 |
| Clusters of pre-entry search: second spell of entrepreneurship | Full Sample (N=136) | Sparse search (N=89) | Narrow Search (N=0) | Comprehensive Search (N=47) |
| Average number of pre-entry steps | 5.375 | 3.213 | 0 | 9.468 |

Table 6a. Tabulation of Clusters in first search by clusters in second search in Percentages

| | Second Search | |
|---------------|---------------|---------------|
| First Search | Sparse | Comprehensive |
| Sparse | 93 | 7 |
| Narrow | 51 | 49 |
| Comprehensive | 55 | 45 |

Table 6b. Tabulation of Clusters in first search by performance relative to aspirations

| | Performance above Aspiration | |
|---------------|------------------------------|-----|
| First Search | No | Yes |
| Sparse | 40 | 60 |
| Narrow | 67 | 33 |
| Comprehensive | 68 | 32 |

FIGURES

Figure 1a: Histogram for the number of pre-entry steps in second search

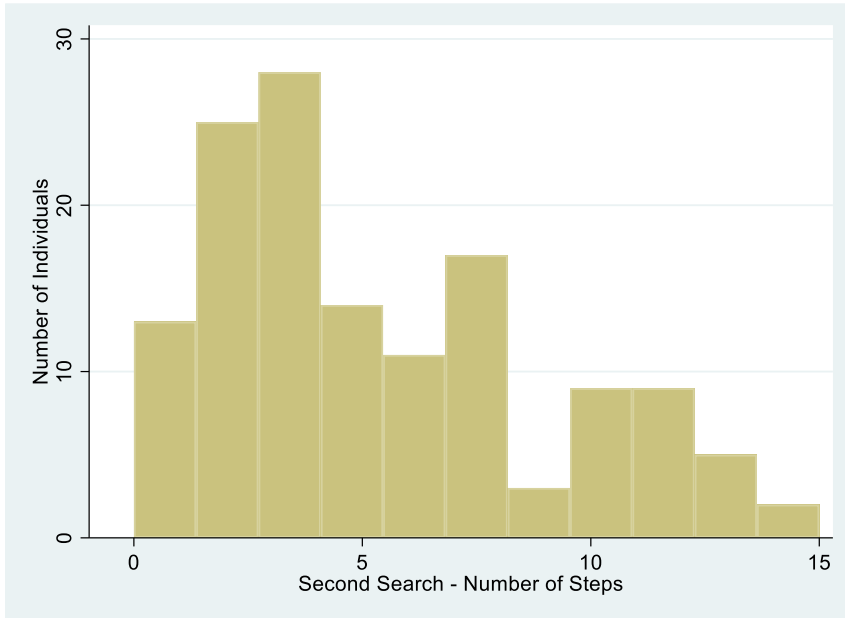


Figure 1b: Histogram for the number of pre-entry steps in second search (High resource-consuming steps)

