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OVERCOMING INVISIBILITY:
THE ACKNOWLEDGEMENT OF HOME-BASED BUSINESSES

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Tese Doutoral apresentada à Escola de Administração de Empresas de São Paulo da Fundação Getúlio Vargas como requisito para obtenção do título de Doutor em Administração de Empresas.

Campo de conhecimento: Estratégia Empresarial

Orientador: Prof. Dr. Tales Andreassi

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Ao mar, que me leva e traz.

ABSTRACT

This thesis is a collection of three essays analysing the significance and characteristics of home-based businesses (HBBs) and the effect of individual and firm level conditions on HBBs performance. Home-based businesses are a phenomenon that can bring new light into a widespread forms of entrepreneurial activity, with contributions to the entrepreneurial resources and perceptions literature. These studies will allow us to explore, from different perspectives, the extent to which the HBBs characteristics differentiate from traditional onsite businesses and how individual and firm level attributes affect HBBs performance. The first study contain a systematic review of the literature, aimed at identifying the main variables expected to differentiate HBBs from non-HBBs and influence HBBs performance. The second study describes main characteristics and significance of HBBs, while the third develops a configurational typology of high and low performance HBBs.

RESUMO

Esta tese é um compêndio de três artigos de pesquisa que analisam a importância e as características dos negócios geridos em casa, ou *home-based businesses* (HBBs), e o efeito de variáveis individuais e organizacionais no desempenho da HBBs. Negócios geridos em casa são um fenômeno que pode trazer contribuições para a literatura de empreendedorismo sobre recursos e percepções. Os estudos que compõe esta tese nos permitirão explorar, por diferentes perspectivas, até que ponto as características das HBBs se diferenciam dos negócios tradicionais e como variáveis individuais e organizacionais afetam o desempenho das HBBs. O primeiro estudo contém uma revisão sistemática da literatura, com o objetivo de identificar as principais variáveis que diferenciam HBBs das não-HBBs e que influenciam seu desempenho. O segundo estudo descreve as principais características e a destaca relevância econômica das HBBs, enquanto o terceiro desenvolve uma tipologia de HBBs de alto e baixo desempenho.

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CHAPTER 1

1. Presentation

This thesis is a collection of three essays on home-based businesses (HBBs) and the relationship between individual resources and perceptions, firm performance and macro level outcomes. The thesis reflects the results of different methodologies and approaches used by the author to objectively assess the state of the art of research on HBBs and assess the effect of multilevel factors on HBBs performance. The work contained in this thesis is presented as follows. Chapter 1 introduces the articles and the main theoretical, empirical and research considerations of the essays. Subsequently, in Chapter 2, presents the essays individually and as three independent articles for best comprehension and discrete consideration. Finally, in Chapter 3, the author summarizes contributions, implications for theory and practice, as well as opportunities for further research.

2. Introduction

This thesis is a collection of three essays on home-based businesses (HBBs) and the relationship between individual resources and perceptions, firm performance and macrolevel outcomes. The study of HBBs is a topic of increased interest in the academic, business and policy environments. HBBs are important because they are the majority of businesses in many countries and one of the main trends of the post-industrial era (Mason, Carter and Tagg, 2011). In developed economies such as Australia, Scotland, United States and United Kingdom, HBBs represent between 50% and 60% of all businesses and have shown consistent growth in the last decades (Mason et al, 2011; Mason and Reuschke, 2015; Walker et al., 2004). In developing economies, such as Brazil, the lack of official statistics makes the phenomenon practically

invisible to researchers, although it is expected to also be a significant part of small and micro businesses and an important form of entrepreneurial activity. In this regard and according to the OCDE (2016), in Brazil, micro businesses represented 85% of overall businesses and 15.3% of the Gross Domestic Product (GDP) in 2013 (OCDE, 2016).

Entrepreneurship in general, and HBBs, are important for social and economic development at the local, regional and country levels, being positively associated with the creation of economic value and jobs (Walker, 2003; Mason et al, 2011; Clark and Douglas, 2014). However, two different stereotypes surround HBBs activity. The first highlights the social, economic and environmental benefits of HBBs. Highly educated individuals work on high value generating activities and still enjoy independence, autonomy and flexibility to balance work and family demands. As such, HBB is the future of work and strengthen communities by creating wealth and employment. The second argues HBBs activity relate to individuals with low level of education, working on low-value, life-style, hobby or survival-oriented activities for erratic wages. In this view, HBBs are not legitimate businesses and generates no positive socio-economic outcomes.

This thesis calls attention to HBBs activity and the relationship between individual resources and perceptions, firm performance and macrolevel outcomes. To enhance current understanding on HBBs phenomenon, this research approaches three different research gaps. Using adequate methodologies to address each research question, the research contributes to general entrepreneurship literature as well as to HBBs literature. Our findings and conclusions contribute to practice in the form of evidence-based insights for practitioners and public policy.

The first study focuses on identifying the main research streams on HBBs and the factors that influence and are influenced by the phenomenon. The research consists of a systematic review of the home-based businesses (HBBs) literature and is motivated by the need to identify current approaches and consider alternative and more theoretically grounded

variables to improve the understanding on how HBBs influences outcomes at different levels of analysis. Based on the review, the study contributes to the literature by clarifying the nomological network of variables and theories used to examine with HBBs phenomenon, synthesizing prior research findings and identifying neglected research fields and inconsistencies in the literature, while proposing an agenda for future research.

The second we used a descriptive exploratory analysis of the data and simple estimation of the economic importance of HBBs activity. Our research builds on GEM analytical method to obtain specific comparative information about HBBs in Brazil.

The third and final study investigates how the entrepreneur's individual resources and perceptions, combined with the firm's innovation, use of internet and formal registration, is associated with high and low performance HBBs. The research adopts a configurational approach using crisp set qualitative comparative analysis (csQCA) to explore configurations of multilevel conditions leading a HBBs performance threshold. The findings contribute to the HBBs literature by empirically identifying configuration of conditions that lead to high and non-high performance HBBs and the interplay of individual and firm level conditions in the HBBs Brazilian context.

In all three research studies, the author contributes to the understanding of the HBBs phenomenon and relationship between individual resources and perceptions, firm performance and macrolevel outcomes. The author contributes the HBBs and family business and work-life balance literature by examining the nomological network of variables and theories currently used to examine with HBBs phenomenon, evidencing research gaps and proposing an agenda for future research. Then, the author also contributes to HBBs literature by unveiling the proportion of HBBs, whether they are different from non-HBBs, and how much they contribute to overall economic activity. Finally, we explore sufficiency causal conditions on

configurations of individual and firm conditions associated with high and low performance HBBs.

This thesis is organized as follows. Following this introduction, we present key aspects deemed necessary to generally contextualize the HBBs phenomenon. In Chapter 2 we present the three articles focused on advancing current knowledge on HBBs. Finally, in Chapter 3 we complement the thesis with final conclusions on the main implications of our findings, the theoretical and practical contributions of the study and opportunities for future research.

3. The Home-Based Business Phenomenon

A business is home-based whenever it sells products or provide services by a self-employed, self-managed individual, with or without employees, operating from or at home (Mason et al, 2011). The defining characteristic of HBBs is that it operates in a residential property rather than a commercial premise (Dwelly et al, 2006; Felstead, et al, 2005; Wynarczyk and Graham's, 2013). It means that the production process or service provision takes place in the home, or the residential premise is an administrative back office (Clark and Douglas, 2011; Walker and Webster, 2004). As such, HBBs owners use the home residence for a core business activity to generate income (Clark and Douglas, 2014).

The number of people working from home has increased in the last decades and comprise both home-based employees and HBBs (Baines, 2002; Feslthead et al., 2005; Mason, Carter and Tagg, 2011; Vorley and Rodgers, 2014). Even though home-based working and HBBs share common issues, fundamental differences exist. For example, HBBs owners are self-employed and self-managed, while formal labor contracts link home-based employees to organizations. Organizations provide financial and social resources to employees, but also means hierarchy and external management. In contrast, HBBs owners are more independent

and have more flexibility, but need to rely on networking and teamwork capabilities. In addition, HBBs owners tend to be more solitary and, therefore, to engage with local community to access different types of resources and services (Mason et al. 2011).

Moreover, due to the lack of resources that home-based employees can normally access from their organization, HBB owners are more likely to interact with the local community to shop, eat, work and obtain advice, information and other business services (Newbery & Bosworth, 2010). Those activities enliven neighborhoods and communities, besides adding to the local economy and contributing to sustain households which often depend on multiple sources of income (Clark and Douglas, 2014; Mason, 2011; Mason et al, 2011; Kapasi and Galloway, 2016; Sayers, 2010). HBB also reduces everyday commuting and does not require new buildings or commercial premises that are environmentally inefficient (Mason et al, 2011).

Nowadays, home-based employees still represent a relatively small part of the overall number of employees, but HBBs comprises a significant part of businesses in many economies worldwide (Mason et al, 2011; Felstead et al., 2005). In this regard, social, economic and cultural changes in society have driven the growth of HBBs (Haltiwanger, Jarmin, & Miranda, 2009; Mason et al., 2011; Mason and Reuschke, 2015; Rideout & Gray, 2013; Wennekers & Thurik, 1999; Van Stel and Storey, 2004). First, the dissipation of the industrial labor economy and the emergence of new organizational arrangements. Second, shifts in the market structure and new methods of production and service provision. Third, accessible information and communication technologies. Fourth, social and cultural trends driven by demographic change. And fifth, social and cultural acceptance of entrepreneurship as a legitimate economic activity.

Although HBBs are most businesses, HBBs are still under researched and practically invisible mainly due to the lack of official statistics. HBBs research emerges in the 1990s from the family business and work-life balance literatures. Initial studies on the family business and

work-life were mainly interested in identifying variables associated with general impact of HBBs on family life (Owen & Winter, 1991). Almost instantly, HBBs researchers recognized gender as an important variable for HBBs and thus turned to gender literature to examine individual characteristics such as resources and motivation, as well as firm attributes, by developing comparative analyses and exploring the nature of women owned HBBs activities (Homes et al, 1997; Loscocco & Smith-Hunter, 2004; Thompson, 2009; Walker & Webster, 2004).

Then, HBBs research started investigating the social and economic contribution of HBBs activity, that rely on the assumption that the owner self-employment, his/her local use of services and acquisition of products, and the social capital he/she builds onto the local community, contributes to its development. These studies has drawn upon theoretical perspectives such as economic development theory (Mason et al, 2011; Newbery & Bosworth, 2010), evolutionary theory (Sayers, 2010), the socio-economic inclusion and empowerment of women (Kantor, 2003; Lawanson, 2012), ethnic minorities (Anwar and Daniel, 2017) and impoverished individuals (Gulyani and Talukdar, 2010; Lawanson, 2012), as well as return of public investments (Redmond & Walker, 2010).

Additionally, HBBs researchers have found growing evidence of the positive relationship between the use of information and communication technologies and HBBs (Baines, 2002; Baines & Gelder, 2003; Daniel et al, 2014; Kapasi & Galloway, 2016; Phillips, 2002; Van Gelderen et al, 2008). More recently, researchers have adopted other theoretical perspectives, such as effectuation (Daniel el at, 2014), entrepreneurial social capital (Westlund et al, 2014), and urban and neighborhood planning (Reuschke & Houston, 2016), to enhance HBBs understanding, which suggests a transition to more theoretically grounded approaches.

In general, studies focused on challenging HBBs Cinderella status (Mason, 2010) and argued HBBs were legitimate businesses that contribute to social and economic development

(Walker, 2003; Walker and Brown, 2004, Sayers, 2005, Mason et al, 2011; Clark and Douglas, 2011; 2014). To accomplish that, several theoretical perspectives have been used to investigate the HBBs phenomenon. Overall, the theoretical streams focus on individual, firm and macro level variables that influence and are influenced by HBBs.

As the clear separation between spaces of home and work vanishes, scholars, policy makers and governments in many countries have acknowledged the importance of HBBs to social and economic development (Baines, 2002; Felstead et al., 2005; Mason et al, 2011; Mason and Reuschke, 2015). However, we still lack adequate understanding on different types HBBs and how the individual, firm and macro level factors that influence is influenced by HBBs activity, which also implies the absence of adequate policy recommendations.

In this context, the first research gap addressed by this thesis is the development of a systematic review of the literature to synthetize the main research streams and the factors that influence and are influenced by HBBs activity. In doing so, we identified four main streams of research associated with HBBs: *family business and work-life balance, gender, HBBs outcomes and socio-economic development, and information and communication technologies*. In reviewing the literature, we identified the need to a) examine alternative individual and firm level factors that drive HBBs performance; b) examine alternative contexts and negative effects of HBBs; c) examine HBBs from a longitudinal perspective; and d) build on set-theoretic methods to examine HBBs configurations based on combinations of multilevel conditions.

The second research gap addressed by this thesis is to estimate the overall economic contribution of HBBs in Brazil and examine differences related to HBBs and non-HBBs. As such, the study confirms the social and economic contribution of HBBs, which contributes to 4.4% of the Gross Domestic Product (GDP) of Brazil in 2014 and comprises 17 million self-employed individuals, besides almost 25 thousand added jobs. The study also suggests HBBs

and non-HBBs are similar regarding sociodemographic, psychological factors and motivational aspects, but is a predominantly female activity.

Lastly, the third research gap addressed by this thesis is the examination of combinations of necessary and enough causal conditions that lead to high and non-high performance HBBs. The study identifies three configurations of conditions associated with high performance and five associated with low HBBs performance. It further explains the interplay of combinations of conditions in the HBBs Brazilian context, such as the role of gender and positive entrepreneurial perceptions for high performance and the importance, or the lack of, innovation, use of internet and registration for both high and low performance HBBs.

At the end of this research endeavor, the study provides a deep understanding on HBBs phenomenon. More specifically, the existing works suggest a multilevel approach to examine HBBs emergence and performance. In addition, findings indicate that it is essential to consider the existence of different types of HBBs depending on the context under analysis. At the same time, findings indicate HBBs in Brazil is a gendered phenomenon, and that women and the lack of resources are associated with low performance HBBs. Meanwhile, entrepreneurial perceptions were found to be of secondary importance for HBBs, as suggested by Daniel et al (2014).

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CHAPTER 2

**Home-Based Businesses: A Systematic Review of the Literature and An Agenda for
Future Research**

Abstract

With increased emphasis being placed on the growth of home-based business (HBBs) activity in the last decades, we have witnessed a growing research interest on the many factors that influence and are influenced by self-employed, self-managed individuals, with or without employees, operating businesses from or at home. Our study presents a systematic review of the literature on the main research streams on HBBs and the factors that influence and are influenced by HBBs. Based on the review, the study develops an agenda for future research and implications for HBBs performance is highlighted. In doing so, the study calls for the need to consider alternative and more theoretically grounded variables and approaches to improve the understanding on how HBBs influences outcomes at different levels of analysis. Additionally, the review identifies the need to a) examine alternative individual and firm level factors that drive HBBs performance; b) examine alternative contexts and negative effects of HBBs; c) examine HBBs from a longitudinal perspective; and d) build on set-theoretic methods to examine HBBs configurations based on combinations of multilevel conditions.

Keywords: Entrepreneurship, home-based businesses, work-life balance, gender, online businesses.

1 Introduction

Home-based businesses (HBBs) are the majority of businesses in many countries, with significant implications for local social and economic development (e.g. Clark & Douglas, 2014; Mason et al, 2011). In today's post-industrial world, being a HBBs entrepreneur is not only an alternative for traditional employment in low-value activities, but legitimate businesses in many different sectors with serious growth aspirations and still the possibility of balancing work and family demands (Mason et al, 2011; Walker, 2003; Walker, Wang & Redmond, 2008). While scholars have argued that the social and economic positive influence of entrepreneurship has been overrated (Shane, 2009), HBBs demands new forms of assessing social and economic contributions (Redmond & Walker, 2010), besides being a viable alternative for economic inclusion of some sections of the population (see Anwar & Daniel, 2017; Mason et al, 2011), especially in less developed economies (e.g. Kantor, 2003).

Through systematically reviewing the literature on HBBs the present study makes a number of contributions to the entrepreneurship and family business literatures, as well as having implications for policy makers and practitioners. First, despite the obvious relevance of HBBs for entrepreneurship, family businesses and socio-economic development, no systematic literature review about HBBs focused on peer-reviewed journals exists. Moreover, our systematic review will allow us to clarify the nomological network of variables and theories to which the phenomenon of HBBs is related, contributing to a more theoretically grounded approach to HBBs research.

Second, given that prior research on HBBs is fragmented, with researchers from diverse disciplinary backgrounds adopting a wide variety of methodological and theoretical approaches to examine different research questions, we also contribute to the literature by synthesizing findings from existing research based on the main stream of research used to investigate HBBs. Such synthesis will not only bring much needed clarity to the key insights

derived from prior work, but also provide a basis to inform future research. It will also assist practitioners and policy makers to develop business strategies and programs to support and develop HBBs in the future, as well as assess existing ones.

Third and most importantly, the present study makes a critical contribution by identifying neglected research fields and inconsistencies in the literature, and highlighting opportunities for empirical and theoretical advancement of the research domain. In the following section, we highlight the methods adopted to search for empirical literature on HBBs, before commencing our review of the literature.

2 Methods

We followed Short (2009) recommendations for review articles and used web of science, google scholar and related databases to identify peer-reviewed articles with home-based business in their title, keywords or abstract that were published from the beginning of 1990 to the end of 2017. In addition, we undertook an exhaustive backward and forward citation search based on identified articles to identify further articles on HBBs which did not include the term in their title, abstract or keywords, but related to the phenomenon of interest.

To ensure the quality of articles used in the literature review and provide a comprehensive understanding of the phenomenon, we examined the body of relevant conceptual and empirical works in top management and related outlets. We only included articles if they met the following criteria: (a) the article was published in a peer-reviewed journal, and (b) it focused on HBBs rather than home-work or other related themes (e.g. Rowe, 1992; Baines & Walker, 2003). Given we chose to focus on understanding the overall themes and theoretical contributions of HBBs domain, we did not include a significant body of research which focuses on home-working and other related domains not related to the home-based entrepreneurial activity. Finally, we decided to limit our search to articles published after

1990, right before when Owen and Winter (1991) and Orser (1991) published their seminal research.

For this study, the author screened the downloaded articles to decide whether they met the inclusion criteria, and a second researcher was consulted if doubts on whether to exclude an article emerged. We did not include book chapters, unpublished papers or dissertations as we could not verify the quality of research given the lack of peer review. In the following sections we review the literature on HBBs. In doing so we pinpoint how HBBs have been operationalized in existing studies, examine the theoretical lenses used to analyze HBBs and review prior literature on the individual, organizational and macro variables deemed to relate to the HBBs phenomenon.

3. Literature review

3.1 Theoretical lenses for analyzing HBBs

Several theoretical perspectives have been used to investigate the HBBs phenomenon. In general, the theoretical streams focus on individual, firm and macro level variables that influence and are influenced by HBBs. HBBs research emerges from the family business and work-life balance literature, which highlights the relationship between family, household and the nature of work within HBBs. Themes associated with family and work-life balance literature included the extent to which the functioning of the family and that of the business are intertwined, as well as the conciliation or conflicts emerging from work and family demands (Beach, 1993; Baines & Gelder, 2003; Berke, 2003; Owen & Winter, 1991; Fitzgerald & Winter, 2001).