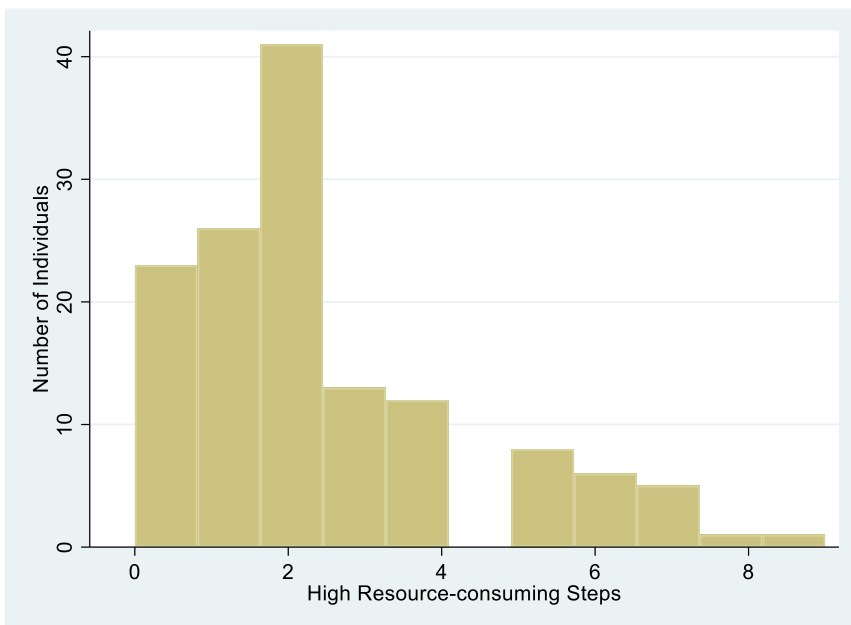


Figure 1c: Histogram for the number of pre-entry steps in first search

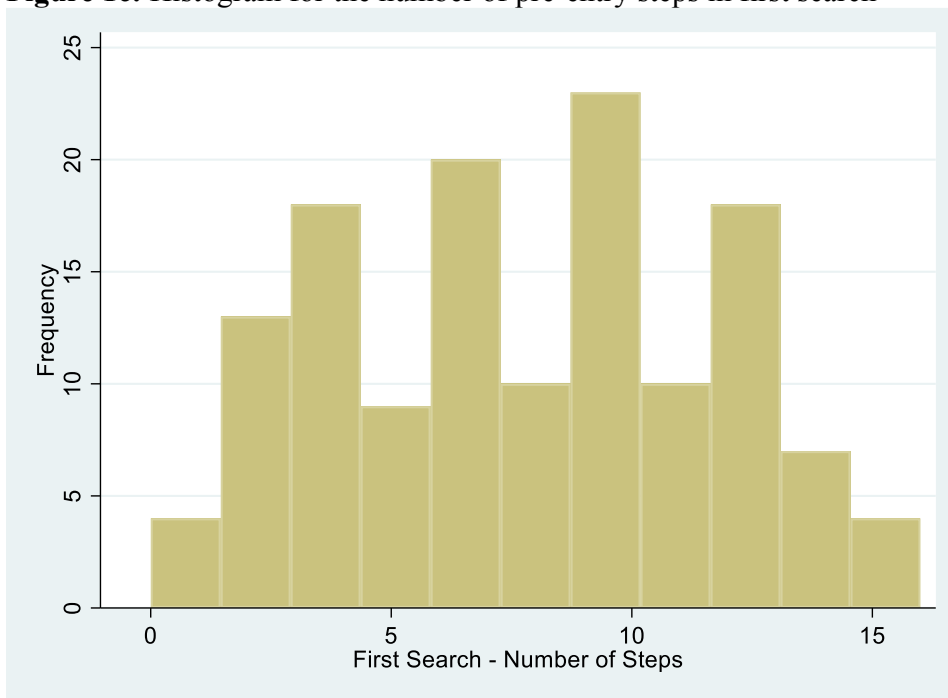


Figure 2a: Predicted Number of Steps in Second Spell (Performance above aspiration dummy)

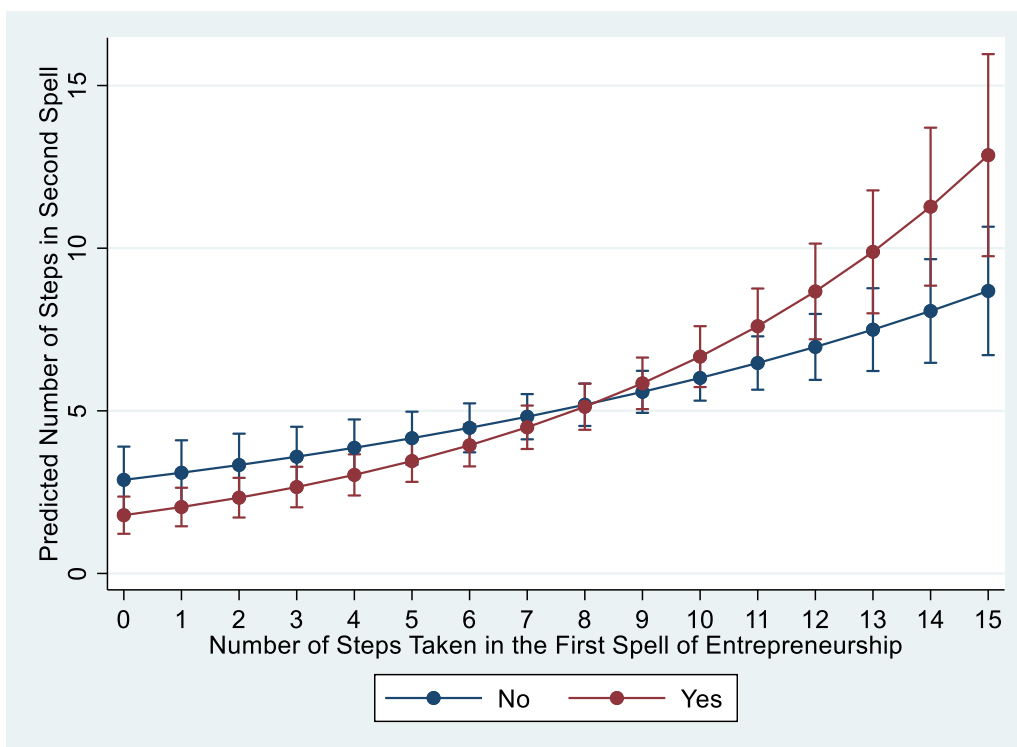


Figure 2b: Predicted No. of High-Resource Constraining Steps in 2nd Spell

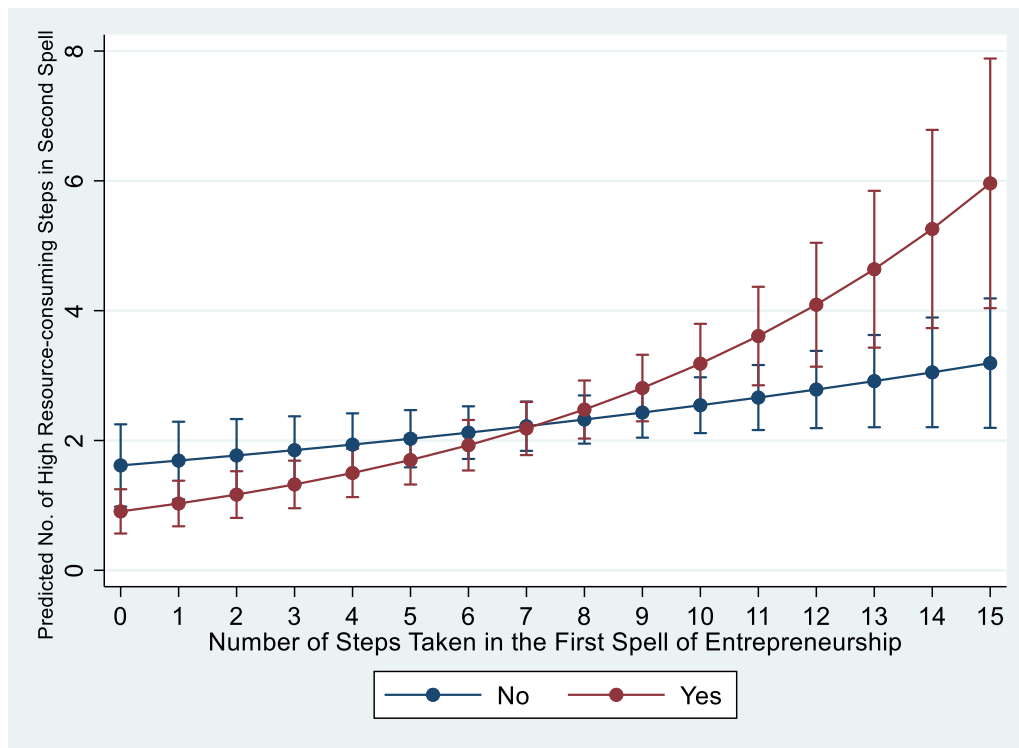


Figure 3a: Pre-entry steps in search in the first spell of entrepreneurship – 3 Groups

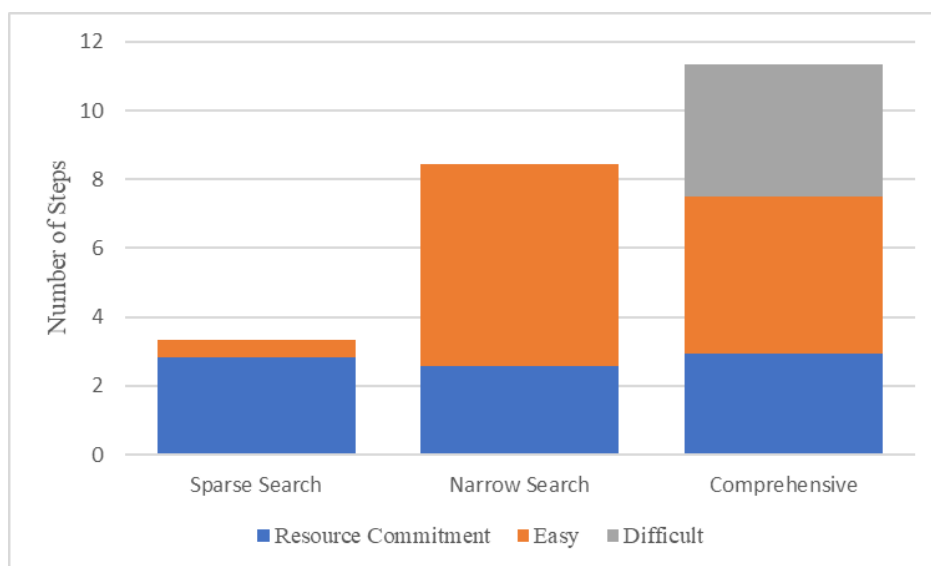
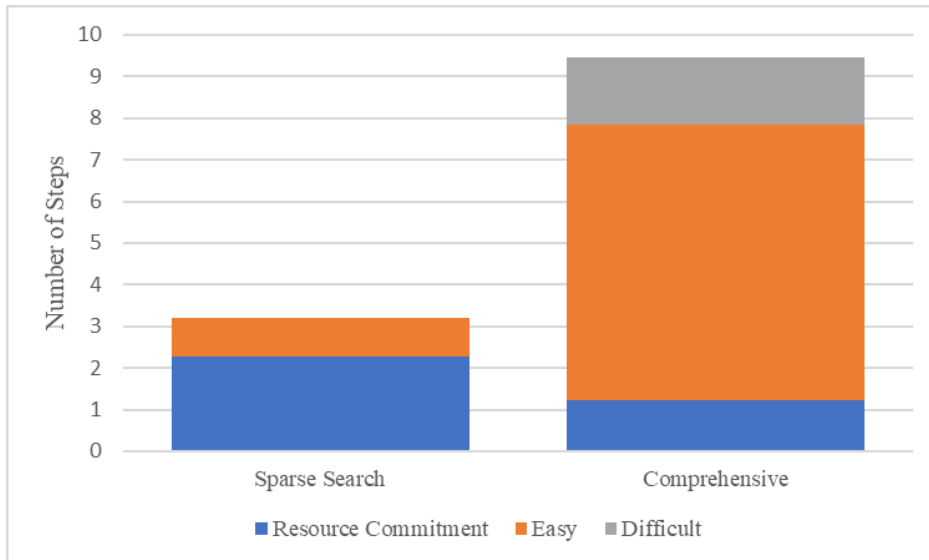


Figure 3b: Pre-entry steps in search in second spell of entrepreneurship – 2 Groups