Naturally, HBBs research recognized gender has been an important variable for the HBBs phenomenon and thus turned to the gender literature. HBBs gender research mainly

focused on individual characteristics such as resources and motivation, and firm attributes to develop gendered comparative analyses and the nature of HBBs activities (Homes et al, 1997; Loscocco & Smith-Hunter, 2004; Thompson, 2009; Walker & Webster, 2004).

To the extent HBBs have been associated with social and economic development, it started attracting policy attention and government resources were channelled to support and develop HBBs. In this context, HBBs research has drawn upon theoretical perspectives such as economic development theory (Mason et al, 2011; Newbery & Bosworth, 2010), socio-economic inclusion, empowerment and return of investment (Kantor, 2003; Lawanson, 2012; Redmond & Walker, 2010) to investigate how and to what the alleged positive impact of HBBs activity could be identified and measured. In addition, research on HBBs has also incorporated additional theoretical perspectives, such as effectuation (Daniel et al, 2014), entrepreneurial social capital (Westlund et al, 2014), and urban and neighbourhood planning (Reuschke & Houston, 2016).

Finally, our review identified that some prior research on HBBs had been mainly descriptive and a-theoretical, meaning they focused on the phenomenon itself, but lacked theoretical background. Overall, it is important to notice that while we categorized HBBs literature in five main research streams, studies are often intertwined, and themes tend to overlap, depending on the research question and methodological approach.

3.2. Operational definition of HBBs

HBBs are difficult to be identified and official statistics are often not available. As such, research has relied on different sources of data to analyze the phenomenon, from datasets gathered by small businesses organizations (Mason et al, 2011), to entrepreneurship focused datasets such as the Global Entrepreneurship Monitor (see Thompson et al, 2009). Based on

extant research, the most important defining characteristic of home-based businesses is that it operates in a residential property rather than a commercial premise (Felstead, et al, 2005; Wynarczyk and Graham's, 2013).

For example, Mason et al (2011) defines a business as home-based whenever it sells products or provide services by a self-employed, self-managed individual, with or without employees, operating from or at home. Two of the most important aspects of HBBs is that the production process or service provision takes place in the home or the residential premise is an administrative back office (Clark and Douglas, 2011; Walker and Webster, 2004). As such, HBB owners use the home residence for a core business activity to generate income (Clark and Douglas, 2014). Some studies, such as Walker and Brown (2004) argues that, whenever possible, the operational definition of HBBs should focus on legitimate ongoing businesses. Accordingly, Sayers (2005) operationalizes HBBs as those formal businesses that use the entrepreneurs home address for the business tax purposes.

However, prior research, especially those based on GEM data, generally rely on individual responses and capture both formal and informal activity. In this regard, Walker (2003) have argued that most HBBs themselves are non-employing businesses, so the information obtained through the entrepreneur response is legitimate in the HBBs context, where the businesses cannot be seen in isolation from the entrepreneur. In general, the definition includes commercial homes (Lynch, 2005), professional practices (Clark and Douglas, 2010), farm-based businesses (Mason et al, 2011), household service suppliers (Felstead, 2005) and online home-businesses (Daniel et al., 2014). Previous studies normally exclude independent contractors (Mason et al, 2011), project-based working (Grabher, 2002; Ekismyth, 2012; Sydow and Staber, 2002), free agents (Pink, 2002) and different forms of outsourcing.

3.3 Research streams on HBBs literature

A growing literature has identified individual, firm and macro level factors that relate to HBBs. Such work not only shows that HBBs are diverse and range from very low to high-value activities, but also highlights the importance of multi-level characteristics to understand the phenomenon (Davidsson & Wiklund, 2001). The following sections examine the main research streams used by scholars to investigate HBBs phenomenon.

3.3.1 *Family business and work-life balance*

HBBs research emerges from the family business and work-life balance literatures. Initial studies on the family businesses and work-life balance stream were mainly interested in identifying variables associated with general impact of HBBs on family life (Owen & Winter, 1991). For example, Loscocco (1997) have found that parental identity, provider status and life stage of the family and the businesses were significant on shaping work-life relationships, and that family intrudes more on work among women, and work intrudes more on family among men (Loscocco, 1997). Accordingly, Fitzgerald and Winter (2001) focused on the nature of intrusions to advise and help HBBs entrepreneurs on how to balance work and family demands.

Furthermore, several other studies have identified different factors that influence the impact HBBs on family life, for example the nature of the business, having an appropriate space to work, the amount of time devoted to the business, the household context and issues related to children and dependants (Owen & Winter, 1991; Beach, 1993; Baines & Gelder, 2003). Additionally, Baines (2002) investigated the increased use of information and communication technologies by HBBs and suggested an overall negative effect on the quality of work-life balance. Other research has suggested that not only HBBs influence work life balance, but also the decision to become a HBBs is influenced by it. For example, researchers have identified

that flexibility, lifestyle and the ability to balance work and family, as well as issues related to dependants, positively influenced HBBs ownership intentions (Walker, Wang & Redmond, 2008).

Researchers have also investigated how HBBs entrepreneurs cope with competing work and family demands. For example, Berke (2003) revealed that women manage internal and external temporal and spatial boundaries by negotiating work and family demands using spatial, behavioral, temporal, social, and psychological strategies. However, if not well managed, competing work and family demands can impose HBBs to operate part time (Thompson, 2009) and the search for economic sustainability may not materialize (Loscocco and Smith-Hunter, 2004; Walker et al. 2008; Wynarczyk et al., 2008).

3.3.2 Gender

The individual characteristic that has gained most attention from HBBs researchers was gender. Research have argued there are significant gender differences associated with HBBs, including reasons to start-up, life stage and age of the entrepreneur, business assistance, and perceived negative factors (Homes et al, 1997). Accordingly, Loscocco and Smith-Hunter (2004) found that women engaged in HBBs enjoy less economic success than those running traditional onsite businesses, suggesting it would be a good option for women with no strong financial needs. In addition, Thompson et al (2009) argues that women with low levels of entrepreneurial resources are more likely to operate HBBs, which relates to decisions shaped by circumstance and part time commitment, which potentially contributes further to marginality. Furthermore, the absence of organizational resources and a regular paycheck tend to increase social isolation, stress and limit the access to training and skill development, (Beach, 1993; Baines, 2002). In line with these studies, researchers have argued that circumstances

shape women decisions to become HBBs entrepreneurs, which is associated with low value activities, low levels of resources (Thompson et al, 2009) and reduced personal and psychological risks (Daniel et al, 2014). For example, Walker and Webster (2004) investigated perceptions of communities towards HBBs and found that some sections of the community relate to HBBs as lifestyle businesses and not to be taken seriously.

Quite the opposite, other researchers have suggested that, while women normally work fewer hours and their primarily focus is on flexibility and work life balance, women-owned HBBs are a legitimate form of business with serious growth intentions (Breen, 2010; Breen & Karanasios, 2010). Similarly, Green and Karanasios (2010) found that over half of female owned HBBs have experienced growth and almost three quarters aspire future growth, thus challenging views of women-owned HBBs as legitimate organizations with an indifferent attitude towards growth. As such, researchers call for the importance of public policy to support women HBBs owners and promote the activity as a significant economic and social contributor to the economy and society in general.

Another gendered aspect of HBBs is that prior research has argued that women are more likely to bear family-related responsibilities and childcare due to social and cultural factors (Homes et al., 1997; Walker & Webster, 2004), which implies that females on average would be more likely to be HBBs (Thompson et al, 2009; Loscocco & Smith-Hunter, 2004). For example, Clark and Douglas (2010), analyzed micro businesses in New Zealand and found that 44% of the HBBs entrepreneurs were male and 56% were female, which suggests a potentially higher proportion of women leading smaller and less economically significant businesses. Again, researchers have also found quite opposite empirical evidence. For example, Walker (2003: 43) states that “the profile of the typical home-based business owner-operator was a male, working full-time in their business”. In addition, Walker et al (2008) have identified that, although more salient for women than for men, gender per se was not a determining factor

in why individuals started HBBs. The mixed findings regarding the relationship between gender and HBBs may result from sampling procedures or the use of dichotomous measures of dichotomous measures of physiological sex rather than a socially-constructed phenomenon (Henry, Foss & Ahl, 2006).

3.3.3 HBBs antecedents, motivation and growth aspirations

HBBs antecedents, motivation and growth aspirations are intertwined and likely to affect the nature of entrepreneurial activity and its outcome. In general, research focused on the antecedents of HBBs have relied on sociodemographic as well as motivational variables to estimate firm performance and ultimately broader social and economic impact. Research on antecedents of HBBs work has mainly investigated the relationship between individual and firm level characteristics on performance (e.g. Rowe, Haynes & Bentley, 1993). In turn, research on motivation have employed different ways to assess motivation, from dichotomic classifications such as necessity and opportunity driven entrepreneurship, to more complex and nuanced categorizations.

Initially, Rowe, Haynes and Bentley (1993) investigated antecedents of HBBs outcomes focused on the characteristics of the HBBs entrepreneur, the firm and managerial practices and found that individual and family characteristics were more relevant for performance than those associated with the firm. Other researchers found that prudent business management and external factors contributed to past growth, while business management and market opportunities such as exports and use of internet were associated to future growth (Green & Karanasios, 2010). Similarly, Serra and Garcia (2010) investigated HBBs in the aesthetics industry in Puerto Rico and found that start up motivations were like other HBBs, but due to

institutional constraints, high level of education and pre-established clientele were key to success.

Clark and Douglas, 2014, in turn, demonstrated the importance of the personal aspirations, energy, commitment, priorities and social networks of the owner/managers, combined with core functional business activities and growth strategies for HBBs growth. More recently, Daniel, Di Domenico & Sharma, 2014 explored effectuation theory to within HBBs context and found that online HBBs enterprising minimize pre-commitment importance and thus is associated with low levels of individual self-efficacy and experience. The research also argues that HBBs allow entrepreneurs to set affordable loss at lower levels and that the concept should include social status and reputation, the “acceptable loss to one’s sense of self” (Daniel et al, 2014). From a macrolevel perspective, Reuschke and Houston (2016) and Reuschke (2016) investigated the relationship between housing and suggested it is an entrepreneurial asset thus providing financial security and space for HBBs.

Regarding motivation and growth aspirations, Good and Levy (1991) found that the primarily motivation of HBBs entrepreneurs was the need to save money and minimize the risk, while for some it appeared to be a lifestyle decision rather than based on economic or financial rationale. Similarly, Walker (2003) found that most HBBs operate from home because it was convenient and there was no intention to move out to commercial premises. Meanwhile, Walker et al (2008) identified that HBBs ownership was predominantly driven by flexibility, lifestyle and work family balance. This is in line with Mason et al (2011) in the UK, that found 65% of HBBs location decision focus on cost-minimization, while 54% was based on convenience and 44% because the nature of the business did not require commercial premises. Van Gelderen et al (2018) also found that HBBs motivation to star up include, amongst other motives, reason of autonomy, freedom and independence.

Nonetheless, Breen and Karanasios (2010) found that even though flexibility and work life balance were primarily focus of women-owned HBBs, they were legitimate businesses with growth intentions. Similarly, Kapasi and Galloway (2016) have investigated stories of rural HBBs entrepreneurs and found that motivation to start up include not only low costs and flexibility in terms of lifestyle, but also context specific factors such as the lack of, distance from and costs of alternative job opportunities. Finally, moving away from variable oriented measures of motivation, Vorley and Rodgers (2014) suggested incidents leading to the HBBs entrepreneurship need to be understood in terms of linkages between entrepreneurial motivations and the life course of individuals.

3.3.4 HBBs outcomes and socio-economic development

A growing body of literature has examined the outcomes of HBBs activity at both firm and macro level, such as economic and social development (e.g. Clark & Douglas, 2014; Mason et al, 2011). This section review outcomes of HBBs while addressing the micro-macro link.

In this regard, research have mostly integrated firm and macro level HBBs activity outcomes when reporting research findings. For example, Rowe (1999: 66) has argued that because HBBs is a potential alternative or supplemental income for residents in rural America, it is also “considered a form of community development for its economic multiplier effect on the community and region”. Research have also found that entrepreneurial HBBs accounted for 10% of all United States small-business sector and that they would normally use the internet for doing business, while still facing regulations constraints that prevent them to expand even faster (Phillips, 2002).

In the UK, Mason et al (2011) have identified HBBs account for 36% of all small businesses in the Federation of Small Businesses 2005/2006 biennial survey sample and are

present in higher proportions in rural and non-metropolitan areas. The research has also identified that 10% of UK HBBs achieve significant scale, mostly are full-time businesses that create jobs and are concentrated in computer related, business, and professional service sectors. In Brazil, Salusse and Andreassi (2017) found that, in 2014, HBBs were responsible for 4.5% of the Gross Domestic Product (GDP) of the country, comprising about 17 million self-employed individuals and responsible for approximately 25 thousand added jobs.

Interestingly, Clark and Douglas (2010) measured perceived comparative performance of micro HBBs and found that 46% of them perceived their performance matched others in their industry, while 16.5% of them were optimistic and perceived their performance above competitors. The study has argued that although tiny, New Zealand HBBs were strongly committed to growth. Analyzing rural HBBs Kapasi and Galloway (2016) emphasized specific context motivators for startup and the importance of HBBs on contributing for employment in rural areas, as well as providing employment for skilled and professional people.

In general, studies challenges HBBs Cinderella status (Mason, 2010) and argue HBBs are legitimate businesses that contribute to social and economic development (Walker, 2003; Walker and Brown, 2004, Sayers, 2005, Mason et al, 2011; Clark and Douglas, 2011; 2014). Walker (2003), for example, has argued that HBBs socio-economic contribution is the owner self-employment and the social capital he/she builds onto the local community. This type of approach suggests the need to reconsider the role of HBBs in local socio-economic development and how it can be accounted for. In this regard, Redmond & Walker (2010) aiming to understand whether HBBs make enough economic and social contribution that justify being supported and promoted by public funds, call for the need of a policy measure based on return on investment (ROI). Jain and Courvisanos (2013: 295) note, however, that the role of government has been restricted to broad initial start-ups, “with no programs or support for the type of innovative HBBs that need to be husbanded and encouraged” to grow outside the home.

Research have also examined the relationship between HBBs and socio-economic access and inclusion. Focusing on connectivity technology of women owned HBBs, Wynarczyk and Graham (2013: 467) argues that “contrary to the general assumption that women running HBBs are operating in crowded, marginal sectors”, women owned HBBs are serious ventures that add social and economic value to communities. As such, HBBs provide an effective medium for engaging women in the labour market and thus needs to be further promoted as a viable and serious employment opportunity. HBBs are also a viable solution to dual-role conflict experienced by some women who may otherwise be deterred from playing active roles in the local and regional economic development (Wynarczyk and Graham, 2013). Promoting inclusion further, Mason et al (2011) argues that HBBs can be the only economic activity alternative for disabled people and for those tied to the home for physical or social reasons. In line with mixed embeddedness theory, Anwar and Daniel (2017) investigated the role of online HBBs for ethnic entrepreneurs in the UK to overcome limited social, economic and institutional constraints. Likewise, Kantor (2003) established a positive link between HBBs in India and women empowerment in terms of control over enterprise income and decision making within the household. Furthermore, research on HBB have investigated issues of resilience, informality and poverty reduction (Gulyani and Talukdar, 2010; Lawanson, 2012) and the nature of domestic work (Chant, 2014). Finally, Sayers (2010) suggest that effective HBBs should not even be evaluated by their contribution to economic growth, as they can simply add value and meaning to lives.

Another macro level outcome relates to the importance of HBBs as a business incubator and a driver for business variety, as “they provide a low-cost entry option for trying out new ideas” (Van Gelderen, Sayers & Keen, 2008: 169). Sayers (2010) relies on human geography theory to introduce the notion of pathways as a concept to drive research on HBBs, besides highlighting the heterogeneity of HBBs and the integration of firms with their chosen

location. Finally, Reuschke and Houston (2016) and Reuschke (2016) found housing provide financial security and space for HBBs, but shapes flexibility, and concluded that urban and neighbourhood planning would help foster more flexible and dynamic use of neighborhoods and urban districts.

3.3.5. *Information and communication technologies*

HBBs scholars have found growing evidence confirming a positive relationship between the use of information and communication technologies and HBBs (Baines, 2002; Baines & Gelder, 2003; Daniel et al, 2014; Kapasi & Galloway, 2016; Phillips, 2002; Van Gelderen et al, 2008). Initially, Baines (2002) from a work-life perspective, suggested that the widespread use of information and communication technologies may be negative for individuals and households, with negative effect on the quality of working life. However, researchers have argued that even though the use technologies can be stressful, children can help parents in some technology related tasks and beneficiate from observing and even participating of the business (Baines & Gelder, 2003).

In addition, Anwar and Daniel (2017) uses mixed embeddedness theory to investigate how online HBBs offer ethnic entrepreneurs in the UK opportunities to overcome limited social, economic and institutional constraint and avoid traditional competitive and low margin sectors. Meanwhile, Clark and Daniel (2010) analyzing the phenomenon in New Zealand, found that HBBs adopted business processes and information technologies to achieve growth aspirations. Information and communication technologies also play an important role in rural HBBs, specifically in terms of capacity to overcome isolation and remoteness.

Regarding the use of information and communication technologies, Van Gelderen et al. (2008) developed the acronym *SMILES* that relates to *speed, multiple income, inexpressive,*

lean and smart to resemble online HBBs. As such, online HBBs are deemed to be natural incubators because they provide fertile ground for trial-and-error approaches, which is argued to increase business variety. Online HBBs owners are also associated with higher levels of independence and autonomy, which potentially leads to higher levels of innovation (Sayers, 2010; Van Gelderen et al., 2008). Finally, HBBs online enterprising are also associated with low levels of individual self-efficacy and experience, because the use of non-proprietary online platforms reduces pre-commitment importance (Daniel, Di Domenico & Sharma, 2014).

4. Agenda for future research

The previous sections reviewed the extant literature on the main research streams used to explore HBBs phenomenon. Our review established that authors have drawn on a myriad of perspectives, which mostly focus on family business and work-life literature, gender, economic and social development and the use information and communication technologies. A smaller body of research has also begun to incorporate new theoretical approaches to HBBs, such as effectuation, human geography and urban and neighbourhood planning literatures. We have also identified some studies that are mainly descriptive and a-theoretical.

In line with most entrepreneurship research, we have witnessed extensive research using sociodemographic and individual's characteristics, coupled with the entrepreneur's motivation, actions and behaviors, as antecedents of HBBs activity. At the firm level, research have focused on firm attributes, venture creation and performance. The micro-macro relationship between firm performance and contribution to society is normally acknowledged through the generation of wealth for the HBBs owners and employment for local community. Research have also associated HBBs activity with socio-economic inclusion, empowerment, business variety, economic growth and societal prosperity.