APPENDIX

Appendix 1. Descriptive statistics of habitual entrepreneurs

| | (N = 136) |
|---|-----------|
| Age | Percent |
| 18-24 | 2.21 |
| 25-34 | 34.56 |
| 35-44 | 45.59 |
| 45-54 | 11.03 |
| 55-64 | 5.88 |
| 65 and Above | 0.74 |
| Sex (Female) | 42.65 |
| Income | |
| No income GH¢0 | 0.74 |
| Less than GH¢400 | 16.91 |
| Above GH¢400 - But less than GH¢1,000 | 36.03 |
| Above GH¢1000 - But less than GH¢2,500 | 27.21 |
| Above GH¢2,500 - But less than GH¢5,000 | 7.35 |
| Above GH¢5,000 - But less than GH¢10,000 | 2.21 |
| Above GH¢10,000** | 8.09 |
| I don't know | 1.47 |
| I won't say | 0.74 |
| Number of children | |
| 0 | 24.26 |
| 1 | 16.18 |
| 2 | 19.12 |
| 3 | 25.00 |
| 4 | 10.29 |
| 5 | 2.94 |
| 6 | 1.47 |
| 7 | 0 |
| 8 | 0.74 |
| Formal education | |
| No formal education | 2.21 |
| 6 years of formal education | 5.15 |
| 9 years of formal education | 36.03 |
| 12 years of formal education | 36.03 |
| 14 years of formal education | 11.76 |
| 16 years of formal education | 6.62 |
| Other | 2.21 |
| Same Industry Dummy | |
| Yes | 36.03 |
| No | 63.97 |
| Performance Above Aspiration Dummy | |
| Yes | 41.18 |
| No | 58.82 |

** GH¢100 was equivalent to 16.6 USD at the time of data collection

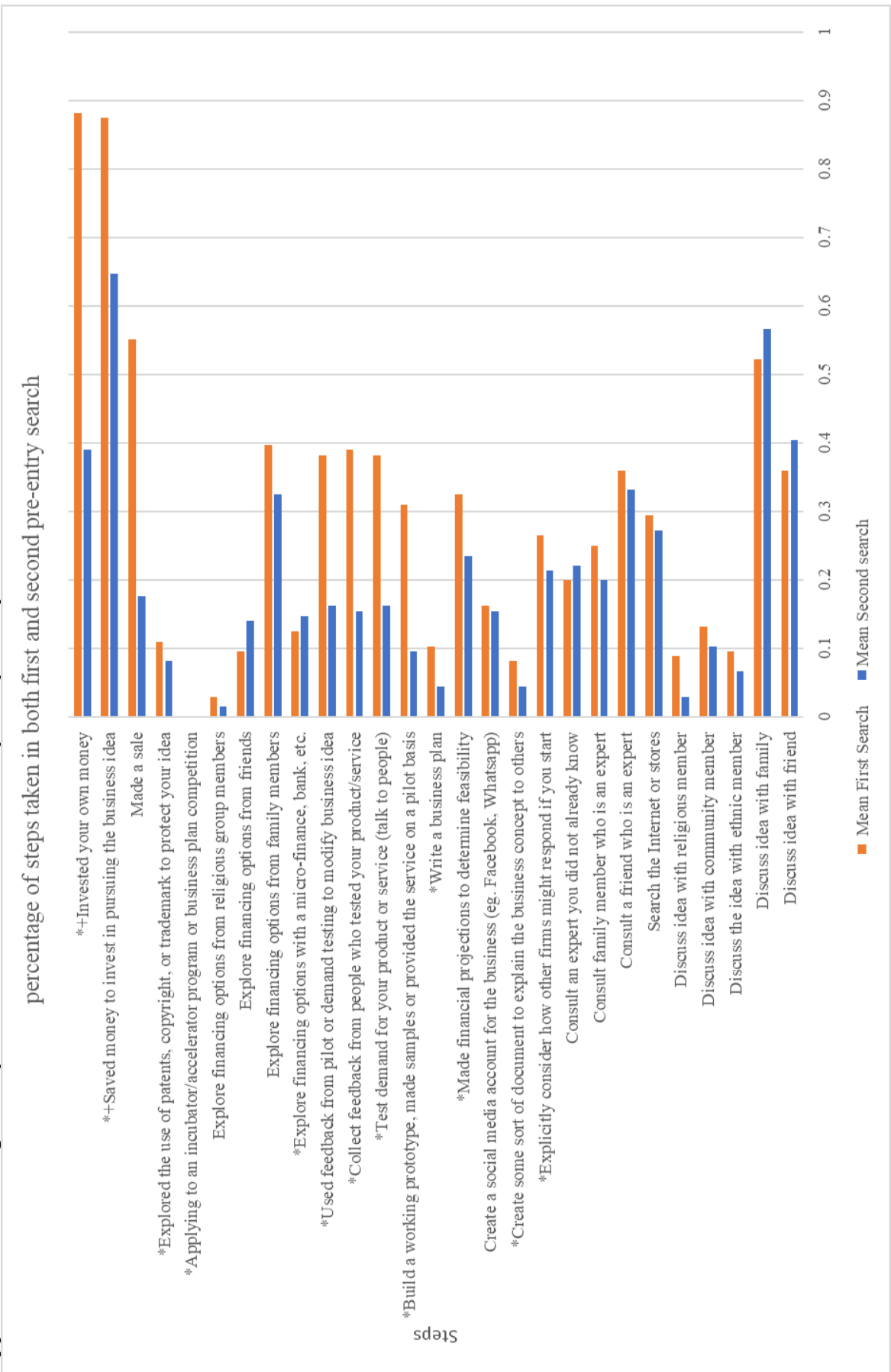
Appendix 2: List of pre-entry steps and their frequency in the sample (N = 136)

| Variable | Mean Second Search |
|--|--------------------|
| *+Saved money to invest in pursuing the business idea | 0.647 |
| Discuss idea with family | 0.566 |
| Discuss idea with friend | 0.404 |
| *+Invested your own money | 0.390 |
| <i>Consult a friend who is an expert</i> | 0.331 |
| Explore financing options from family members | 0.324 |
| Search the Internet or stores | 0.272 |
| *Made financial projections to determine feasibility | 0.235 |
| Consult an expert you did not already know | 0.221 |
| *Explicitly consider how other firms might respond if you start | 0.213 |
| <i>Consult family member who is an expert</i> | 0.199 |
| Made a sale | 0.176 |
| *Test demand for your product or service (talk to people) | 0.162 |
| *Used feedback from pilot or demand testing to modify business idea | 0.162 |
| Create a social media account for the business (eg. Facebook, Whatsapp) | 0.154 |
| *Collect feedback from people who tested your product/service | 0.154 |
| *Explore financing options with a micro-finance, bank, etc. | 0.147 |
| Explore financing options from friends | 0.140 |
| Discuss idea with community member | 0.103 |
| *Build a working prototype, made samples or provided the service on a pilot basis | 0.096 |
| *Explored the use of patents, copyright, or trademark to protect your idea | 0.081 |
| Discuss the idea with ethnic member | 0.066 |
| *Create some sort of document to explain the business concept to others | 0.044 |
| *Write a business plan | 0.044 |
| Discuss idea with religious member | 0.029 |
| Explore financing options from religious group members | 0.015 |
| *Applying to an incubator/accelerator program or business plan competition | 0.000 |
| Note: * High resource-consuming , i.e. go-to-market steps (*) and resource commitment steps (*+) | |

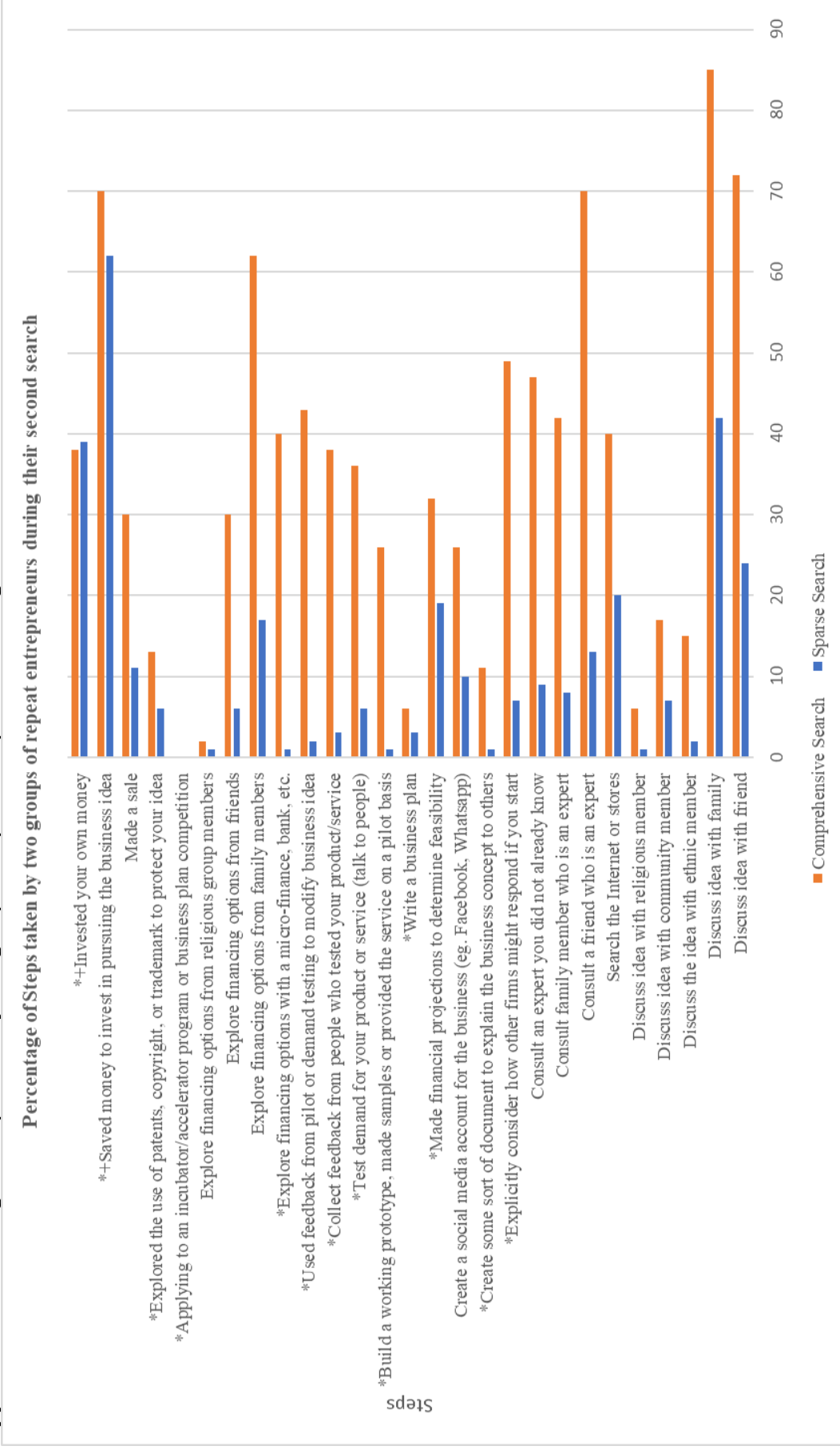
Appendix 3: List of industries represented in sample