Our review identified a dearth of research examining the effects of individual's characteristics on firm performance. The review also identified that some research has been mainly exploratory and descriptive. This is surprising, given that policy and government have been widely incorporated HBBs in their start up support programs. Certainly, this research has been important to characterize the phenomenon and challenge main assumptions about HBBs, but further theoretically grounded investigation is needed. Another limitation identified by the review is a lack of empirical investigation on HBBs emergence process and as to whether and how HBBs change in time and the factors that influence such changes. The review also identified that research has predominantly focused on developed economies and the positive outcomes of HBB with limited attention placed on the global south, HBBs failure and on situations where socio-economic value is destroyed.

Based on our review of the literature we synthesized findings from previous research and drawn on the gaps in the literature identified to develop an agenda for future research on HBBs in the following sections.

4.1 Drivers of HBBs performance

Although, as highlighted earlier, prior work on antecedents of HBBs performance have identified a variety of drivers of firm performance, the use of alternative variables may help aid our understanding as to how and why different individual and firm level factors lead to differences in HBBs performance in specific contexts.

First, considering individual level variables, prior research has drawn upon sociodemographic and motivation to start up as antecedents to HBBs performance. However, researchers may consider drawing upon more theoretically grounded concepts. In particular, entrepreneurship literature has highlighted the positive influence of perceptual variables such

as opportunity alertness (Kirzner, 1973, 1979), self-efficacy (Bandura, 1997, 2006), fear of failure (Cacciotti, Hayton, Mitchell, & Giazitzoglu, 2016) and entrepreneurial role models (Baron, 2000) on performance. Research could address how perceptual variables influence entrepreneurial intention, behavior and ultimately firm performance (Arenius & Minniti, 2005; De Clerq, Lim & Ohl, 2013). Future research should consider using more theoretically grounded variables to enhance insights and provide a better assessment on perceived favourability of HBBs opportunities and the individual-opportunity nexus (Shane & Venkataraman, 2000).

Second, future research could integrate the analysis of firm level and individual level characteristics, because the proximity of individual and the firm suggest they are particularly intertwined in the HBBs context. Current research has investigated managerial practices, external factors and the use of information and communication technologies as antecedents to firm performance. We call the need of research to incorporate factors associated with innovation, specific types of internet use, formal registration and other external enablers to help us identify and enhance our understanding on different types of HBBs.

4.2 Alternative contexts and negative effects

We call on researchers to consider broader contexts to examine how HBBs differ depending on the available region or country level resources and institutional context. Such perspective emphasizes the moderating role of institutional context on HBBs emergence and performance (Autio & Acs, 2010; Bowen & De Clerq, 2008), with important implication to contextualize HBBs activity in different regions and countries. Research indicates, for example, that HBBs activity in the global south is an alternative for individuals to have an economic activity and is positively influences women empowerment (Kantor, 2003).

Researchers should also take a closer look at negative effects of HBBs such as the case of failure on the entrepreneur (Shepherd, 2003). We also call for researches to consider whether and how there have been waste or destruction of resources, and what kind of influence does it have on local communities. Understanding the negative effects of HBBs activity for the individual, the firm and society will assist policy makers in determining where to best target HBBs start up support and government funds.

4.3 Longitudinal perspective on HBBs

To understand how HBBs emerge and change throughout the entrepreneurial journey, researchers should seek to ascertain how individual, firm and macro level factors interact, and identify factors that cause such changes. Researches could track HBBs entrepreneurs and resources, perceptions and firm performance throughout time and investigate relationship between them. For example, researchers might investigate whether individual perceptions vary in response to negative experiences and experience accumulation. Future research could also investigate how the use of resources for personal means or the redeployment of resources in the firm could result in higher levels of performance.

Future research could also address how macro level changes influence HBBs development paths and the individual's perceptions. For example, researchers might examine the effect of government programs on individuals' intentions to become HBBs. As the same time, longitudinal assessments could provide feedback information about the characteristics of individuals and firms most likely to succeed and thus inform further policy. Therefore, future research should do more to delineate interaction effects between the individual, the firm and the context over time.

4.4 Typologies of HBBs

To determine whether and how individual, firm and macro level factors influence and are influenced by HBBs, it is essential to characterize the sample under investigation. Given that previous research has used a variety of narrowed focused samples, such as women-owned HBBs (e.g. Green & Karanasios, 2010), ethnic groups (Anwar & Daniel, 2017), online businesses (e.g. Daniel et al, 2014) or high innovative HBBs (Phillips, 2002), findings can often be contradictory. We call on researchers to consider the use of set-theoretic methods to explore typologies of HBBs in different contexts.

In particular, researchers could use qualitative comparative analysis (QCA) using multilevel factors to identify combinations of conditions that lead to an outcomes of interest, such as firm performance or international presence (Fiss, 2011; Ragin, 2000). By exploring set relations using QCA, researchers could elaborate and test theory based on causal statements regarding whether conditions are necessary and/or sufficient for the outcome to occur (Schneider & Wagemann, 2012). For example, researchers could explore combinations of multilevel conditions that jointly produce an outcome of theoretical and practical interest for HBBs and general entrepreneurship literature (Ragin, 2008). Researches could also develop HBBs typologies based on multilevel conditions in specific contexts to shed light onto the interplay of conditions and rule out constraints of common multilevel analysis.

In terms of research design, we identified that prior research typically relied on cross-sectional data to examine the link between HBBs and individual, firm and macro levels factors that influence and are influenced by them. Nevertheless, such a research design does not allow us to infer causality or rule out common method bias. We therefore call on researchers to develop longitudinal research designs in order to provide stronger inferences of causality.

5. Conclusion

The present study conducted a systematic review of prior research on home-based businesses phenomenon. By doing so, we identified the main perspectives used to investigate HBBs empirical and theoretical implications, as well as shed light into the contributions of the four main streams of research associated with HBBs: *family business and work-life balance, gender, HBBs outcomes and socio-economic development, and information and communication technologies*. In reviewing the literature, key theoretical gaps were identified, and a future research agenda was presented which highlights opportunities for empirical and theoretical advancement of the field.

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Overcoming Invisibility: The Acknowledgment of Home-Based Business in Brazil

Abstract

Our study aims at understanding the characteristics of home-based business (HBB) in Brazil. Entrepreneurship relates to social and economic development and HBBs comprises a significant part of overall entrepreneurial activity in many countries. As the clear separation between spaces of home and work vanishes, HBBs challenges individuals, organizations and society. To overcome the invisibility of HBBs to official statistics, the research uses a large survey of formal and informal entrepreneurs, the Global Entrepreneurship Monitor (GEM, 2015) report data, to obtain a comprehensive profile of the HBB phenomenon.

We used a descriptive exploratory analysis of the data and simple estimation of the economic importance of HBBs activity. Our research builds on GEM analytical method to obtain specific comparative information about HBBs in Brazil. Results indicate that 37.6% of Brazilian entrepreneurs are home-based, comprising 13% of the adult population. In 2014, HBB generated approximately 224 billion Brazilian currency of revenue, which represent 4.5% of the year Gross Domestic Product (GDP). In Brazil, HBBs comprise over 17 million self-employed individuals and is responsible for almost 25 thousand added jobs. Results confirm both positive social impact and economic significance, in the form of self-employed individuals, jobs and contribution to GDP. Comparisons between HBBs and non-HBBs indicate similar rates of demographic characteristics, psychological factors and motivational aspects, but a significant a gender bias toward HBBs.

Our study contributes to the HBB literature by confirming the significance of HBBs for socio-economic development and enabling a comprehensive profile of home-based entrepreneurs and their firms. Finally, the study sheds light on the HBBs phenomenon in Brazil, making it visible to stakeholders and informing the development of adequate evidence-based public policies toward HBBs development.

Keywords: Entrepreneurship, home-based business, Global Entrepreneurship Monitor (GEM), gender, small business.

1 Introduction

Entrepreneurship is vital for economic and social development due to the potential to generate wealth and jobs (Haltiwanger et al., 2009; Rideout & Gray, 2013; Wennekers & Thurik, 1999). Home-based businesses (HBBs) are important because they are the majority of businesses in many countries (Mason, Carter, & Tagg, 2011; Vorley & Rodgers, 2014) and one of the main trends of the post-industrial era (Baines, 2002; Berke, 2003; Felstead et al., 2005). In Australia, Scotland, United States and United Kingdom, HBBs represent 50% to 60% of all businesses, with significant implications for the private sector employment and turnover (Mason et al, 2011; Mason and Reuschke, 2015; Walker et al., 2004).

Moreover, HBBs are a relevant form of business incubator and a driver for business variety in the cities (Sayers, 2010; Van Gelderen et al., 2008; Mason and Reuschke, 2015). HBBs also positively influence economic, social and environmental sustainability in rural areas (Newbery & Bosworth, 2010; Clark and Douglas, 2014; Mason et al, 2011; Kapasi & Galloway, 2016). Many socio-economic factors contribute to the growth of HBBs activity, such as new organizational and labor arrangements, shifts in the market structure, advances in information and communication technologies and positive social and cultural perceptions about entrepreneurship.

Ranging from low-value lifestyle, survival or social oriented activities (Heeks and Arun, 2011; Lawanson, 2012; Frankish et al., 2014), to high-value, knowledge-based service provision or high-growth technology start-ups (Mason, 2009-2010; Mason and Reuschke, 2015; Westlund et al., 2014), HBB is diverse and challenges individuals, organizations and society (Bögenhold et al. 2014; Kitching and Smallbone 2012). As the clear separation between spaces of home and work vanishes, policy makers and governments in many countries have started to

acknowledge the importance of better understanding HBBs phenomenon (Baines, 2002; Felstead et al., 2005; Mason et al, 2011; Mason and Reuschke, 2015). However, many governments still lack adequate understanding of HBBs, which leads to negative social stereotyping and the absence of adequate policy recommendations (Dwelly et al, 2006; Taylor, 2008; Enterprise Nation, 2008; 2014; Mason and Reuschke, 2015). In this context, the main challenge for scholars is understanding HBBs characteristics and measure their economic and social significance, so that evidence-based knowledge can foster more consistent approaches for supporting HBBs entrepreneurs and inform public policy.

Our research contributes to HBBs literature by investigating the phenomenon of formal and informal HBBs entrepreneurs in an efficiency-driven economy. To achieve this goal, the research addresses three fundamental questions. First, the study unveils the proportion of businesses operating from and at home. Second, it describes and contrasts characteristics of HBBs with non-HBBs in a statistically representative sample. Third, it estimates the social economic significance of HBBs in the country. The findings allow comparisons with prior HBBs studies and the identification of differences and similarities of HBBs and non-HBBs in Brazil.

Our study starts with an overview of the HBBs phenomenon and a discussion about the existing HBBs literature. Next, the paper explores the Brazilian context and the importance of understanding the phenomenon in this continental efficiency-driven economy. Thereafter, the study presents the methodology used for the analysis of the HBB phenomenon. Finally, our research presents the findings and conclusions highlighting the contributions of the research for theory and practice.

2 Literature Review

Entrepreneurship is essential for socio-economic development and HBBs comprise a significant part of overall entrepreneurial activity. Prior research show that in developed economies such as Australia, Scotland, United States and United Kingdom, HBBs represent between 50% and 60% of all businesses (Mason et al, 2011; Walker et al., 2004). For example, in Scotland HBBs account for 56% of all businesses, 17% of all private sector employment and almost 10% of private sector turnover (Mason and Reuschke, 2015). In developing economies, such as Brazil, HBBs are also expected to be a relevant part of overall businesses, but the absence of official statistics makes it practically invisible for researchers.

Due to the absence of statistical evidences, myths and stereotypes surround HBBs. The first argues HBBs are low-value, survival oriented or life-style businesses, normally managed by women to fit household responsibilities and childcare. In this view, HBBs are associated with low skilled work, erratic wages, uncertain employment and low personal income. The alternative view focus on the economic, social and environmental benefits of HBBs. Specialized and qualified individuals that work on high-value activities with flexible work loads that can generate high personal income. As such, HBBs strengthen local economy and enhance work-life balance thus representing the future of work. (Felstead et al., 2005; Mason et al., 2011).

2.1 Social, economic and cultural factors influencing HBBs

Social, economic and cultural changes in society have driven the growth of HBBs in various ways (Haltiwanger, Jarmin, & Miranda, 2009; Mason et al., 2011; Mason and Reuschke, 2015; Rideout & Gray, 2013; Wennekers & Thurik, 1999; Van Stel and Storey, 2004). First, the dissipation of the industrial labor economy and the emergence of a new economic model based on service provision led to new organizational arrangements (Baines, 2002; Felstead et al, 2005). The traditional contract established between business and labor in

the form of traditional and standardized arrangements no longer sustains. Nowadays, fewer large companies offer life-long, steady pay increase with pension fund, type of contract to employees. In addition, the emergence of a new model of work, based on temporary contracts and service provision, has led to new organizational arrangements (Baines, 2002; Felstead et al, 2005). Companies redesigning, restructuring, downsizing, automation and the increased use of project-based working (Grabher, 2002; Ekismyth, 2012; Sydow and Staber, 2002), independent contractors (Mason et al, 2011), free agents (Pink, 2002) and outsourcing, transfer to the individual the responsibility to allocate resources efficiently and transition to other support structures beyond corporate welfare (Mason et al., 2011). Although full-time traditional work arrangements are not going to disappear, organizations access to labor and production systems have changed.

Second, shifts in the market structure favor HBBs by reducing the costs of doing business and the importance of size and economies of scale. For example, nowadays HBBs can access cutting-edge technology through plug-and-play open source hardware. Moreover, advances in production technology encourages small-scale manufacturing and the maker movement allows for rapid and cheap prototyping. These market trends lower entry barriers for micro, small and medium business in many sectors and favors niche strategies (Institute for the Future/Intuit, 2008). As such, HBBs can offer products and services for profitable niches. Niche markets normally require deep understanding of the customer and are hard to capture by big companies (Institute for the Future/Intuit, 2008).

Third, new information and communication technologies, affordable hardware and the widespread use of internet allowed HBBs to effectively serve small and geographically dispersed niches. Moreover, the emergence of different online platforms, such as Amazon (retail), PayPal (payment), Airbnb (hospitality), Upwork (services) and Uber (transport) allowed the digitalization of work requirements and a better integration between workers

capability and time availability. Those platforms introduce new ways in which organizations can channel and apply talent, expertise, skills, capabilities and knowledge into the firm.

Fourth, social and cultural trends driven by demographic change also support future growth of HBB. For example, aging population favors the emergence of semi-retired people running HBBs (Mason et al., 2011; Vorley and Rodgers, 2014). Generation Y individuals are expected to start their own businesses due to their technology embeddedness and entrepreneurial mindset (Mason et al., 2011). Accordingly, increased importance of work-life balance, independence, meaning and self-satisfaction is also expected to positively influence HBBs growth (Mason et al., 2011; Vorley and Rodgers, 2014).

Finally, from a social and cultural perspective, self-employment and entrepreneurship gained social acceptance in the last decades. In this regard, GEM Brazil reports that 34.5% of the adult population are involved in entrepreneurial activity, represented by the total entrepreneurial activity (TEA) of the country (GEM, 2015). Besides, 45.5% of adult Brazilians dream about *owning a business*, against 14.5% that dream about *having a corporate career* (GEM, 2015). Also, television programs such as *Shark Tank* and *Dragons Dean* brought entrepreneurship to mainstream and cases of successful entrepreneurs can be found on the news and on television in a daily basis.

2.2 HBBs characteristics and related themes

As the clear separation between home and work vanishes, policy makers and governments in many countries started to acknowledge the importance of HBBs (Baines, 2002; Felstead et al., 2005; Mason et al, 2011; Mason and Reuschke, 2015). However, due to the lack of official statistics, the literature about HBBs is scarce and most governments still lack adequate understanding of HBB phenomenon (Dwelly et al, 2006; Taylor, 2008; Mason and

Reuschke, 2015). Nevertheless, prior studies claim HBBs are legitimate businesses and contribute significantly to social and economic development and thus should be supported and developed by public policies (Walker, 2003; Walker and Brown, 2004, Sayers, 2005, Mason et al, 2011; Clark and Douglas, 2011; 2014).

2.2.1 Gender, income and work-life balance

Initial research on HBBs characteristics focused on gender (Holmes, Smith & Caine, 1997; Jurik, 1998; Walker, 2003; Loscocco & Smith-Hunter, 2004; Walker and Brown, 2004; Walker, Wang & Redmond, 2008) and work-life balance (Baines and Gelder, 2003; Beach, 1993; Berke, 2003; Fitzgerald and Winter, 2001; Owen and Winter, 1991; Walker and Brown, 2004; Monin & Sayers, 2005).

Research on gender suggest that HBBs allow balance between family and work activities, which help women overcome limitations of traditional work arrangements (Loscocco and Smith-Hunter, 2004; Walker and Webster, 2004; Wynarczyk and Graham, 2013). Moreover, women are more likely to bear family-related responsibilities and childcare due to social and cultural factors (Homes et al., 1997; Rouse & Kitching, 2006; Kirkwood & Toothill, 2008; Walker & Webster, 2004). In addition, women are generally more risk averse, tend to find it more difficult to access financial capital (Carter et al., 2007; Kirkwood, 2009; Loscocco and Smith-Hunter, 2004) and may choose to become an HBB owner due to lower levels of entrepreneurial resources (Thompson et al, 2009). As such, those studies suggest circumstances shape the decision of women to become HBBs entrepreneurs, which is associated with low levels of financial resources and a reduced personal and psychological risk (Daniel et al, 2014; Thompson et al, 2009). In turn, other stream of research supports the view that women HBBs

are a legitimate form of business with serious growth intentions (Breen, 2010; Breen & Karanasios, 2010).

Work-life balance literature have argued that children can benefit from a parent operating an HBB (Beach, 1993; Baines & Gelder, 2003) and women running HBBs experience less work-family conflicts than those running businesses in a different location (Loscocco and Smith-Hunter, 2004). On the other hand, the absence of organizational resources and a regular paycheck tend to increase social isolation, stress and limit the access to training and skill development (Beach, 1993; Baines, 2002; Stanworth & Stanworth, 1995). Economic sustainability may also not materialize (Evans et al. 2004; Loscocco and Smith-Hunter, 2004; Walker et al. 2008; Wynarczyk et al., 2008), because competing work and family demands impose HBBs to operate part time, increasing marginality (Baines, 2002; Berke, 2003; Thompson, 2009). Furthermore, operating an HBB can be the only alternative for embracing an economic activity for disabled people and for those tied to the home for physical or social reasons (Mason et al, 2011). Finally, some scholars suggest that many mediating factors influence the impacts of HBB on family life, such as the nature of the business, having an appropriate space to work, the amount of time devoted to the business and household context (Owen & Winter, 1991; Beach, 1993; Mirchandani, 1999; Baines & Gelder, 2003).

2.2.2 Entrepreneurial perceptions

Prior research has argued that online HBBs are associated with low levels of entrepreneurial self-efficacy and experience. Because online HBBs can use non-proprietary online platforms to sell products and services, they are able to minimize pre-commitment importance and set affordable loss at lower levels than onsite businesses (Daniel et al, 2014). The influence of information and communication technologies on HBBs entrepreneurs

perceptions and opportunity exploitation has also been investigated by other previous studies (Phillips, 2002; Van Gelderen et al, 2008; Daniel et al, 2014; Kapasi & Galloway, 2016). In this regard, Van Gelderen et al. (2008) developed the acronym *SMILES* that relates to *speed, multiple income, inexpressive, lean and smart*, to resemble online HBBs, which is argued to increase business variety. For those reasons, HBBs are natural incubators and provide a low-risk and low-cost alternative for trial-and-error approaches, with over one third moving out of home after testing and validating the business concept (Mason and Reuschke, 2015). Finally, HBBs owners also associated with higher level of independence and autonomy, which potentially leads to higher levels of creativity and business innovation (Sayers, 2010; Van Gelderen et al., 2008).

2.3 Geographic perspective

From a geographic perspective, HBBs research focus on differences between urban and rural HBBs and their effect on the community and economic activity (Rowe, Raynes and Stafford, 1999). These researches have stressed that HBBs help sustain rural households, which often depend on multiple sources of income (Fuller, 1990; Ellis, 2000). HBBs also reduce the impact of automatized industrial agriculture on local jobs by providing employment alternatives for skilled professionals living in rural areas (Kapasi & Galloway, 2014). Additionally, rural HBBs normally make use of technology to overcome isolation and can increase the sense of security in local communities. For example, a recent study showed that neighbors would normally feel safer knowing that someone is around during daytime (Mason & Reuschke, 2015). Rural HBBs activity is also argued to enliven neighborhoods and communities, besides adding to the local economy and contributing to sustain households (Clark and Douglas, 2014; Mason, 2011; Mason et al, 2011; Kapasi and Galloway, 2016; Sayers, 2010). Because HBBs normally lack organizational resources, HBBs owners are more likely to interact with the local

community to shop, eat, work and make use of a diverse set of other business services (Newbery & Bosworth, 2010).

In the city context, Sayers (2009-2010) suggest HBBs increase business diversity, which ultimately affect overall quality of businesses and thus the economic importance of HBBs activity. Moreover, the study stress that urban HBBs have distinct characteristics and should be conceptualized based on the relationship to other places of business conduct, including the internet, third places such as cafés, and business precincts. Finally, HBBs may also reduce the necessity of everyday commuting and does not require new buildings or commercial premises that are deemed environmentally inefficient (Mason et al, 2011).

2.4 Brazilian Context

In Brazil, the absence of official statistics regarding HBBs activity imposes additional challenges to understand HBBs characteristics and estimate economic significance of HBBs phenomenon. To overcome those constraints, this study uses the survey data gathered for the GEM Brazil (GEM, 2015). This procedure resembles previous studies focused on HBBs in other countries (Monin & Sayres, 2005; Douglas, 2005). It is important to highlight that GEM data focus on individual entrepreneur and captures formal as well as informal economic activity.

To investigate home-based employers in Brazil, a similar phenomenon to HBBs, Enoque and Borges (2014) used statistics from the National Household Survey (PNAD), gathered by the Brazilian Institute of Geography and Statistics (IBGE). Home-based employers were defined in the study as those individuals, between 15 and 65 years of age, that live in urban areas and develop productive activities within their home and employ other people (Enoque and Borges, 2014). The research compares home-based employers with non-home-based employers and home-workers. Main results indicated that 52.04% of the Brazilian urban home-

based employers are men, 60.22% are white and 36.49% are non-within city migrants (were born in the city they are currently living in). Home-based employers had an average of 9.49 years of study, 25.15 years of age and approximately 5.000 dollars annual turnover (Enoque and Borges, 2014). However, methodological constraints and specific definitions used by PNAD only gives a partial understanding of the HBBs phenomenon thus requiring further investigation.

But as many social phenomena, understanding HBBs complexity should start by avoiding oversimplified views. This because prior research has highlighted HBBs are heterogeneous and range from low to high value activities. Nevertheless, HBBs are invisible to official statistics and secondary data must be used to shed light on the characteristics and importance of HBBs. So, to better understand the phenomenon, this research used a large survey of formal and informal entrepreneurs, the GEM Brazil data, to explore HBBs characteristics and estimate the economic significance of HBBs. Results will provide evidence-based knowledge to guide theoretical advances and policy recommendations.

3 Methodology

To address our research question, we used a descriptive exploratory analysis of the data and simple estimation of the economic importance of HBBs activity. Our research builds on GEM analytical method to obtain descriptive comparative information about HBBs in Brazil. A more comprehensive description of the GEM methodology can be found in Reynolds et al. (2005), while Grecco et al. (2014) provides a detailed description of GEM Brazil data collection and processing.

3.1. Data

In our study we used data from the GEM Brazil survey (GEM, 2015). The dataset consists on responses from 10.000 individuals aging between 18 and 64 years. The GEM survey uses a broad definition of entrepreneurship that focus on the entrepreneur rather than on the businesses, which allows researchers to visualize individuals and firms characteristics. We used data on the entrepreneur's characteristics and perceptions in both formal and informal HBBs and non-HBBs entrepreneurial activity.

Given the lack of data about HBBs in Brazil, this study aims at identifying the characteristics of those enterprises and analyze their profile. GEM data allow facing several key questions about HBBs activity. Socio-demographic characteristics of HBBs owners in terms of gender, age, education and income will give a clear perspective on the individuals behind HBBs. Motivations behind their entrepreneurial endeavor (opportunity or necessity driven) and capabilities will give a better understanding on differences between HBBs and non-HBBs. Furthermore, the study will investigate the profile and significance of HBBs in terms of sector, employees, age of the business, annual revenue, formal registration, innovation, international sales, growth aspirations and the use of internet. The study analyzes the data contrasting HBBs with non-HBB, to understand how HBBs differ from the traditional onsite businesses in Brazil.

3.2 Operational definition

The defining characteristic of an HBB is that it operates in a residential property rather than a commercial premise (Dwelly et al, 2015; Felstead, et al, 2005; Wynarczyk and Graham's, 2013). A business is home-based whenever it sells products or provide services by a self-employed, self-managed individual, with or without employees, operating from or at home (Mason et al, 2011). It means that the production process or service provision takes place in the home, or the residential premise serves as an administrative back office (Clark and Douglas,

2011; Walker and Webster, 2004). In general, HBBs owners use the home residence for a core business activity to generate income (Clark and Douglas, 2014).

For the objectives of this study, the operational definition of HBB will not focus only on legitimate ongoing businesses (Walker and Brown, 2004; Sayers, 2005), but also in informal businesses as GEM data shows that over 80% of entrepreneurial activity is informal, demanding for a broader definition scope. The definition includes commercial homes (Lynch, 2005), professional practices (Clark and Douglas, 2010), farm-based businesses (Mason et al, 2011), household service suppliers (Felstead, 2005) and online home-businesses (Daniel et al., 2014). It excludes independent contractors (Monin and Sayers, 2005; Mason et al, 2011), project-based working (Grabher, 2002; Ekismyth, 2012; Sydow and Staber, 2002), free agents (Pink, 2002) and outsourcing.

Our study defines HBBs based on self-reported data of respondents who answered positively to the question whether the entrepreneur would mainly work from home for her/his business. The study allows a comprehensive profile of HBB in Brazil and contributes to the research agenda as the first attempt to understand the HBB phenomenon of formal and informal entrepreneurs in an efficiency-driven economy of a continental country. Data identifies formal and informal entrepreneurial activity and allows a comparison between the characteristics of HBB and non-HBB in Brazil regarding socio-demographics characteristics (i.e., gender, age, etc.), entrepreneurial perceptions (i.e., perceived capabilities, perceived opportunities, fear of failure) and motives for starting a business (i.e., necessity vs. opportunity).

Data analysis include descriptive statistics and simple estimation of economic significance of HBBs activity in the country. Limitations include issues associated with limitations of GEM data collection process and data processing. Furthermore, there are limitations associated with the use of data not especially collected for the understanding of

HBBs phenomenon. The data allow a comprehensive description of HBBs in Brazil, but lack the existence of tailored questions related to the subject under investigation

4 Results

The research confirms that HBBs are a significant proportion of overall businesses and a relevant form of entrepreneurial activity in Brazil. Table 1 shows that home-based entrepreneurs comprise 13% of the adult population, which stand for 37.6% of overall entrepreneurs surveyed by GEM Brazil (GEM, 2015). This proportion represents approximately 17 million entrepreneurs running businesses that sells products or provide services as HBBs.

Insert Table 1 Here

The survey also confirms that the use of the home residence or residential premise as the location for core business activities (Clark and Douglas, 2014) is economically significant, thus generating approximately 224 billion Brazilian currency of revenue and 4.5% of the Gross Domestic Product (GDP). Besides, HBB is responsible for 17 million self-employed individuals and almost 25 thousand added jobs, which highlights the social impact generated by HBB. GEM framework recognizes all kinds of entrepreneurial activity as being beneficial, from highly innovative and growth-oriented entrepreneurship, to local, me-too types of business that do not employ others. Those businesses add value by allowing people to create their own jobs and serving community by meeting demand for needed products and services.

HBB vs non-HBB comparative analysis suggests that HBB and non-HBB are similar considering individual attributes, except for gender. Demographic characteristics (gender, age, geographic location, level of income), psychological factors (perceived capabilities, perceived opportunities, fear of failure) and motivational aspects for starting a business (necessity-based vs. opportunity-based venturing) give a comprehensive profile of HBB in Brazil.

Table 2 features the distribution of HBB and non-HBB entrepreneurs according to sociodemographic characteristics. The data indicate similar age distribution between HBB and non-HBB, with slightly higher proportions of HBB among entrepreneurs aging 45-54 years (24%) and 55-64 years (14.2%). Moreover, HBB appear more frequently in the 1-3 minimum wages range of family income (63.3%) and in higher proportion than non-HBB (36%) among entrepreneurs with complete high school and incomplete graduation (42.3%).

Differences are subtle, notwithstanding gender. While women are responsible for running 68.3% of HBB businesses in Brazil, men represent only 31.7% of HBB entrepreneurs. When comparing to non-HBB, men operates up to 64% of businesses, while woman correspond for only 24% of entrepreneurs. The data indicate a positive correlation between HBB and women entrepreneurship.

Psychological factors, such as knowing an entrepreneur, perceived opportunities and fear of failure, also indicate no significant differences between HBB and non-HBB. Only perceived capabilities for starting a business presents differences between HBB (75.1%) and non-HBB (70.6%), which may relate to the fact that most HBB have no employees and demand fewer resources than non-HBB ventures to startup. Therefore, HBB entrepreneurs might consider themselves more capable of starting up then non-HBB entrepreneurs.

Insert Table 2 Here

In addition, Table 3 displays the percentage of Brazilian entrepreneurs who pursued a new business creation based on a perceived opportunity in 2014. Despite the non-HBB rate (7.5%) be higher than HBB rate (4.63%), again, the proportion of opportunity-driven HBB and non-HBB entrepreneurs show no significant difference.

Insert Table 3 Here

5 Discussion

The research confirms that HBB represents a significant proportion of overall entrepreneurs in Brazil, corresponding to 37.6% of GEM surveyed adults. It also contributes to social and economic development, thus associated with 4.4% of the Gross Domestic Product (GDP) of Brazil in 2014 and 17 million self-employed individuals and almost 25 thousand added jobs. Comparison with other studies in Australia, New Zealand, Scotland, United States and United Kingdom (Clark & Douglas, 2014; Mason et al, 2011; Mason and Reuschke, 2015; Walker et al., 2004) evidence lower levels of significance than in developed economies, which is an interesting path for further investigation.

Besides, HBBs in Brazil a gendered phenomenon. Albeit gender differences, all other demographic characteristics, psychological factors and motivational aspects for starting a

business are very similar, with few exceptions. The exceptions regard higher proportions of HBB among entrepreneurs in the 45-54 years (24%) and 55-64 years (14.2%) range, besides HBB appearing more frequently in the 1-3 minimum wages range of family income (63.3%) and in higher proportion than non-HBB (36%) among entrepreneurs with complete high school and incomplete graduation (42.3%).

The data suggests that HBB can be an alternative for semi-retired individuals that decide to run businesses to maintain income (Mason et al., 2011; Vorley and Rodgers, 2014). Data also suggests that HBB entrepreneurs receive lower rates of pay and is associated with the expected trade-off related to higher flexibility, work-life balance and family demands against financial return (Felstead et al, 2001; Mason et al, 2011). Finally, 42.3% of HBB entrepreneurs have completed high school and incomplete graduation, against only 36% of non-HBB entrepreneurs, which suggest higher levels of education among HBB entrepreneurs.

The data show that differences are subtle, notwithstanding gender. Most men (64%) are typically non-HBB entrepreneurs, while women (68.3%) are typically HBB entrepreneurs. The literature has largely addressed gender differences within HBB literature, which suggests that women bear childcare responsibilities more than men and are, generally, more prone to work at home. The study acknowledges the differences between men and women and invites for further investigation on the reasons why it happens with such a remarkable difference in Brazil.

6. Conclusion

Our study used descriptive exploratory analysis and simple estimation to assess the economic importance of HBBs activity and perform a comparative analysis between HBBs and non-HBBs based on demographics and motivational factors. First, results indicate 37.6% of

Brazilian entrepreneurs were home-based, comprising 13% of the adult population. Over 17 million of HBBs entrepreneurs generated 4.5% of the Gross Domestic Product (GDP) and 25 thousand jobs beyond their own, which confirmed both social and economic contribution of HBBs in Brazil. Finally, the comparative analysis between HBBs and non-HBBs indicates similar rates of demographic characteristics and motivational factors, but a significant difference on gender.

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Table 1. General rate and estimate of home-based business entrepreneurs - Brazil - 2014

Home B Business 2014					
Name	Count	Sample	Rate ¹	Population	Estimate
HBB	1303	9997	13,0	130.723.018	17.037.895
NHBB	2163	9997	21,6	130.723.018	28.278.590

Source: Developed by the authors using GEM Brasil 2014 data.

¹ Percentage of population aged 18-64 years.

Table 2. Distribution of HBB and non-HBB entrepreneurs according to sociodemographic characteristics - Brazil - 2016

Entrepreneur characteristics	HBB				NHBB			
	Count	Sample	Rate	Proportion	Count	Sample	Rate	Proportion
Gender								
Male	413	4941	8,4	31,7	1365	4941	27,6	64,0
Female	891	5057	17,6	68,3	768	5057	15,2	36,0
Age								
18-24 years	147	1962	7,5	11,3	246	1962	12,6	11,5
25-34 years	339	2663	12,7	26,0	592	2663	22,3	27,8
35-44 years	319	2233	14,3	24,5	602	2233	27,0	28,2
45-54 years	313	1841	17,0	24,0	452	1841	24,6	21,2
55-64 years	185	1299	14,3	14,2	240	1299	18,5	11,3
Income								
1 minimum wage	96	747	12,8	7,9	113	747	15,2	5,8
2 minimum wages	320	2678	11,9	26,6	493	2678	18,4	25,4
3 minimum wages	346	2470	14,0	28,7	463	2470	18,7	23,9
More than 3 and up to 6 minimum wages	346	2456	14,1	28,8	645	2456	26,3	33,3
More than 6 minimum wages	96	710	13,5	8,0	223	710	31,4	11,5
Level of education								
Incomplete elementary education	356	2598	13,7	27,3	667	2598	25,7	31,3
Complete elementary and incomplete high school	297	2417	12,3	22,8	531	2417	22,0	24,9
Complete high school and incomplete graduation	552	4155	13,3	42,3	767	4155	18,5	36,0
Graduate and above	99	821	12,0	7,6	168	821	20,5	7,9

Source: Developed by the authors using GEM Brasil 2014 data.

Table 3. Percentage of TEA based on Opportunity Motivations - Brazil - 2014

Opportunity 2014					
Name	Cont	Sample	Rate ¹	TEA	Proportion
HBB	463	9997	4,63	661	70
NHBB	750	9997	7,50	1055	71

Source: Developed by the authors using GEM Brasil 2014 data.

¹ Percentage of entrepreneurs in each class.

**What it Takes to Be a Successful Home-Based Business? A Configurational Approach
Using csQCA**

Abstract

What it takes to entrepreneurs running home-based businesses (HBBs) successfully achieve high levels of performance? Home-based businesses are the majority of businesses in many countries and a growing trend worldwide. If an entrepreneur decides to create an HBB with misleading perceptions about entrepreneurship, does not gather enough individual resources and combine them into specific firm attributes, he/she is unlikely to achieve high performance.

Prior research addressing the challenge of understanding HBBs suggests that the phenomenon is diverse and can range from very low to high value generating activities. It is also known that perceptual variables, such as the entrepreneur opportunity alertness, self-efficacy, fear of failure and the existence of entrepreneurial role models play a fundamental role on entrepreneurial behavior. Clouding matters further, how different individual resources and firm attributes are combined into high performing HBBs remains unclear. This means that the path to successful HBBs likely demonstrates causal complexity.

We adopt a configurational approach to explore configurations of high and low revenue generating HBBs. We consider how the entrepreneur's level of education, personal income, gender and perceptions about entrepreneurship, combined with the firm's innovation, use of internet and formal registration, is associated with a high revenue threshold. Rather than assuming a singular combination of conditions that lead to the outcome, we investigated how different combinations of conditions lead to both high and low performance HBBs.

We extend current theory on entrepreneurial resources and perceptions, by investigating sufficiency causal relationships based on causal complexity. The results allow us to elaborate theory about core and peripheral conditions associated with high performance and low performance HBBs. First, our findings contribute to the HBBs literature by empirically

identifying key conditions that lead to the outcome of interest. We further contribute to the entrepreneurial resources and perceptions literature, by highlighting the role of gender (male) and secondary role of positive entrepreneurial perceptions for high performance HBBs. We demonstrate that high performance HBBs are mostly managed by men with high personal income. We also analyzed the relevance, or the lack of, innovation, use of internet and registration for both high and low performance HBBs. Accordingly, we show that low performance HBB are informal businesses that mainly do not use the internet to sell ordinary (non-innovative) products and services.

Keywords: Home-based business; Entrepreneurial resources; Entrepreneurial perception; Qualitative comparative analysis (QCA).

1 Introduction

Home-based businesses (HBBs) represent the majority of businesses worldwide. In developed economies, such as Australia, Scotland, United States and United Kingdom, HBBs comprise from 50% to 60% of businesses (Mason & Reuschke, 2015; Mason, Carter, & Tagg, 2011). In developing economies, such as Brazil, they are 37.6% of all entrepreneurs and 13% of the adult population. HBB activity represent 4.5% of the Gross Domestic Product (GDP) and comprise over 17 million individuals (Salusse & Andreassi, 2017). As a pervasive entrepreneurial activity, HBB venturing is vital for socio-economic development and positively associated with the creation of wealth and jobs (Haltiwanger et al., 2009; Rideout & Gray, 2013; Wennekers & Thurik, 1999).

HBBs are also one of the main trends of the post-industrial era (Felstead et al., 2001; Mason, Carter and Tagg, 2011; Vorley and Rodgers, 2014). The dissipation of the industrial labor-intensive economy and the rise of the service economy changed the way work is organized. Companies redesigning, restructuring, downsizing, automation and the increased use of project-based working (Grabher, 2002; Ekismyth, 2012; Sydow and Staber, 2002), independent contractors (Mason et al, 2011), free agents (Pink, 2002) and outsourcing, allow organizations to reduce costs, manage risks and gain flexibility. In addition, shifts in the market structure, based on information and communication technologies, together with advanced production systems, reduced the importance of economies of scale and allowed HBBs to effectively serve small, geographically dispersed, market niches (Institute for the Future/Intuit, 2008; Mason et al, 2011).