1. Manufacturing of clothes or shoes
2. Manufacturing of baked food
3. Manufacturing of books and paper bags
4. Other manufacturing (not included above)
5. Selling food or Groceries
6. Selling of clothes
7. Selling of computers and phones
8. Selling of secondhand products
9. Selling of household electronics
10. Selling of construction materials
11. Selling of motorcycle, bicycle, and accessories
12. Selling of other goods (not included above)
13. Transport Services
14. Hairdressers and barber shops
15. Mobile money services
16. Repairing services (computers, printers etc)
17. Printing Services
18. Other services (not included above)
19. Farming

Appendix 4a: Percentage of steps taken in both first and second spell of pre-entry search



Appendix 4b: Percentage of Steps taken by two groups of repeat entrepreneurs during their second search



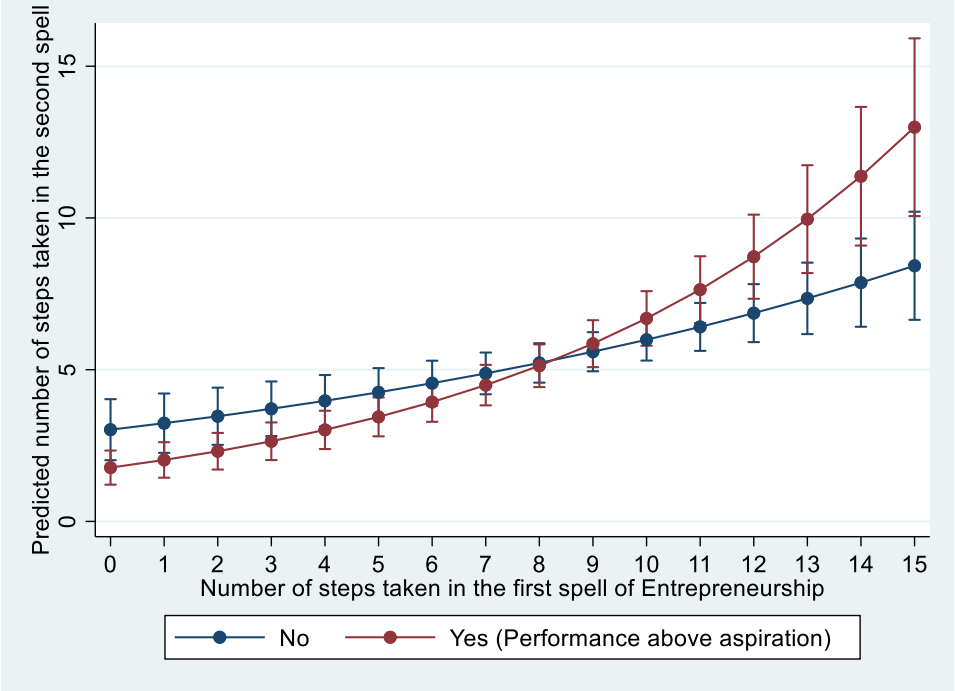
Appendix 5a: Predicting the total number of pre-entry steps in the second pre-entry search
Poisson Results

| VARIABLES | Model 1 | Model 2 | Model 3 | High RC Model 4 |
|---|--------------------------------|---------------------------------|---------------------------------|---------------------------------|
| No. of steps in 1 st Search | | 0.095*** (0.013) [0.000] | 0.068*** (0.017) [0.000] | 0.045** (0.021) [0.033] |
| Performance Above Aspiration | | | -0.533** (0.234) [0.023] | -0.583** (0.280) [0.037] |
| Performance Above Aspiration x No. of steps in 1 st Search | | | 0.064*** (0.022) [0.004] | 0.081*** (0.028) [0.004] |
| Female | -0.066 (0.122) [0.586] | -0.034 (0.111) [0.756] | -0.058 (0.106) [0.583] | 0.156 (0.139) [0.260] |
| Formal Education | 0.037 (0.135) [0.783] | -0.029 (0.115) [0.797] | -0.044 (0.108) [0.682] | -0.128 (0.131) [0.329] |
| Prior knowledge and experience | 0.260 (0.161) [0.106] | 0.072 (0.137) [0.600] | 0.101 (0.138) [0.462] | 0.173 (0.161) [0.282] |
| Number of children | -0.006 (0.046) [0.893] | -0.015 (0.045) [0.745] | -0.016 (0.047) [0.726] | -0.007 (0.068) [0.915] |
| Neuroticism | -0.171** (0.077) [0.026] | -0.183*** (0.068) [0.007] | -0.184*** (0.065) [0.004] | -0.229*** (0.084) [0.007] |
| Extraversion | -0.017 (0.062) [0.779] | -0.018 (0.053) [0.728] | -0.025 (0.051) [0.626] | -0.050 (0.072) [0.488] |
| Openness | 0.065 (0.090) [0.468] | 0.034 (0.076) [0.654] | 0.050 (0.073) [0.490] | 0.142 (0.104) [0.171] |
| Agreeableness | -0.125 (0.089) [0.161] | -0.175** (0.073) [0.017] | -0.185*** (0.071) [0.009] | -0.339*** (0.097) [0.000] |
| Conscientiousness | 0.165 (0.132) [0.212] | 0.143 (0.119) [0.230] | 0.088 (0.113) [0.434] | 0.159 (0.149) [0.285] |
| Constant | 1.570** (0.786) [0.046] | 1.500** (0.640) [0.019] | 2.057*** (0.668) [0.002] | 1.912** (0.869) [0.028] |
| Pseudo R2 | 0.0981 | 0.192 | 0.202 | 0.141 |