From a social and cultural perspective, positive perceptions towards self-employment and entrepreneurship improved in the 90s and contributed to the growth of the HBB trend (Mason et al., 2011; Vorley and Rodgers, 2014). For example, GEM Brazil 2014 reports that 36.4% of the adult population are involved with entrepreneurial activity, represented by the

total entrepreneurial activity (TEA) of the country, and 17.9% of adult Brazilians dream about 'owning a business', against 16.6% that dream about having 'a corporate career' (GEM Brazil, 2017). Besides, television programs such as Shark Tank and Dragons Den make entrepreneurship mainstream thus, becoming an entrepreneur is regarded a desirable path to financial and personal success.

HBBs are also an important form of business incubator and a driver for business variety for reasons of autonomy, freedom and independence of their owners (Sayers, Van Gelderen, & Keen, 2008). Also, home-based online enterprising also relates to low levels of individual self-efficacy and experience. It minimizes pre-commitment importance due to the use of non-proprietary online platforms and extends affordable loss to include social status and reputation (Daniel, Domenico, & Sharma, 2014). For those reasons, HBBs is a natural incubator for low-risk and low-cost alternative for trial-and-error approaches, with over one third moving out of home after testing and validating the business concept (Mason & Reuschke, 2015).

As many social phenomena, HBB is complex and studies identified HBB ranging from low-value lifestyle, survival or social oriented activities (Heeks and Arun, 2011; Lawanson, 2012; Frankish et al., 2014), to high-value, knowledge-based service provision or high-growth technology start-ups (Mason, 2009-2010; Mason and Reuschke, 2015; Westlund et al., 2014). In this regard, Daniel et al (2014) calls for the analysis of different types and thus configurations of HBBs, in order to dismiss prior research contradictions and differentiate HBBs to inform adequate public policies for fostering this expanding activity (Vorley & Rodgers, 2014).

In this study, we explore the role of individual and firm characteristics in Brazilian home-based businesses. Home-based entrepreneurs are diverse and operate under different conditions and motivations. As such, differences in individual resources, entrepreneurial perceptions and firm conditions influence their ability to generate revenue and value for their customers. We study the ways in which home-based entrepreneurs combine these conditions to

either obtain high or low levels of revenue, defined as a monthly revenue of three times the legal minimum wage.

More precisely, we adopt a configurational approach using QCA to explore how HBBs entrepreneurs managed to achieve high performance (*revenue*) through different configurations of four individual level and three firm level conditions: level of education, personal income, gender, positive entrepreneurial perception (*opportunity alertness, self-efficacy, fear of failure and entrepreneurial role models*), innovation (*newness, competition, technology and export*), use of internet and registration. Because HBBs are a diverse and complex social phenomenon, they are better understood as clusters of interconnected components rather than isolated independent variables (Fiss, 2007; Fiss et al, 2013). Rather than assuming a singular configuration of value generating HBB, we explore how different combinations of individual and firm-level conditions can lead to low or high levels of revenue generation.

The research uses a large-N sample of entrepreneurs, the Global Entrepreneurship Monitor (GEM) 2014 data, to provide a comprehensive understanding of conjunctural causation conditions of HBBs. More specifically, we adopt a Crisp-Set Qualitative Comparative Analysis (csQCA) configurational approach to explore entrepreneurs sociodemographic and perceptual characteristics related to configurations of high value and low value home-based business. csQCA captures organizational equifinality, which regards the existence of different combinations of individual and firm-level characteristics leading to successful HBBs.

As many social phenomena, HBB is complex and studies identified HBB ranging from low-value lifestyle, survival or social oriented activities (Heeks and Arun, 2011; Lawanson, 2012; Frankish et al., 2014), to high-value, knowledge-based service provision or high-growth technology start-ups (Mason, 2009-2010; Mason and Reuscke, 2015; Westlund et al., 2014).

Our study contributes to what we know about HBBs by identifying core and peripheral conditions that leads to high performance and low performance HBBs. We respond to calls by

Daniel et al (2014) and others to empirically identify different types of HBBs and conditions that affect them. We also contribute to the entrepreneurial resources and perceptions literature by investigating causal complexity of individual and firm level conditions associated to high and low performance in the HBBs context. We suggest that gender and financial resources are of primary importance and positive entrepreneurial perceptions of secondary importance to performance. We also suggest low performance HBB are informal businesses that mainly sell non-innovative products and services without using the internet to do so.

2 Literature Review

Entrepreneurship literature have long emphasized the interplay between individual-level demographic, economic and perceptual variables, as well as firm-level characteristics, as drivers of entrepreneurial behavior and firm performance (Arenius & Minniti, 2005; Davidsson & Honig, 2003; De Clercq, Lim, & Oh, 2013; Miao, Qian, & Ma, 2017). Entrepreneurship phenomenon relates to individuals who gather and mobilize resources to exploit opportunities (Shane and Venkataraman, 2000). Likewise, individuals with different characteristics combine and coordinate their resource endowments into the firm, which ultimately influence opportunity perception, exploitation and further firm performance (Chandler and Hanks, 1994; Brush et al., 2001, Baker and Nelson, 2004; Sarasvathy, 2001; Daniel et al, 2014).

However, predominant linear regression modeling focus on the unique contributions of independent variables in explaining variation in the dependent variable. It means linear regression approaches treat variables as competing, instead of understanding how they combine to generate the outcome (Fiss, 2007, 2011). This study adopts a neo-configurational perspective to investigate and theorize causal complexity underlying HBB phenomena (Mason et al., 2011; Misangyi et al., 2017). It investigates equifinality, conjunctural causation, and causal

asymmetry of the entrepreneurs' characteristics and resources (*educational level, personal income and gender*), perceptual variables (*opportunity alertness, self-efficacy, fear of failure and entrepreneurial role models*) and firm-level attributes (*innovation, use of internet and registration*) to identify and analyze configurations of low and high performance HBBs (Fiss, 2007, 2011; Ragin & Rihoux, 2009).

2.1 Home-based businesses (HBBs) performance

Home-based businesses (HBBs) are the majority of businesses worldwide. In developed economies, such as Australia, Scotland, United States and United Kingdom, HBBs comprise 50% to 60% of all businesses (Mason et al., 2011; Mason & Reuschke, 2015) (Mason et al, 2011; Mason and Reuschke, 2015). In developing economies like Brazil, HBBs represent 37.6% of all entrepreneurs and over 17 million individuals, contributing to approximately 4.5% of the Gross Domestic Product (Salusse & Andreassi, 2017). As such, understanding HBBs performance and success factors is important for social and economic development, specifically due to the potential for generating wealth and jobs.

HBBs are also one of the main trends of the post-industrial era, as the rise of service economy changed the way work is organized (Felstead et al., 2001; Mason, Carter and Tagg, 2011; Vorley and Rodgers, 2014). Companies redesigning, restructuring, downsizing, automation and the increased use of project-based working (Grabher, 2002; Ekismyth, 2012; Sydow and Staber, 2002), independent contractors (Mason et al, 2011), free agents (Pink, 2002) and outsourcing, allow organizations to reduce costs, manage risks and gain flexibility. Shifts in the market structure, based on information and communication technologies, together with advanced production systems, reduced the importance of economies of scale and allowed HBBs to effectively serve small, geographically dispersed, market niches (Institute for the Future/Intuit, 2008; Mason et al, 2011).

Prior research has also suggested HBB activity to be an important driver of business variety due to higher autonomy, freedom and independence of their owners (Sayers, 2010; Van Gelderen et al., 2008). Besides, HBBs is regarded a natural incubator as it provides a low-cost and low-risk alternative than onsite businesses for trial-and-error approaches, with over one third moving out of home after testing and validating the business concept (Mason and Reuschke, 2015). Moreover, and in line with effectuation theory, HBBs minimizes the importance of strategic alliances and pre-commitment due to the use of non-proprietary online platforms. HBBs also allow setting affordable losses at lower levels than onsite businesses and is associated to low levels of individual self-efficacy and experience (Daniel et al., 2014).

Finally, HBBs have consequences for issues of resilience and social justice in relation to the nature of domestic/work and gender relations (Chant, 2014; Thompson, 2009), economic inclusion of ethnic groups (Anwar et al, 2017), household livelihoods (Lawanson, 2012), formal/informal relations (Gulyani and Talukdar, 2010;), labor market flexibility (Sleutjes et al. 2012), the development of social networks and local communities (Risselada and Schutjens 2014), and city and housing design (Folmer and Risselada, 2013; Reuschke, 2012).

However, as many social phenomena, HBB is complex and prior research have identified HBBs ranging from low value lifestyle, survival or social oriented activities (Heeks and Arun, 2011; Lawanson, 2012; Frankish et al., 2014), to high value, knowledge-based service provision or high-growth technology start-ups (Mason, 2009-2010; Westlund et al., 2014). As such, HBBs are diverse and challenges individuals, organizations and societies (Bögenhold et al. 2014; Mason et al., 2011; Kitching and Smallbone 2012).

Our research investigates configurations of individual and firm level characteristics of home-based businesses in Brazil. Specifically, we explore how the entrepreneur's gender, level of education, personal income and entrepreneurial perceptions, as well as the firm's level of innovation, use of internet and formal registration, are combined in low and high revenue

generating HBBs. As such, the primary focus of this study is HBB performance, which we assess based on revenue data (Richard, Devinney, Yip, & Johnson, 2009). Furthermore, because HBBs a dynamic and diverse social phenomenon, it is expected that different combinations of conditions lead to low or high performing HBBs, which is likely to show equifinality (Mason et al, 2011; Clark & Douglas, 2014).

2.2 Individual characteristics and resources

2.2.1 *Level of Education*

Human capital theory states that knowledge increases cognitive abilities of individuals and potentially lead to more productive and efficient activity (Becker, 1964). Entrepreneurship literature often employs the level of education of the entrepreneur as a proxy for human capital and an input for innovation (e.g. Dakhli & De Clercq, 2004; Ucbasaran, Westhead, & Wright, 2008). In addition, comparative studies show positive effects of education on opportunity versus necessity entrepreneurship (Bosma et al, 2013). Therefore, the entrepreneurs' educational level positively relates to the quality of the perceived opportunities and the potential revenue generated by them (Arenius & Minniti, 2005; Davidsson & Honig, 2003).

Research on HBBs have also shown that the businesses created by individuals with higher levels of education are of better quality and of broader variety, which is important for developing competitive advantage, facing lower levels of competition and thus obtaining higher levels of revenue (Van Gelderen et al., 2008). Finally, because HBB entrepreneurs' are more independent and autonomous, HBBs are associated with higher levels of innovation and considered an important form of business incubator and business variety (Sayers, 2010).

2.2.2 *Personal income*

The entrepreneurship literature on financial resources states that the entrepreneur personal income positively influences entrepreneurial behavior (Arenius & Minniti, 2005; Minniti & Nardone, 2007). Prior research shows that, in general, entrepreneurs face liquidity constraints and typically lack collaterals, legitimacy or performance data to secure external financial resources from traditional banks and/or other investors. Thus, entrepreneurs normally resort to internal sources of financing, such as their own personal income, to exploit opportunities (De Clercq et al., 2013). Additionally, financial capital helps nascent entrepreneurs overcome initial liabilities of newness and smallness, random shocks, and allow them to pursue more capital-intensive activities, enabling differentiation strategies (Cooper, Gimeno-Gascon, & Woo, 1994; Gimeno, Folta, Cooper, & Woo, 1997).

Previous studies also suggest that HBBs provide a low-cost, low-risk, easy-entry option to trying out new ideas (Aldrich and Martinez, 2001; Van Gelderen, Sayers and Keen, 2008) and is fit for experimentation with trial-and-error approaches (Mason & Reuschke, 2015). Likewise, by setting affordable loss at lower levels than onsite businesses, HBBs allow individuals with low levels of self-efficacy and experience to use effectuation to create and develop new ventures (Daniel et al., 2014).

2.2.3 *Gender*

Gender differences in entrepreneurial behavior have been subject of substantial research attention and HBB is often associated with gender. Women are more likely to bear family-related responsibilities and childcare due to social and cultural factors (Homes et al., 1997; Rouse & Kitching, 2006; Kirkwood & Toothill, 2008; Walker & Webster, 2004). Because HBBs potentially accommodates both family and work activities, it overcomes limitations of traditional work arrangements (Loscocco and Smith-Hunter, 2004; Walker and Webster, 2004; Wynarczyk and Graham, 2013).

Besides, women are generally more risk averse (Hughes, 2003; Walker & Webster, 2004), tend to find it more difficult to access financial capital (Carter et al., 2007; Kirkwood, 2009; Loscocco and Smith-Hunter, 2004) and have on average lower levels of self-efficacy than men (Wilson et al, 2007; Diaz-García et al, 2010; Dempsey & Jennings, 2014), mainly due to negative gender role stereotyping (Sweida & Reichard, 2013), less entrepreneurial experience and lower levels of affect towards entrepreneurship (Wennberg, Park & Autio, 2013).

Prior research have also argued women may choose to become a HBB owner due to lower levels of entrepreneurial resources (Thompson, Jones-Evans, & Kwong, 2009). In this view, circumstances shape the decision of becoming a HBB entrepreneur, which is associated with low levels of financial resources and a reduced personal and psychological risk (Daniel et al., 2014). Other scholars states that although there are gender differences regarding HBBs and the entrepreneurs characteristics, such as level of education, motivations, among others, data indicate that women HBBs are a legitimate business and show serious growth intentions (Breen, 2010; Breen & Karanasios, 2010).

2.2.4 Entrepreneurial perceptions

Perceptual variables refer to factors that describe subjective perceptions and beliefs of the individual. Perceptions may not reflect objective circumstances, but influence behavior as it affects the way individuals perceive themselves and the context around them (Arenius & Minniti, 2005; Cacciotti & Hayton, 2015; Newman, Obschonka, Schwarz, Cohen, & Nielsen, 2018). Combined with individual resources, perceptual variables are fundamental for understanding entrepreneurial behavior. In our study, we developed a higher-order condition called positive entrepreneurial perception to use in the configurational analysis. The positive entrepreneurial perception condition is based on four perceptual variables known to influence

entrepreneurial behavior: opportunity alertness, self-efficacy, fear of failure and entrepreneurial role models (see section 3.2.2.4). In general, we expect that a positive entrepreneurial perception, which means to have positively answered to two or more questions related to the perceptual variables, is a necessary condition for high revenue HBB.

Opportunity alertness. The individual alertness to opportunities has been regarded a distinctive characteristic of entrepreneurial behavior (Kirzner, 1973, 1979). Based on a belief of the existence of an opportunity, individuals cognize new venture ideas and decide whether to exploit it or not (Davidsson, 2015; Shane and Venkataraman, 2000). Even though individuals decide to become entrepreneurs for many different reasons, even out of necessity, the ones that do it to exploit opportunities are expected to achieve higher performance and revenue levels (Ács, 2006; Bosma et al, 2013). This study adopts Bosma et al (2007) definition of perceived entrepreneurial opportunities, referring to individuals that responded positively for the single-item measure whether he/she believes on the existence of opportunities for starting a business in the area they live in a six months period.

Self-efficacy. Self-efficacy is rooted in social cognitive theory (Bandura, 1997, 2006) and informs agency perspective in entrepreneurship (Frese, 2009). It emphasizes the development of beliefs, motivation and action through observation and replication of behavior within a specific social contexts and domain (Cassar and Friedman 2009). Entrepreneurial self-efficacy (ESE) refers to the strength of an individuals' belief in the capability to successfully perform entrepreneurial roles and tasks (Chen, 1998) and influences entrepreneurial motivation, intention, behavior and performance (Newmann et al, 2018).

Prior research on individual level outcomes of ESE suggests it encourages higher goals and goal commitment, leading to an increase of the entrepreneurs dedication to action and decision-related tasks (Trevelyan, 2011). It also indirectly influences entrepreneurial persistence, which is fully mediated by entrepreneurial passion (Cardon & Kirk, 2015). From

the firm level perspective, ESE studies has generally examined the influence of the founder's or top managers entrepreneurial self-efficacy on performance (Hambrick & Mason, 1984). A recent meta-analysis of the founder ESE on firm performance found a positive relationship between ESE and revenue growth and profitability (Miao et al., 2017). The study also identified relevant moderators, such as entrepreneurial orientation (McGee & Peterson, 2017) and place-identity (Hallak, Assaker, & Lee, 2015).

In the HBB context, self-efficacy remains relevant, but Daniel, Di Domenico and Sharma (2014) suggested that online HBB entrepreneurs' show low levels of entrepreneurial self-efficacy and experience, because it minimizes pre-commitment importance and allow affordable loss to be set in lower levels. As such, it supports the argument of HBBs providing a low-cost option for experimentation (Van Gelderen, Sayers and Keen, 2008). Overall, we expect ESE to be positively associated with high performance HBBs, and its absence to be a necessary condition for low performance HBBs.

Fear of failure. In entrepreneurship, fear of failure has been investigated by three different streams of research (Cacciotti, Hayton, Mitchell, & Giazitzoglu, 2016). The psychology perspective defines fear of failure as the disposition to avoid failure and/or experiencing a negative feeling because of failure. It relates to psychological and behavioral outcomes, with most of the research suggesting that fear of failure is a barrier to entrepreneurial behavior. The other two perspectives, the economic-based view (see Arenius & Minniti, 2005; Langowitz & Minniti, 2007; Minniti & Nardone, 2007) and the social psychological view (see Clark et al, 1956; Hancock and Teevan, 1964; Vaillant and Lafuente, 2007; Brixi et al, 2012; Hessels et al, 2012; Wennberg et al, 2013), rely extensively on the Global Entrepreneurship Monitor (GEM) single item measure (Bosma, 2007:11) and also indicate a negative influence of fear of failure on entrepreneurial behavior. For this study, we use the GEM single-item measure of fear of failure and expect a general negative influence on entrepreneurial behavior.

Notwithstanding, we consider that individuals are risk averse and may adopt risk mitigation strategies, such as becoming a home-based business, in the pursuit of entrepreneurial activities (Daniel et al, 2014).

Entrepreneurial role models. The existence of role models is associated with higher self-efficacy in psychology (Baron, 2000), the reduction of ambiguity in economics (Minniti, 2004) and higher entrepreneurial confidence in sociology (Aldrich, 1999). In entrepreneurship, exposure to role models provides vicarious learning, is a source of social persuasion and positively influences self-efficacy (Minniti and Nardone, 2007), which potentially leads to enhanced performance (Miao, Humphrey, & Qian, 2018). Role models also influences in the reduction of uncertainty (Davidsson and Honig, 2003) and offer of advice and emotional support (Klyver & Hindle, 2007; Klyver, Hindle and Meyer, 2008; Manolova et al, 2007).

Moreover, role models also affect the general social and cultural perception towards entrepreneurship (Farashs, 2015), which positively influences one's decision to become an entrepreneur (Mason et al., 2011; Vorley and Rodgers, 2014). In general, knowing other entrepreneurs correlates positively with self-efficacy and entrepreneurial behavior, leading to higher performance firms (Arenius & Minniti, 2005; De Clercq et al., 2013). We also use GEM single item measure of role models and expect that positive entrepreneurial perception is necessary for high revenue HBB.

2.3 Firm-level conditions

2.3.1. *Innovation*

Innovation is associated with both entrepreneurial resources and perceptions. Higher levels of education and financial resources potentially leads to more innovative firms when properly channeled by the entrepreneur into the firm (see Dakhli & De Clercq, 2004; Ucbasaran,

Westhead, & Wright, 2008). Accordingly, the quality and nature of the opportunity is also likely to influence its innovative potential and ultimately firm performance (Arenius & Minniti, 2005; Davidsson & Honig, 2003). Moreover, HBBs are associated with higher levels of innovation and considered an important form of business incubator and a source of business variety (Sayers, 2010). The overall rationale is that innovation leads to differentiation, which in turn allows the firm to avoid competition and achieve higher levels of revenue and performance.

In our study, we used a higher-order condition named innovation to perform the configurational analysis. The innovation condition is based on four innovation proxies: product and service newness, level of competition, available technology and export (see section 3.2.2.4). Considering that innovation positively influences performance, we considered that HBBs need to have at least one innovative condition to be coded fully in the innovation set. We also expect innovation to be a necessary condition for high revenue HBB.

Newness. Product and service newness is a proxy for innovation and associated with the use of new technologies and/or processes. Newness refers to the existence of none, some or all potential customers who consider the offered product or service new and unfamiliar. For this study, we used GEM single-item measure for newness and expect a positive influence on HBBs performance.

Competition. Innovative firms are often more capable of developing competitive advantage and thus minimize competition. Because they face less competition, firms are potentially in a better position to achieve higher levels of revenue. GEM measures competition by asking respondents whether many, few or no other businesses offers the same products or services to the firm potential customers. Innovative HBBs that face less competition are expected to be associated with higher performance.

Technology. The use of new technologies is also a proxy for firm innovation. In the case of HBBs, information and communication technologies as well as the use of online platforms

allow firms to develop new products and services and target niche and more profitable markets. In this research, technology relates to the age of available technologies or processes required for the production or provision of the HBBs services and products. We considered to be innovative HBBs that use technologies no older than five years and expect it to enhance performance.

Export. Innovative companies are also associated with higher export rates. GEM measure on export identifies the proportion of the customers that normally live outside the country. Contextual and empirical knowledge about small and medium business export activity in Brazil was taken into consideration to define an HBB as being innovative if it had 11% or more customers living outside the firm's country. Again, we expect export to be associated with high performance HBBs.

2.4.2. *Use of internet*

Home-based businesses may rely on the internet to promote and sell products and services. Overall information and communication technologies, affordable IT hardware, and the emergence of marketplaces and service platforms allowed HBBs to effectively serve small, and geographically dispersed market niches (Sayers & Monin, 2005; Van Gelderen et al, 2008) (Institute for the Future/Intuit, 2008). Shifts in the market structure and new production systems have also lowered entry barriers and contributed to the emergence of successful HBBs. Besides, online HBBs tend to be more innovative, for reasons of autonomy, freedom and independence of their owners, thus of higher potential performance than non-online businesses.

At the same time, social and cultural trends driven by demographic changes may favor the emergence of semi-retired people running HBBs (Vorley and Rodgers, 2014). Likewise, generation Y individuals are expected to start their own businesses, which tend to be online due

to their technology embeddedness and entrepreneurial mindset (Mason et al., 2011). Home-based internet businesses also relate to low levels of individual self-efficacy and experience, as it reduces resources requirements, affordable loss levels and minimizes pre-commitment importance due to the use of non-proprietary online platforms (Daniel et al, 2014). As such, online HBBs may offer women, ethnic entrepreneurs and other minorities and geographically isolated individuals, opportunities to draw on advantages of niche markets and profitable markets (Breen, 2010; Breen & Karanasios, 2010; Thompson, 2009; Anwar & Daniel, 2017).

2.4.2. *Registration*

Business registration signals formal or informal economic activity. Formal businesses can access better opportunities and perform better because they can sell products and provide services for the entire potential market. Informal businesses, in turn, are normally less structured and suffer more acutely from the lack of legitimacy and liabilities of newness and smallness. Informality is often associated with survival businesses and is expected to negatively influence HBBs revenue and performance.

As prior research has contended, and as our review individual and firm level conditions highlight, there may be equifinality in the configuration of high and low performance HBBs. Different individuals with different resource endowments will be effective depending on how they combine and channel them into the firm. Interestingly, there currently exists no configurational analysis on HBBs, but only inferential statistic evidences from prior research. This motivates our exploratory approach aimed at understanding how different resources, perceptions about entrepreneurship and HBBs attributes affect entrepreneurial success. We look at revenue as a proxy for HBB performance and investigate both high and low performance HBBs. In this study we address the research question: *how does the entrepreneur resources,*

perceptions about entrepreneurship and firm characteristics affect the level of revenue they generate?

3. Methodology

To address our research question, we used qualitative comparative analysis (QCA). QCA is a case-based set theoretic method that employs Boolean algebra and algorithms to identify and test combinations of conditions that lead to an outcome of interest (Fiss, 2011; Ragin, n.d.; Schneider & Wagemann, 2012). In our study, cases are comprised of home-based businesses, but analysis also consider individual level attributes as entrepreneurship operates at multiple levels (Davidsson & Wiklund, 2001). The core feature of QCA involves assigning cases membership scores in sets of theoretically relevant attributes and variables. In QCA attributes and variables are called conditions (Fiss, 2007). For example, in our study we analyzed whether HBBs were members of a set of firms that reported high annual revenue. We were interest in relationships between set membership in individual and firm conditions and set membership in a performance outcome.

By exploring set relations, QCA allows to test and elaborate theory based on causal statements regarding whether conditions are necessary and/or enough for the outcome to occur. A necessary condition is one that is required for the occurrence of the outcome, which means that the outcome is present whenever que condition is found (Schneider & Wagemann, 2012). Enough condition is one where the outcome of interest is present whenever the enough condition is found. Necessary and enough conditional statements lead to complex causal statements that are conjunctural (Fiss, 2007). It means that set theoretic methods, and QCA, aim to identify and test combinations of conditions that jointly produce the outcome of interest (Ragin, 2008).

In line with set theory (Ragin, 2000) and neo-configurational approach (Misangyi et al., 2017), our research question is well suited for QCA methodology. In our study we examine how configurations of the entrepreneurs resources (*gender, level of education and personal income*), perceptions (*opportunity alertness, self-efficacy, fear of failure and entrepreneurial role models*), and firm attributes (*innovation, use of internet and registration*), lead to HBBs that generate annual revenue of at least three times the legal minimum wage or two times the average national *percapita* income. We adopt a configurational approach because HBBs are diverse and better understood as clusters of interconnected components rather than isolated independent variables (Mason et al, 2011; Fiss, 2007; Fiss et al, 2013). Besides, QCA methodology captures equifinality, which refers to existence of different combinations of conditions leading to the outcomes.

For the study, we followed standards of good practice (Greckhamer, Furnari, Fiss, Aguilera, et al., 2018; Schneider & Wagemann, 2010), and built on advantages of large-N QCA method (Greckhamer, Misangyi, & Fiss, 2013) to elaborate configurational theory on HBBs as well as on entrepreneurial resources and perceptions. In addition, we adopted Fiss (2011) causal core and periphery theoretical perspective, to test how configurations of conditions are connected to the outcome of interest. We aim at developing a configurational analysis based on the diversity of high performance (and non-high performance) HBBs (Fiss, 2007, 2011; Fiss et al, 2013). By exploring how configurations of conditions are associated with the performance outcome, we align our theoretical approach and QCA methodology to generate novel theory and insights that are fundamentally configurational (Fiss et al, 2013; Greckhamer et al, 2015).

3.1 Data

For our study we used large-N QCA approach on GEM Brazil (GEM, 2015) survey data. The dataset consists on responses from 10.000 individuals aging between 18 and 64 years.

As the cases for our study, we selected the 1.204 entrepreneurs who reported being actively running HBBs at the time of the survey. HBBs was a special topic in GEM Brazil survey (GEM, 2015) and represent a unique dataset about businesses that are managed from or at home. HBBs were operationalized by self-reported data of respondents who answered positively to the question whether he/she would mainly work in their business from home. In line with best practice, we selected the “entire population of cases relevant to explain” our outcome of interest (Greckhamer et al., 2018: 7). Moreover, since QCA approach does not involve statistical inference nor rely on probability theory, results should not be generalized beyond the sample (Greckhamer et al., 2013).

This large number of cases is particularly appropriate for large-N QCA analysis and provide a fertile ground for configurational theory development. By establishing membership in sets related to gender, level of education, personal income, entrepreneurial perceptions, and the firm’s innovation, use of internet and registration, we tested combinations of conditions to identify empirical configurations of high performance HBBs. High performance HBBs refers to cases that generated annual revenue of a least three times the legal minimum wage.

Because the literature only provides inferential insights into the variables that affect HBBs performance, we employed an exploratory approach to investigate causal and configurational relationships related to the HBB phenomenon. We also capitalized on GEM theoretical model and prior literature on resources and entrepreneurial perceptions to identify potential predictors of revenue generation. Moreover, because no prior research on HBBs have employed set theory, we developed a configurational analysis of high and low performance HBBs. The results contribute to configurational theory on HBBs as well as on entrepreneurial resources and perceptions.

3.2 Measures

In QCA, predictors and variables of interest are called conditions (Ragin, 2000). Conditions are calibrated as sets to which cases are designated membership. In general, calibration refers to the theory-driven process of assigning cases' membership into sets representing the conditions and the outcome of interest (Fiss, 2007; Ragin, 2008). The calibration process occurred as follows. First, we analyzed the data to clearly define each set representing the causal conditions and the outcome. Second, we employed the direct method to establish qualitative anchors to capture differences in kind based upon both theoretical and substantive knowledge. Third, based on the screening of the data, we developed guidelines for what should be considered fully in (1) and fully out (0) of set membership of each condition and the outcome (Greckhamer, Furnari, Fiss, Aguilera, et al., 2018; Schneider & Wagemann, 2010).

Calibration guidelines are presented in Table 1 for a detailed assessment on the validity and robustness of set membership calibration decisions (Greckhamer, Furnari, Fiss, Aguilera, et al., 2018; Schneider & Wagemann, 2010). For this study, we employed Ragin (1987) crisp-set qualitative comparative analysis (csQCA). Crisp-sets categorize cases as either fully in (1) or fully out of set membership (0). In our case, a crisp-set approach is preferable to a fuzzy-set approach because most conditions based on GEM data were categorical and showed only “differences in kind”, thus lacking relevant theoretical gradients.

Insert Table 1 Here

3.2.1 Outcome

3.2.1.1 Home-based businesses (HBBs) performance. Firm performance should reflect on revenue. Based on prior organizational performance research, we measured HBBs performance based on self-reported revenue data (Richard et al., 2009). Because HBBs are dynamic and a diverse social phenomenon (Mason et al, 2011; Clark & Douglas, 2014), we expect that different combinations of conditions lead to high and low performance HBBs and relate to conjunctural causation and equifinality. In essence, individuals with different characteristics and resource endowments evaluate and exploit different opportunities in various ways, which leads to many possible paths and types of firms leading to high levels of revenue (Chandler and Hanks, 1994; Brush et al., 2001, Baker and Nelson, 2004; Sarasvathy, 2001; Daniel et al, 2014). As such, in this study we classified as high performance HBBs the ones who obtained revenue over a threshold of R\$ 24.000 (twenty-four thousand reais). We also leverage the asymmetry of QCA analysis to contrast configurations of conditions leading to high performance HBBs with configurations of conditions leading to low (non-high) performance HBBs. This contrast provides a fruitful way to investigate asymmetric causality in our data.

For this study, we operationalized HBBs entrepreneurs based on respondents who affirmed they would mainly work in the business from home. The set membership threshold used theory and contextual knowledge to be set at annual revenue of R\$ 24,000.00 (twenty-four thousand reais) or average monthly revenue of R\$ 2,000.00 (two thousand reais). The threshold is approximately three times the national minimum wage of R\$ 724.00 (seven hundred and twenty-four reais), which is determined by law (Decreto 8.166/2013), and two times the 2014 official (IBGE, 2015) monthly per capita income of R\$ 1,052.00 (one thousand and fifty-two reais). We coded as fully in (1) the set of HBBs whose entrepreneur reported annual revenue of R\$ 24,000.00 or more (twenty-four thousand reais) and as fully out (0) cases that reported revenue above R\$ 24,000.00 (twenty-four thousand reais).

3.2.2 Explanatory conditions

We identified seven explanatory conditions likely to influence HBBs performance. As previously mentioned, all conditions were identified from prior literature. Three conditions relate to individual-level attributes (*gender, level of education, personal income*), the positive entrepreneurial perception condition gathers four perceptual variables (*opportunity alertness, self-efficacy, fear of failure and entrepreneurial role models*) and three condition are associated with firm-level characteristics (*innovation, use of internet and registration*). Below we describe how we determined set membership in each condition. Table 1 shows the calibration guidelines of conditions and the outcome, which allows assessment of set membership calibration decisions (Greckhamer, Furnari, Fiss, Aguilera, et al., 2018; Schneider & Wagemann, 2010).

3.2.2.1. Level of Education. The entrepreneur's level of education is as a proxy for human capital and an input for innovation (e.g. Dakhli & De Clercq, 2004; Ucbasaran, Westhead, & Wright, 2008). Human capital positively influences the quality of perceived opportunities, the potential to develop competitive advantage and generate revenue (Arenius & Minniti, 2005; Davidsson & Honig, 2003). While high education could be a necessary condition to high performance, it is reasonable to consider that non-wealthy individuals can create and develop successful HBBs, specially based on positive entrepreneurial perceptions.

Contextual and empirical knowledge was used to set membership at secondary degree level. In Brazil, according to official statistics, only 25,5% of individuals aging 25 years or older own a secondary degree. Even less, only 17%, have post-secondary education, which includes higher education as well as vocational and professional education and training. As such, adopting post-secondary education level as threshold would imply in high skewness and a non-inclusive set membership. Taking contextual knowledge into consideration, we calibrated

the level of education set based on the entrepreneur's secondary degree, which denotes a high level of education for the Brazilian context. We coded entrepreneurs with secondary degree or more as fully in the set (1) while entrepreneurs with lower levels of education as being fully out of the set (0).

3.2.2.2 Personal income. Entrepreneurs often use personal financial resources to exploit opportunities (De Clercq et al., 2013). In line with this argument, the individual's income is likely to positively influence entrepreneurial behavior (Arenius & Minniti, 2005; Minniti & Nardone, 2007) and the pursuit of more capital-intensive activities (Cooper et al., 1994; Gimeno et al., 1997). It also protects the entrepreneur against liabilities of newness and smallness, random shocks and liquidity constraints.

However, HBBs is known to provide a low-cost and low-risk option to start up (Aldrich and Martinez, 2001; Van Gelderen, Sayers and Keen, 2008) and allow for individuals' to set affordable losses at lower levels than onsite businesses. It means that even individuals with lower levels of resources, self-efficacy or experience may become entrepreneurs, specially by using experimental approaches such as effectuation (Daniel et al, 2014). So, while high income may be a necessary condition to high performance HBBs, individuals with non-high personal income may also create high performance HBBs, especially in conjunction to positive entrepreneurial perceptions.

We thus used the same contextual and empirical knowledge to set personal income threshold at of R\$ 2,897,00 (two thousand eight hundred and ninety-seven reais) or above. The amount is approximately four times the legal minimum wage of R\$ 724.00 (seven hundred and twenty-four reais). We coded as fully in (1) entrepreneur's that reported personal monthly income at the referred threshold or above, and fully out (0) entrepreneurs that reported personal income below it.

3.2.2.3 Gender. Gender is known to influence entrepreneurial behavior. Women are more likely to bear family-related responsibilities (Homes et al., 1997; Rouse & Kitching, 2006; Kirkwood & Toothill, 2008), are generally more risk averse (Walker & Webster, 2004), find it more difficult to access financial capital (Carter et al., 2007; Kirkwood, 2009; Loscocco and Smith-Hunter, 2004) and may choose to become a HBB owner due to lower levels of entrepreneurial resources (Thompson et al., 2009). As such, circumstances shape women's decision to become an HBB entrepreneur.

However, previous research has also argued that women HBBs are a legitimate form of business with serious growth intentions (Breen, 2010; Breen & Karanasios, 2010) and that HBBs may help women to overcome limitations of traditional work arrangements, by accommodating both family and work activities (Loscocco and Smith-Hunter, 2004; Walker and Webster, 2004; Wynarczyk and Graham, 2013). Additionally, HBBs are associated with lower levels of affordable loss and with reduced personal and psychological risk, which allows women to test new venture ideas and enhance self-efficacy (Newman et al., 2018) (Daniel et al, 2014; Thompson et al, 2009). For the reasons presented, men (1) were coded as fully in the set while woman (0) were coded as fully out the set.

3.2.2.4 Positive Entrepreneurial Perception

The positive entrepreneurial perception higher-order condition comprises opportunity alertness, self-efficacy, fear of failure and entrepreneurial role models. The condition was created by the sum of the HBB entrepreneurs' answers to each of the perceptual variables. For a clear understanding of the methodological procedures, the baseline conditions coding process are detailed above. For this study, we defined as fully in the positive entrepreneurial perception

set cases whose entrepreneur had at least two positive perceptions (1) about entrepreneurship. In turn, cases that showed one or none positive answers were considered fully out of the set and thus coded (0).

Opportunity alertness. Alertness denotes the respondent's personal evaluation of business opportunities (Kirzner, 1973, 1979). It refers to individuals that responded positively to the question wherever there will be good opportunities for starting a business in the area where he/she lives in the next six months (Bosma, 2007). We coded HHBs as fully in the set firms whose entrepreneur believe in the existence of opportunities (1) while the other firms were coded as being fully out of the set (0).

Self-efficacy. Entrepreneurial self-efficacy is the respondent's belief in her/his capacity to start a business (Bosma, 2007). Individuals may or may not believe they have the knowledge, skills and experience required to perform entrepreneurial roles and tasks (Chen, 1998). To believe in one's self-efficacy positively influences entrepreneurial behavior and firm performance (Miao et al, 2017). We coded HHBs entrepreneurs' with self-efficacy as fully in the set (1) and the ones that lack self-efficacy as fully out (0).

Fear of failure. Fear of failure refers to the disposition to avoid failure and/or experiencing a negative feeling because of failure (McClelland et al, 1953). For this study, we adopted GEM single item measure (Bosma, 2007), which states whether fear of failure would prevent the respondent from starting a business. As framed, the measure suggests a negative influence of fear of failure on entrepreneurial behavior. As such, fear of failure was reversed coded and entrepreneurs who responded no (1) were considered as being fully in the set. In turn, if the entrepreneur responded yes (0) the case was considered as fully out.