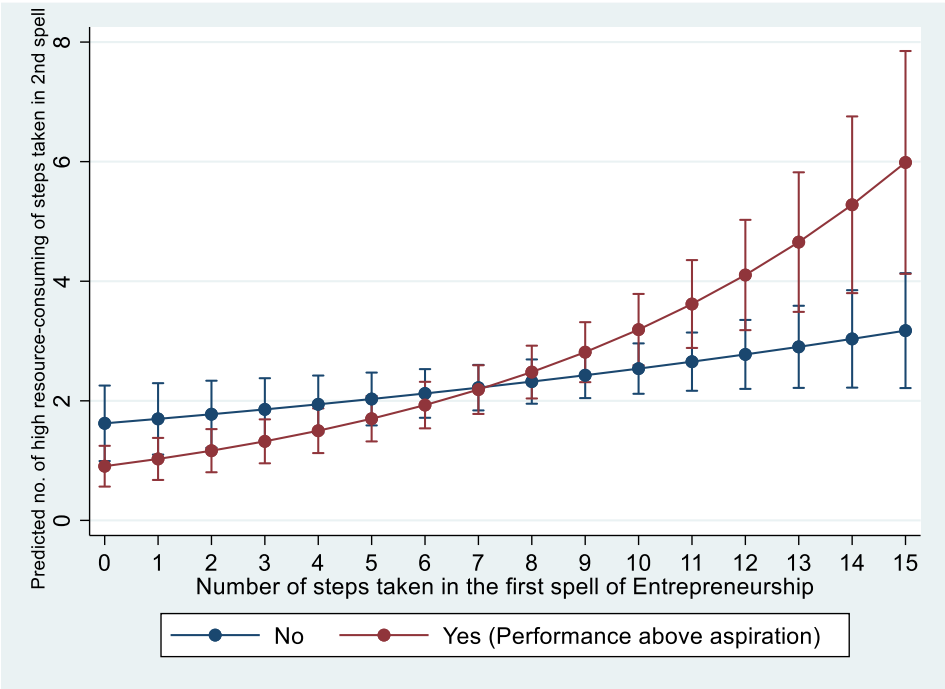
Note: Robust standard errors in parentheses; p values in squared brackets. N = 136. All models include dummy variables for industry, age group, and income range. Robust standard errors in brackets *** p<0.01, ** p<0.05, * p<0.1

High RC --High Resource Consuming activities only

Appendix 5b: Predicted Number of Steps in Second Spell (Poisson Regression)



Appendix 5c: Predicted No. of High-Resource Constraining Steps in Second Spell (Poisson Regression)

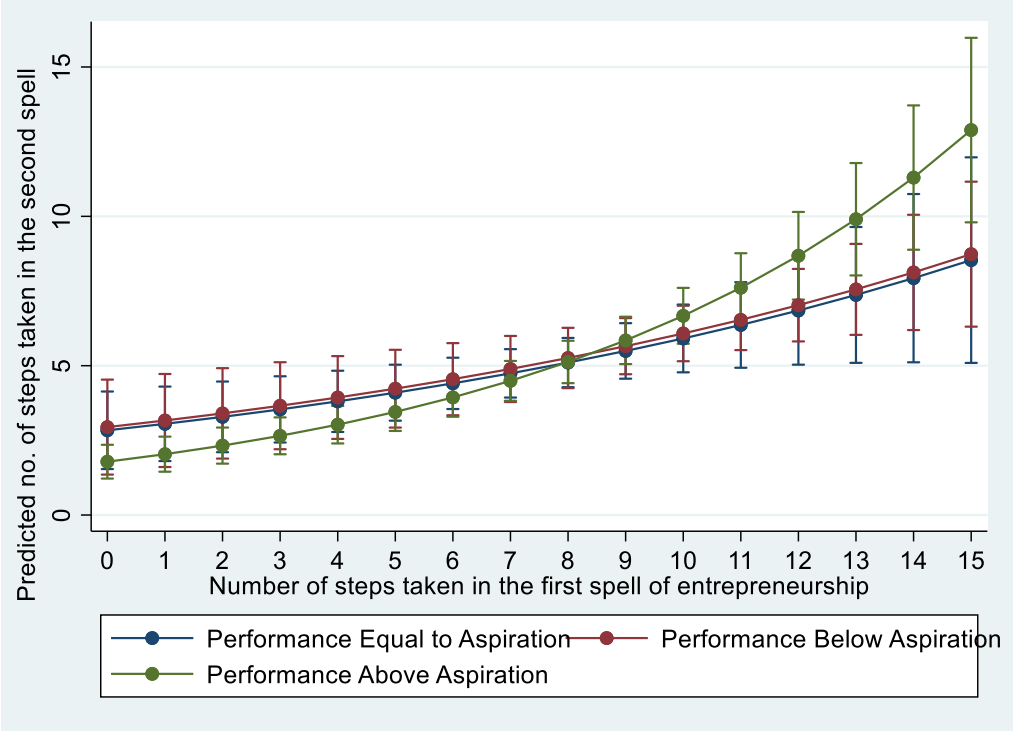


Appendix 6a: Robustness Check – performance below, equal and above -Negative Binomial Results