Role models. The existence of role models allows for vicarious learning and potential advice and emotional support (Klyver & Hindle, 2007; Klyver, Hindle and Meyer, 2008; Manolova et al, 2007). It is also associated to higher awareness and self-efficacy (Bandurra,

1997; Minniti and Nardone, 2007) and lower uncertainty (Davidsson and Honig, 2003). It means that personally knowing someone who started a business in the past two years positively influences the respondents' perception about entrepreneurship and the likelihood of entrepreneurial behavior (Arenius & Minniti, 2005; De Clercq et al., 2013). HBBs whose entrepreneur personally knew role models were coded as fully in (1) the set, and fully out (0) when they did not.

3.2.2.5. *Innovation*

In a similar process as the positive entrepreneurial perception condition, we created the innovation higher-order condition as the sum of the HBB entrepreneurs' answers to each of the innovation related questions. After iteratively analyzing the data and set membership relations, we defined cases with at least one innovative characteristic (1) as fully in the innovation set, while cases with none innovative characteristics were coded fully out (0).

Newness. Newness denotes innovation and the idea that potential customers consider product or services new and unfamiliar. We defined as fully in the set cases associated with HBBs offering products or services that were considered new and unfamiliar to some or all potential customers (1) and fully out when no potential customer (0) would consider them new and unfamiliar.

Competition. Innovation drives differentiation and mitigates competition. So, we coded firms as fully in the set if there were few or some other businesses offering the same product or service (1) and fully out the set if there were many (0) businesses with similar offers.

Technology. The age of the available technology gives us an idea of the level of innovation of the firm. HBBs that were using technology or processes available for less than

five years (1) were coded as fully in the set, while the HBBs that were using technologies older than five years were coded as fully out the set (0).

Export. The percentage of customers outside the firm's country was also used as a proxy for innovative activity. We coded fully in HBBs with at least 11% of customers that normally live outside the firms' country (1) and the ones with 10% or less were coded fully out the export set membership (0).

Use of internet. Online HBBs can effectively serve profitable and geographically dispersed niche markets using new technologies (Sayers & Monin, 2005; Van Gelderen et al, 2008) (Institute for the Future/Intuit, 2008). Being more autonomous and independent, online HBBs entrepreneurs may iteratively try out new ideas and offer products and services to test the market, leading to innovation, differentiation and higher firm performance. Furthermore, by reducing resource requirements, affordable loss and pre-commitment importance, HBBs allow women and minorities to become entrepreneurs and reach profitable niche markets (Breen, 2010; Breen & Karanasios, 2010; Thompson, 2009; Anwar & Daniel, 2017). We coded fully in the set entrepreneurs who responded affirmatively to the question whether they would use the internet to sell products or services for their business (1) while the negative answers were coded fully out of the set (0).

3.2.2.7 Registration. Informal businesses are less capable of selling products and providing services for the potential market, thus impacting their revenue and performance. We coded firms as fully in the set if they had formal registration (1) and fully out the set if they had no formal registration (0).

3.3 Analytical Approach

For this study, we used crisp set QCA large-N analytical approach. After calibrating conditions and the outcome as showed in Table 1, we constructed a truth table consisting of all 2^7 possible configurations. In line with best practice, we adopted a consistency threshold score of at least > 0.90 for necessity analysis and of ≥ 0.8 of raw consistency for sufficiency analysis. Consistency refers to the degree to which cases of an outcome agree in displaying the causal condition (Ragin, 2000, 2008) and thus provide information to evaluate the model's validity. We used QCA package for R software for the analysis and applied the eQuine-McCluskey algorithm (Dusa & Thiem, 2014) (Fiss, 2007).

3.3.1 Sufficiency analysis

Our analysis shows how HBBs with combinations of differing set membership across individual and firm-level conditions led to high performance HBBs. We used the csQCA method on the QCA package for R software to analyze the resulting configurations (Dusa & Thiem, 2014). The QCA package uses algorithms to investigate how a firm's membership in a configuration of conditions is related to membership in the outcome. Additionally, it employs Boolean algebra to reduce the truth table to simpler expressions, resulting in a Boolean statement describing multiple configurations that are each enough but not necessary for the outcome of interest. As initially expected, our analysis identifies multiple, equifinal configurations of conditions leading to high performance HBBs (Fiss, 2007).

4. Results

Our results below report solutions generated by the package QCA in R software (Dusa, 2018). Table 2 presents columns with distinct sufficiency configurations associated with high performance HBBs, and Table 3 with the negation of the outcome, non-high performance or

low performance HBBs. Following convention, we used a solid black dot (●) to represent the presence of a condition, and a hollow circle with an x (⊗) to denote the absence of a condition. Blank spaces mean that a condition does not matter for the configuration and it can be either present or absent.

Moreover, we employed causal core-periphery perspective to better understand theoretical importance of conditions on the configurational analysis (Fiss, 2011). Core conditions are represented by large symbols (● ⊗) and denote a strong causal relationship with the outcome. Peripheral conditions are represented by small symbols (● ⊗) and resemble weaker causal relationships. Core-periphery conditions are based on counterfactual analysis and determined by comparing the parsimonious solution and the intermediate solution.

The parsimonious solution uses all remainders to remove unnecessary conditions and obtain the simplest possible solution (see Misangyi and Acharya, 2014). In turn, the intermediate solution uses only theory driven assumptions about the presence or absence of conditions in the simplification process (Fiss, 2007). In our study we assumed that the presence of all theoretically identified conditions were positively associated with revenue and performance. Drawing on both parsimonious and intermediate solutions, core conditions are present in both parsimonious and intermediate solutions, while peripherals are only present in the intermediate solutions and thus are removed from the parsimonious solution based on theoretically-driven assumptions about the effect of conditions in the outcome.

Following Greckhamer, Furnari, Fiss, & Aguilera (2018) and Schneider & Wagemann (2010), we first analyzed the set-subset relationships of the truth table using Boolean algebra within package QCA in R software (Dusa, 2018). For sufficiency analysis, we set the minimum raw consistency at ≥ 0.80 and the case frequency threshold at a minimum of three cases per configuration, leading to 95,5% of cases in the analysis which is well above the 80% established benchmark (Greckhamer et al., 2013 and see Ragin, 2008; Rihoux & Ragin, 2009).

Second, we reported consistency and coverage for the overall solutions as well as for each configuration (e.g., Fiss, 2011; Crilly, 2011). Solutions contain several configurations and raw coverage shows the proportion of cases that lead to the outcome, which includes overlap among cases. Unique coverage, in turn, is the percentage of cases in the outcome that is attributable only to the configuration (Ragin, 2006a).

Third, we developed a structured approach for the analysis. We first analyzed the causal sufficiency of the individual and firm level conditions to high performance HBBs. Based on these initial findings, we excluded any solution that did not meet the acceptable consistency benchmark of ≥ 0.80 . Furthermore, we excluded configurations with low coverage and empirical relevance in order to enhance parsimony of final solutions (see Misangyi & Acharya, 2014). We then investigated the existence of core peripheral conditions as well as neutral permutations. Finally, we examined the firm and individual level bundle of conditions associated with low performance HBBs.

4.1 Sufficiency analysis for high performance HBBs

An individual and/or firm level condition or configuration of conditions is enough for high performance whenever the occurrence of the condition(s) is accompanied by the outcome (Ragin, 2000). Enough condition is thus a subset of the outcome set, meaning that the outcome of interest is present whenever the enough condition is found. Consistency and coverage scores for each configuration and for the overall solution is reported in the analysis. Consistency “indicates how closely a perfect subset relation is approximated” (Ragin, 2008: 44). Coverage “indicate the percentage of cases that take a given path to the outcome” (Fiss, 2011:409) and gauges the “empirical relevance or importance“ (Ragin, 2008: 44) of different causal configurations.

Table 2 shows the results of csQCA analysis for configurations of high performance HBBs. Both individual configurations and overall solution coverage and consistency scores are above the benchmark threshold of ≥ 0.80 for organization research (Fiss, 2011; Greckhamer, Furnari, Fiss, Aguilera, et al., 2018; Ragin, 2008). Solutions for high performance HBBs indicate the presence of both core and peripheral conditions and the absence of neutral permutations among configurations. Neutral permutations exist when configurations share the same core conditions, which is not the case for our analysis. The absence of neutral permutations indicates a situation of first-order or across-type equifinality of solutions, with no second-order equifinality.

Insert Table 2 Here

As expected and based on contextual knowledge about HBBs in Brazil, the overall solution coverage of sufficiency for high performance HBBs was low. Only 13% of HBBs were high performance firms and they are mostly owned by men with high personal income. Consistency was high and indicates that 92,2% of cases exhibiting the configurations present in the solution would also exhibit the outcome (Ragin, 2000, 2008). Configurational analysis support prior research based on inferential statistics about HBBs and give new insights about how high performance HBBs combine individual and firm level conditions. Results generated three different configurations, none of them presented neutral permutations.

4.1.1 Configuration 1: The positive HBB

Configuration 1 resembles an HBB owned by a wealthy man with positive perceptions about entrepreneurship, but not much education. It is the individual who identified an opportunity in the market and, even though lacks formal knowledge, has enough personal financial resources to sustain the exploitation of the opportunity. *The positive HBB* relates to non-high educational level, high personal income, male and at least two positive entrepreneurial perceptions. Two core conditions were present, low level of education and high personal income, while gender and positive entrepreneurial perceptions are peripheral. Raw coverage was 4,4% and consistency 0.889.

We called configuration 1 the positive HBB because it is the presence of the positive entrepreneurial perception condition that distinguishes it from the other configurations in the solution. It is interesting to note that the absence of high level of education did not prevent the entrepreneur from achieving high performance, which indicates being personal income of strong causal relationship with the outcome.

4.1.2 Configuration 2: *The specialized HBB*

Configuration 2 is the *specialized HBB* and represents the formally registered HBBs whose owner is a wealthy high educated man. Gender, high personal income and firm registration form the core conditions of the configuration. High level of education is the only peripheral condition, which suggests that the nature of the services may vary, as in the case of specialized services, which can be knowledge intensive (i.e. consultancy and IT) or other kind of high-value specialized services (i.e. carpenter and arts).

Configuration 2 HBBs are represented by consultants, freelancers, small retailers and general service providers. Moreover, formal business registration indicates positive socio-economic contribution. Configuration 2, the specialized HBB is the most important

configuration associated with high performance HBBs, with a raw coverage of 8% of cases and 0.967 consistency.

4.1.3 Configuration 3: *The online HBB*

Configuration 3 is represented by high educated men that runs formal HBBs using the internet to sell and/or provide non-innovative products and services. We called configuration 3 *the online HBB*. Configuration 3 show consistency of 1.000, raw coverage of only 1.9%, and all conditions from the configuration are core conditions and thus important for the outcome to occur. As registered businesses, they also contribute to society through job creation and economic development through the generation of wealth. It is interesting to note that the absence of innovation is a core condition for the online HBBs, which indicates that these entrepreneurs are using the internet to target unserved markets with existing products and services.

Overall evidences support prior research on the importance of financial and human resources for high performance entrepreneurship (i.e Arenius & Minniti, 2005; De Clercq et al., 2013). Also, for all sufficiency configurations, gender (male) is present either as a peripheral condition (configuration 1) or a core condition (configurations 2 and 3). As such, being a man is enough condition for high performance HBBs in any of the configurations. Equally, to have a formal registration is also enough core condition to high performance in configurations 2 and 3, which support the social-economic contribution of some types of HBBs and consolidate them as legitimate businesses.

4.2 Sufficiency analysis for low performance HBBs

Table 3 presents configurations associated with firms that did not achieve high performance based on revenue. Overall solution coverage for low performance HBBs was

67.9% and consistency 0.872. Once again, sufficiency analysis denotes the occurrence of a condition or configuration of conditions whenever the outcome of interest is present (Ragin, 2000). Importantly, the analysis of non-high-performance configurations yielded new insights into how the entrepreneur's resources, or the lack of them, is enough for HBBs not to achieve the revenue threshold. Informality is the rule when it comes to HBBs that did not achieve annual revenue above R\$ 24.000,00 (twenty-four thousand Brazilian currency), approximately three times the legal minimum wage. Not having a formal registration is enough core condition to all five configurations associated with low performance. Also, female gender is a core condition for configurations 1, 3, 4 and 5, being thus a relevant enough condition for the negation of the outcome within the identified configurations.

In general, evidence from our configurational study supports existing research that argues women have lower levels of entrepreneurial resources, lower levels of positive entrepreneurial perceptions and that some may choose to become HBBs owners due to lack of alternatives. However, in contrast to our csQCA analysis, prior studies offer limited insights into how conditions are combined to form different types of HBBs. Our study shed light on the internal causal structure of the different types of HBBs. As showed above, it allowed new understandings about core and peripheral conditions as well as the asymmetric causal relationships present across low performance spectrum of HBBs.

4.2.1 Configurations 1 and 5: *The ordinary HBB*

Configurations 1 and 5 share the same individual level configuration of conditions, which is characterized by well-educated woman, mostly with low personal income. Both configurations represent informal business that provide services or sell products from or at home. Configurations 1 and 5 differ on two core condition. Configuration 1 combines high level of education, female gender, no use of internet and no registration. Meanwhile, the use of

internet does not matter for configuration 5, but the absence of innovation and positive entrepreneurial perceptions are core enough conditions for the outcome. We called them *the ordinary HBBs* because they represent simple traditional home-based enterprises that mostly do not use the internet (configuration 1) neither are innovative (configuration 5). Both are informal and owned by high educated women entrepreneurs without positive entrepreneurial perceptions, which suggests secondary economic activity. Configuration 1 has a raw coverage of 24.1% and configuration 5 a raw coverage of 13.8%. Configuration 1(0.853) and configuration 5 (0.859) consistency are similar and both higher than the 0.80 benchmark for sufficiency analysis.

4.2.2 Configuration 2 and 3: *The survival HBB*

Configurations 2 and 3 are *the survival HBBs* and share the same firm level configuration of conditions, which is characterized by no use of internet and no registration as core conditions. In both configurations no positive entrepreneurial perception is also a core condition and low personal income is peripheral. Differences relate to high educational level in configuration 2 and female gender in configuration 3. Configuration 2 shows raw coverage of 14.4% and 0.877 consistency. Configuration 3 is the most empirically relevant configuration associated with low performance, with almost 60% of raw coverage and 0.871 consistency.

The survival HBB is characterized by the absence of conditions, instead of the presence of them. Survival HBBs relate to low personal income individuals with no positive entrepreneurial perception, that runs an informal business without the use of internet. They comprise entrepreneurs who provide simple services such as sewing, craftwork, cheap labor related services, among others, or sell simple or homemade products such as meals, cakes, sweets, chips and beverages. In both configurations there is an absence of positive entrepreneurial perception as a core condition, which suggests survival-oriented

entrepreneurship. Interestingly, the survival HBBs represent informal economic activity in the bottom of the social pyramid in an emerging economy.

4.2.3 Configuration 4: *The naïve HBB*

Configuration 4 comprises female gender, low level of education, low personal income, no innovation, no registration, but the presence of positive entrepreneurial perception. That's why we called it *the naïve HBB*. They represent individual that, even against all odds and the absolute lack of resources, perceive entrepreneurship as positive and create an HBB to offer non-innovative products and services to the market. Configuration 4 has a 17.4% of raw coverage and 0.891 consistency. This is a very symbolic configuration of the Brazilian cultural context and suggests individuals who live by the saying that Brazilians "*never give up*", which means that even with no resources, those individual's will look for even the simplest opportunities to make a living.

4.3. *Sensitivity analysis and robustness checks*

In order to evaluate the validity and reliability of our findings, we performed several robustness checks and sensitivity analysis (Greckhamer, et al., 2018; Skaaning, 2011). First, we examined how the use of alternative calibration thresholds for the dichotomization of causal conditions would influence the overall solution. We were particularly interested in to what degree our solution was sensitive to changes in the entrepreneur's level of education and personal income. Second, we performed sufficiency analysis using both entrepreneurial perceptions and innovation baseline conditions as well as positive entrepreneurial perceptions and innovation higher-order conditions. We wanted to investigate how using the original conditions or the higher-order conditions would affect the model comprehensiveness and

results. Focusing on parsimony, we decided to use higher-order conditions for the analysis and thus also tested different set membership thresholds for positive entrepreneurial perceptions and innovation.

Furthermore, during the minimization process, we followed best practices associated with QCA methodology to test different frequency and consistency thresholds (Greckhamer, Furnari, Fiss, Aguilera, et al., 2018; Schneider & Wagemann, 2010). The goal was to obtain the simplest most comprehensive solution for understanding high and low performance HBBs. Sensitivity and robustness analyses revealed minor changes regarding the kind of neutral permutations depending on the causal condition that was being manipulated. It also affected the number of solutions and sub solutions, but mainly maintaining the interpretation of the results substantively unchanged.

5. Discussion

Prior research has described how individual resources, entrepreneurial perceptions and firm characteristics influences entrepreneurial behavior, intention and ultimately firm performance. Yet despite efforts for understanding their influence, we still know little about how they are combined and coordinated to operate together (Daniel et al, 2014; Fiss, 2011). In our study, we first integrated the extant literature on entrepreneurial resources, entrepreneurial perceptions and HBBs to specify the main conditions that are expected to influence HBBs. We then adopted a configurational approach using crisp set QCA to the entire population of relevant cases aiming to explore configurations of conditions associated with high and non-high performance HBBs. More precisely, we examine how HBBs entrepreneurs managed to achieve high performance through different configurations of four individual level and three firm level conditions: level of education, personal income, gender, positive entrepreneurial perception

(*opportunity alertness, self-efficacy, fear of failure and entrepreneurial role models*), innovation (*newness, competition, technology and export*), use of internet and firm registration.

We first identified three configurations of conditions through which HBBs were able to achieve high performance. The first configuration is *the positive HBB*: HBBs whose entrepreneur is a man with high personal income and positive entrepreneurial perception, but low level of education. The second configuration is the *specialized HBB*: HBBs whose owners are men with high level of education and high personal income that operates a registered business. The third configuration is *the online HBB*: HBBs managed by men with high level of education that runs a registered business to offer non-innovative products or services through the internet.

We then investigated configurations of conditions associated with non-high or low performance HBBs. Although there were five configurations of conditions associated with low HBBs performance, we categorized them in three different types because two of them shared the same individual level configuration (configurations 1 and 5) and two of them shared the same firm level configuration (configurations 2 and 3). The first configuration is *the traditional HBB*: well educated woman with low personal income that run informal businesses. The second configuration is *the survival HBB*: individuals with low personal income that run informal business that does not use the internet and without any positive entrepreneurial perceptions about entrepreneurship. Lastly, the third type is *the naïve HBB*: women with low level of education and low personal income that informally sells or provide non-innovative products and services, but still have positive perceptions about entrepreneurship.

For the first time, our study sheds light on how individual and firm level conditions jointly influence HBBs performance. In this regard, our study identifies _____ key insights that advance theory on causal relationships between individual resources, entrepreneurial

perceptions and HBBs performance (Cooper et al., 1994; Davidsson & Honig, 2003; Mason et al, 2011).