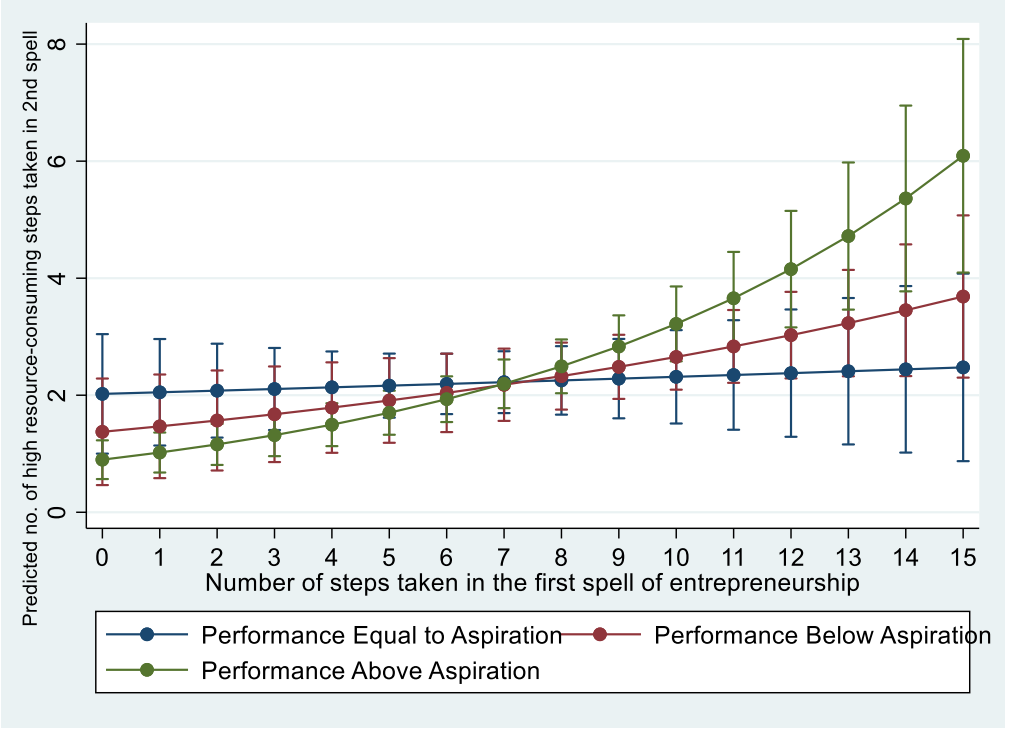
| VARIABLES | Model 1 | Model 2 | Model 3 | High RC Model 4 |
|--|--------------------------------|--------------------------------|---------------------------------|---------------------------------|
| No. of steps in 1 st Search | | 0.099*** (0.013) [0.000] | 0.073*** (0.027) [0.007] | 0.013 (0.036) [0.706] |
| Performance Below Aspiration | | | 0.037 (0.353) [0.917] | -0.386 (0.439) [0.379] |
| Performance Above Aspiration | | | -0.463 (0.289) [0.110] | -0.812** (0.323) [0.012] |
| Performance Below Aspiration x No. of steps in 1 st Search | | | -0.001 (0.037) [0.980] | 0.052 (0.051) [0.301] |
| Performance Above Aspiration x No. of steps in 1 st Search | | | 0.058* (0.032) [0.066] | 0.114*** (0.042) [0.007] |
| Female | -0.067 (0.128) [0.604] | -0.049 (0.113) [0.664] | -0.068 (0.109) [0.535] | 0.164 (0.144) [0.257] |
| Formal Education | 0.059 (0.137) [0.668] | -0.041 (0.116) [0.724] | -0.051 (0.111) [0.646] | -0.148 (0.142) [0.301] |
| Prior knowledge and experience | 0.249 (0.166) [0.133] | 0.055 (0.138) [0.690] | 0.082 (0.142) [0.565] | 0.155 (0.163) [0.342] |
| Number of children | 0.004 (0.042) [0.918] | -0.006 (0.045) [0.893] | -0.007 (0.046) [0.884] | -0.004 (0.067) [0.956] |
| Neuroticism | -0.167** (0.076) [0.028] | -0.167** (0.068) [0.014] | -0.170*** (0.066) [0.010] | -0.220*** (0.083) [0.008] |
| Extraversion | -0.016 (0.058) [0.781] | -0.011 (0.054) [0.840] | -0.018 (0.052) [0.733] | -0.056 (0.072) [0.433] |
| Openness | 0.071 (0.090) [0.427] | 0.035 (0.074) [0.637] | 0.051 (0.073) [0.486] | 0.155 (0.104) [0.134] |
| Agreeableness | -0.129 (0.086) [0.134] | -0.186** (0.076) [0.014] | -0.194*** (0.075) [0.009] | -0.366*** (0.104) [0.000] |
| Conscientiousness | 0.167 (0.138) [0.227] | 0.148 (0.121) [0.223] | 0.097 (0.115) [0.395] | 0.143 (0.149) [0.338] |
| Constant | 1.513** (0.732) [0.039] | 1.489** (0.641) [0.020] | 2.009*** (0.731) [0.006] | 2.372** (1.036) [0.022] |
| Pseudo R2 | 0.0479 | 0.114 | 0.120 | 0.111 |

Note: Robust standard errors in parentheses; p values in squared brackets. N = 136. All models include dummy variables for industry, age group, and income range. Robust standard errors in brackets *** p<0.01, ** p<0.05, * p<0.1
High RC --High Resource Consuming activities only

Appendix 6b: Predicted Number of Steps in Second Spell



Appendix 6c: Predicted No. of High-Resource Constraining Steps in 2nd Spell



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