5.1 HBBs configuration and individual characteristics and resources

Extant literature relates gender to HBBs. However, when considering the role gender in HBBs activity, previous studies have often been contradictory. For example, Thompson et al. (2009) suggests women generally have lower levels of entrepreneurial resources and Loscocco & Smith-Hunter (2004) states that women HBBs enjoy less economic success than those running onsite businesses. Women HBBs is also related to lower levels of self-efficacy (Wilson et al, 2007; Diaz-García et al, 2010; Dempsey & Jennings, 2014) and less entrepreneurial experience than men (Wennberg, Park & Autio, 2013). Still, other studies associate gender to HBBs due to women limitations of traditional work arrangements (Walker and Webster, 2004; Wynarczyk and Graham, 2013) and the bearing of family-related responsibilities and childcare (Homes et al., 1997; Rouse & Kitching, 2006; Kirkwood & Toothill, 2008; Walker & Webster, 2004). Meanwhile, Breen (2010) argue that the motivation for undertaking meaningful work is dominant among women entrepreneurs, and Breen & Karanasios (2010) states women HBBs are a legitimate businesses with serious growth intentions.

Although it seems contradictory, Daniel et al (2014: 18) suggests it is mainly due to “confounding of different types of home-based businesses” and encourages researchers to focus on business types. In fact, most previous research based on linear regression modeling or small-N comparative case studies is not appropriate to deal with such level of causal complexity (Fiss, 2007, 2011). In this regard, our study extends theory by using empirical evidence to develop a configurational typology of HBBs. Our findings support research that relates woman HBBs to low level of performance due to low personal income and the absence of entrepreneurial

perceptions (e.g. Loscocco & Smith-Hunter, 2004; Thompson et al., 2009). More specifically, configurations 1 and 5, *the ordinary HBB*, support Loscocco & Smith-Hunter (2004: 164) findings that suggests “home-based ownership may be a good option only for women who do not have strong financial needs”, being characterized by well-educated woman with low personal income. In general, being a woman is a core enough condition for low performance to four out of five configurations, while being a man is enough condition for high performance HBBs.

Regarding financial resources, low personal income is a peripheral condition to all low performance HBBs, which suggests HBBs activities may indeed contribute to marginality (Thompson et al., 2009). However, low performance HBBs can be an important alternative for empowerment and economic inclusion of women, ethnic minorities (Anwar et al, 2017) as well as an instrument for economic development of rural areas (Kantor, 2003) and economic underdeveloped regions (Egbu, Kalu & Eze, 2016; Kantor, 2003). As such, HBBs should be further promoted via appropriate policy channels and support networks as a viable and serious employment opportunity (Wynarczyk & Graham, 2013: 451).

5.2 HBBs configurations and positive entrepreneurial perceptions

Past research has theorized entrepreneurial perceptions to be of central importance to nascent entrepreneurship (Arenius & Minniti, 2005) and firm performance (Miao et al., 2017). Nevertheless, one of the main findings of our study is that entrepreneurial perceptions, such as opportunity alertness, self-efficacy, fear of failure and entrepreneurial role models, are of secondary importance when it comes to high performance HBBs. The positive entrepreneurial perceptions condition was only present and as a peripheral condition in configuration 1, the positive HBB, which is combined with gender (male) and low level of education. For configurations 2 and 3, positive entrepreneurial perception was not important. In this regard,

our findings are consistent with Daniel et al (2014) that relates online HBBs to low levels of self-efficacy.

Another interesting insight about positive entrepreneurial perceptions is that the presence of the condition only occurs in conjunction with low level of education, as the case for the *positive HBB* and *the naïve HBB*. It suggests perceptions can be misleading for HBBs entrepreneurs. These entrepreneurs may perceive positive conditions where there is none, which is the case for low education level individuals and may indicate low experienced individuals and/or experimental approaches (Daniel et al, 2014; Sarasvathy, 2001). In general, our findings show that in the HBBs context, positive entrepreneurial perceptions are not as important as previously suggested for high performance, being only associated with configuration 1, *the ordinary HBB*. Nevertheless, the absence of positive perceptions is causally associated with low performance through configurations 2 and 3, *the survival HBBs*.

5.3 HBBs configurations and firm-level conditions

Our findings show innovation has no causal relationship with HBBs performance. Accordingly, innovation have not been present in any configuration identified in the study. As such, our study suggests HBBs are, in general, not innovative as prior studies have argued (Sayers, 09-10; Sayers, van Gelderen, & Keen, 2008; Wynarczyk & Graham, 2013). On the contrary, the absence of innovation was a core condition for configuration 3 related to high performance HBBs, *the online HBB*, and for configurations 4 and 5 related to low performance HBBs. It is important to note, however, that our findings are limited the to a HBBs sample of the Brazilian context, while prior studies relate to other more developed economies.

Furthermore, contrary to Mason et al (2011) when investigating the UK market, Brazilian HBBs do not extensively rely on the use of internet to sell products and services. Our

findings show that only configuration 3, *the online HBB*, has the use of internet as a core enough condition for high performance. In turn, configurations 1, 2 and 3 of the low performance spectrums show the absence of it as a core condition, which means they do use the internet at all. Even though prior studies have emphasized connectivity (Wynarczyk & Graham, 2013), information and communication technologies (Clark & Douglas, 2010) and online HBBs as a central focus of HBBs research (Anwar & Daniel, 2017; Daniel et al., 2014), our study suggests otherwise. Again, context is very important to understand our findings and the study contributes to the literature to the extent that it brings HBBs back to its physical existence. The findings have implications for policy, in the sense it should consider different types of HBBs to be promoted and developed, especially in developing economies such as African countries, India and Brazil (Egbu, Kalu & Eze, 2016; Kantor, 2003; Salusse & Andreassi, 2017).

Finally, business registration is a core condition for configuration 2 and 3 for high performance and the absence of it, or informality, is a core enough condition for all configurations associated with low performance. Again, despite calls for the promotion and development of HBBs as a legitimate type of business (Mason et al., 2011; Wynarczyk & Graham, 2013), it is important to ensure it is formally integrated in the business context so it can fulfill its social and economic role.

5.1. *Limitations and directions for future research*

Naturally, our findings are subject to the study limitations. As Davidson and Wiklund (2001) noted, entrepreneurship phenomenon is multilevel and thus involve a great variety of concepts associated to the individual, organizational and macro levels of analysis. Accordingly, any study aimed at examining entrepreneurial typologies can only select a limited set of conditions to represent concepts in each of the levels. This study is no exception and we decided to focus on measures related to individual resources and perceptions as well as firm

level attributes. Nevertheless, the conditions selected for this study are theoretically relevant to our research question, and the study is comprehensive in that it includes a representative set of measures in the configurational analysis yet keeping solutions simple by using higher-order conditions for entrepreneurial perceptions and innovation.

In general, we argue that HBBs performance is contextual and relate to macro level conditions such as the country institutions. Institutions are known to directly influence entrepreneurial perceptions as well as indirectly affect the availability of individual resources, such as access to education and availability of financial resources. For example, Brazil is known to have a low general level of education among its citizens and one of the highest interest rates in the world. The country is also known to be very autocratic and to suffer from institutional voids. This might explain some of the study results, specifically regarding informality. Future research should use macro level conditions to explore how they affect configuration of conditions associated with HBBs performance in multiple contexts to better understand the phenomenon.

This research provides and empirical operationalization of HBBs regardless of the stage of the firm lifecycle. As it has been conceptualized, organizational configurations are likely to change depending of the firm's lifecycle. Likewise, individual resources and their perceptions about entrepreneurship are likely to change over time. Still, theoretically our results clearly show the importance of individual and firm level conditions influencing the performance outcome. Future research should explore these insights on different stages of the HBBs lifecycle. Longitudinal research efforts should also be considered to investigate differences and transitions from low to high performance firms so successful paths towards higher levels of performance could be explained.

6. Conclusion

Our study shed light onto causal relationships associated with individual resources, entrepreneurial performance and firm level conditions and therefore allow insights related to the individual-opportunity nexus (Shane & Venkataraman, 2000). We have taken Daniel et al (2014) suggestion on the importance of analyzing different types of HBBs and built on previous research about individual resources, entrepreneurial perceptions and firm conditions to investigate equifinality, conjunctural causation and causal asymmetry associated to high and low performance HBBs (Arenius & Minniti, 2005; De Clercq et al., 2013). Our analysis demonstrates that QCA provides a novel and comprehensive method to understand HBBs, relating individual resources, entrepreneurial perceptions and firm level attributes to high performance and low HBB set membership (Fiss, 2007; Ragin, 1987).

We examined investigated four individual level conditions that represent the entrepreneurs characteristics and resources, and three firm level conditions, identifying three configurations that lead to high performance HBBs and five configurations associated to low performance HBBs. Our findings contribute to the HBBs literature by empirically identifying key conditions that lead to high and non-high performance HBBs. We further explained the interplay of conditions in the HBBs Brazilian context, such as the role of gender and positive entrepreneurial perceptions. We also identified the importance, or the lack of, innovation, use of internet and registration for both high and low performance HBBs.

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Table 1
Crisp set membership calibration

Condition		Fully in (1)	Fully out (0)
Outcome	Y	Annual revenue \leq R\$ 24K	Annual revenue $>$ R\$ 24K
Gender	G	Male	Female
Education	E	Secondary degree	Secondary degree and above
Income	I	Monthly personal income \leq R\$ 2,896.00	Monthly personal income \geq R\$ 2.897,00
Positive Entrepreneurial Perception	PE2	None or one positive perception	Two or more positive perceptions
opportunity alertness	OP	Perceive good opportunities for starting a business in the next six months	Do not perceive good opportunities for starting a business in the next six months
self-efficacy	SE	Believe to have the knowledge, skill and experience	Do not believe to have the knowledge, skill and experience
fear of failure	FF	Fear of failure would not prevent from starting a business	Fear of failure would prevent from starting a business
entrepreneurial role models	RM	Personally know someone who started a business in the past 2 years	Personally do not know someone who started a business in the past 2 years
Innovation	IN1	No innovation characteristic	One or more innovation characteristics
newness	N	All or some potential customers consider product or service new or unfamiliar	No potential customers consider product or service new or unfamiliar
competition	C	Few or no other businesses offering the same product or service	Many other businesses offering the same product or service
technology	T	Technology or process available for less than five years	Technology or process available for more than five years
export	X	At least 11% of customers that normally live outside the country	From none to 10% of customers that normally live outside the country
Use of internet	U	The business use the internet to sell products or services	The business do not use the internet to sell products or services
Registration	R	Business is formally registered	Business is not formally registered

Table 2

Configurations for high performance

<i>Sufficiency analysis</i>		1	2	3
<i>Individual level conditios</i>				
Level of education	E	⊗	●	●
Personal income	I	●	●	
Gender	G	●	●	●
<i>Positive entrepreneurial perception</i>				
opportunity alertness				
self-efficacy	PE2	●		
fear of failure				
entrepreneurial role models				
<i>Firm level conditions</i>				
Innovation focus				
newness	IN1			⊗
competition				
technology				
export				
Use of internet	U			●
Registration	R		●	●
Intermediate solution		$e*I*G*PE2$	$E*I*G*R$	$E*G*inl*U*R$
Parsimonious solution (core)		$e*I$	$I*G*R$	$E*G*inl*U*R$
Consistency		0.889	0.967	1000
Raw Coverage		0.044	0.080	0.019
Unique Coverage		0.028	0.064	0.003
Overall Solution Consistency			0.922	
Overall Solution Coverage			0.130	

Table 3

Configurations for non high performance

<i>Sufficiency analysis</i>		1	2	3	4	5
<i>Individual level conditios</i>						
Level of education	E	●	●		⊗	●
Personal income	I	⊗	⊗	⊗	⊗	⊗
Gender	G	⊗		⊗	⊗	⊗
<i>Positive entrepreneurial perception</i>						
opportunity alertness						
self-efficacy	PE2		⊗	⊗	●	⊗
fear of failure						
entrepreneurial role models						
<i>Firm level conditions</i>						
Innovation focus						
newness	IN1				⊗	⊗
competition						
technology						
export						
Use of internet	U	⊗	⊗	⊗		
Registration	R	⊗	⊗	⊗	⊗	⊗
Intermediate solution		E*i*g*u*r	E*i*pe2*u*r	i*g*inl*u*r	e*i*g*PE2*inl*r	E*i*g*pe2*inl*r
Parsimonious solution (core)		E*g*u*r	E*pe2*u*r	g*inl*u*r	e*g*PE2*inl*r	E*g*pe2*inl*r
Consistency		0.853	0.877	0.871	0.891	0.859
Raw Coverage		0.241	0.144	0.599	0.174	0.138
Unique Coverage		0.014	0.019	0.221	0.012	0.024
Overall Solution Consistency				0.872		
Overall Solution Coverage				0.679		

CHAPTER 3

1. Conclusions

As a whole this thesis navigates the phenomenon of HBBs through three different complementary perspectives. The first study suggests that to further understand the relationship between HBBs and individual, firm and macrolevel variables, it is of central importance to identify and test theoretically grounded variables that influence or are influenced by HBBs activity. The study also identified the lack of HBBs research focusing on less developed economies, where HBBs activity may be of different nature and characteristics. Furthermore, the systematic literature review suggests the use of set-theoretic methods to explore combinations of multilevel conditions that jointly produce an outcome of theoretical and practical interest for HBBs research. As Walker (2003) have noticed, given that most HBBs entrepreneurs are self-employed, individual and firm level cannot be examined in isolation. Besides, some prior research on HBBs have been a-theoretical and mostly descriptive, which limits insights about the phenomenon.

In an exploratory approach to overcome the invisibility of HBBs in Brazil, the second study uses a large database of formal and informal entrepreneurs, the Global Entrepreneurship Monitor (GEM, 2015) report data, to obtain a comprehensive profile of the HBB phenomenon. The study also estimates the economic importance of HBBs and indicates that 37.6% of Brazilian entrepreneurs were home-based, comprising 13% of the adult population. Over 17 million of HBBs entrepreneurs generated 4.5% of the Gross Domestic Product (GDP) and 25 thousand jobs beyond their own, which confirms both social and economic contribution of HBBs in Brazil. Finally, comparative analysis between HBBs and non-HBBs indicate similar rates of demographic characteristics and motivational factors, but a significant a gender difference, with 68.3% of HBBs being owned by woman. The study suggests HBBs in Brazil

is a predominantly women activity that generate less social and economic impact than HBBs from developed economies.

The final study investigates how the entrepreneur's level of education, personal income, gender and perceptions about entrepreneurship, combined with the firm's innovation, use of internet and formal registration, is associated with a high and low HBBs performance. By using csQCA, the study investigated how different combinations of multilevel conditions lead to both the outcome and its negation. Results identified a typology of eight different configurations that suggest that positive entrepreneurial perceptions are of secondary importance for high performance HBBs. The findings also identified the importance, or the lack of, innovation, use of internet and registration for both high and low performance HBBs.

2. Theoretical and practical contributions

The contributions of this thesis are manifold and they are mainly grounded on the entrepreneurship literature. In particular, we build on the entrepreneurial resources theory (see Arenius & Minniti, 2005; Davidson & Honig, 2003; De Clecq et al, 2013) and a myriad of theories that inform perceptual variables such as opportunity alertness (Kirzner, 1973, 1979), self-efficacy (Bandura, 1997, 2006), fear of failure (Cacciotti, Hayton, Mitchell, & Giazitzoglu, 2016) and entrepreneurial role models (Baron, 2000). Additionally, we adopt crisp set qualitative comparative analysis, which allows to elaborate theory based on causal statements regarding whether conditions are necessary and/or enough for an outcome to occur (Ragin, 2000; Fiss, 2011; Schneider & Wagemann, 2012).

To begin with, we contribute to theory by identifying five streams of research associated with HBBs: *family business and work-life balance, gender, HBBs outcomes and socio-economic development, and information and communication technologies*. The study also

synthetizes the nomological network of variables and theories that support expected influence between variables. By the reviewing the literature, the study identifies key theoretical gaps contributes by presenting opportunities for empirical and theoretical advancement of the field.

Second, we were able to identify the proportion of overall businesses that are home-based and estimate the economic importance of HBBs activity in Brazil. This empirical finding is relevant because it is the first evidence of HBBs activity from a developing economy. As such, it allows initial comparison with studies from countries such as Australia, New Zealand, Scotland, United States and United Kingdom (Clark & Douglas, 2014; Mason et al, 2011; Mason and Reuschke, 2015; Walker et al., 2004). In this regard, evidence from Brazil indicate HBBs correspond to 37.6% of GEM surveyed adults but contribute for only 4.4% of the country's Gross Domestic Product (GDP). In addition, our findings support prior research that argues HBBs is a gendered phenomenon (see Loscocco and Smith-Hunter, 2004; Walker and Webster, 2004; Thompson et al, 2009; Wynarczyk and Graham, 2013). In Brazil, 68.3% of woman were running HBBs, while most men (64%) were typically non-HBBs entrepreneurs.

Third, we extend current theory on entrepreneurial resources by investigating sufficiency causal relationships based on causal complexity (Ragin, 2000; Fiss, 2011). The results allow us to elaborate theory about core and peripheral conditions associated with high performance and low performance HBBs. We further contribute to the entrepreneurial resources and perceptions literature, by highlighting the role of gender (male) and secondary role of positive entrepreneurial perceptions for high performance HBBs (see perceptions (Arenius & Minniti, 2005; Thompson et al, 2009; Wynarczyk and Graham, 2013). We demonstrate that high performance HBBs are mostly owned by men with high personal income (Davidsson & Honig, 2003). We also analyzed the relevance, or the lack of, innovation, use of internet and registration for both high and low performance HBBs. Finally, we show that low performance HBB are informal businesses that mainly do not use the internet. Results are

consistent with prior research that suggests positive effect of information and communication technologies (Kapasi & Galloway, 2016; Van Gelderen et al, 2008), innovation (Dakhli & De Clercq, 2004; Sayers, 2010) and registration (Gulyani and Talukdar, 2010) on HBBs performance.

3. Opportunities for future research

As noted in our first study, the systematic literature review, future research should consider broader contexts to examine how HBBs differ depending on the available region or country level resources and institutional context. Such perspective emphasizes the moderating role of institutional context on HBBs emergence and performance (Autio & Acs, 2010; Bowen & De Clercq, 2008), with important implication to contextualize HBBs activity in different regions and countries.

Researchers should also take a closer look at negative effects of HBBs such as the case of failure on the entrepreneur (Shepherd, 2003). We also call for researches to consider whether and how there have been waste or destruction of resources, and what kind of influence does it have on local communities. Understanding the negative effects of HBBs activity for the individual, the firm and society will assist policy makers in determining where to best target HBBs start up support and government funds.

Researchers might want to track HBBs entrepreneurs and resources, perceptions and firm performance throughout time. For example, researchers might investigate whether individual perceptions vary in response to negative experiences and experience accumulation. Future research could also address how macro level changes influence HBBs development paths and the individuals perceptions. For example, researchers might examine the effect of government programs on individuals intentions to become HBBs. As the same time,

longitudinal assessments could provide feedback information about the characteristics of individuals and firms most likely to succeed and thus inform further policy. Therefore, future research should do more to delineate interaction effects between the individual, the firm and the context over time.

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