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The Role of Context in Country Level Entrepreneurial Activity

Naeimah Alkhurafi

A dissertation
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DEDICATION

To my beloved parents, Hayfa and Bader.

Thank you for dedicating your life to our education and for profoundly believing in its value for girls.

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The Role of Context in Entrepreneurship Activity

Naeimah Alkhurafi

Chair of the Supervisory Committee:
Professor Linda F. Edelman,
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ABSTRACT

The purpose of this dissertation is to examine the role of context in entrepreneurship. I intend to shed light on the role of context in facilitating country level entrepreneurial activity through a multi-method approach in this three-paper format dissertation. In paper one, I systematically review two country level measures of entrepreneurship, namely *Total Entrepreneurial Activity* from The Global Entrepreneurship Monitor (GEM) and *New Business Density* from The World Bank Group Entrepreneurship Survey (WBGES), to understand how used in extant literature and investigate the research question: *What are the primary antecedents and outcomes associated with country level entrepreneurship*?

In paper two of this dissertation, I aim to address some of the specific gaps in the literature review by diving deeper to focus on the South American region, and more specifically Chile, Brazil, and Argentina, to examine the direct impact of government policy on the rate of country level entrepreneurial activity and standards of living in this region. I provide an exhaustive fifteen-year empirical analysis of a government program initiative, known as Start-Up Chile, which was incepted in 2010 to boost startup activity and stimulate the Chilean economy. I use institutional theory as a conceptual framework and investigate the research question: *What is the effect of government entrepreneurship accelerator programs on the rate of total entrepreneurial activity and standards of living*

within the country in which they are started, in comparison to other countries which have not adopted the government entrepreneurship accelerator program?

In paper three, I use both measures *Total Entrepreneurial Activity* from The Global Entrepreneurship Monitor (GEM) and *New Business Density* from The World Bank Group Entrepreneurship Survey (WBGES) that were reviewed in paper one, to tests the impact of the institutional, social, business, and spatial context on country level entrepreneurship activity across 78 countries over an eight-year period (2008-2015). I use Welter's four "where" dimensions of the context for entrepreneurship (2011) as a framework to investigate the research question: *What is the effect of the institutional, social, business, and spatial context on overall entrepreneurship, opportunity entrepreneurship, necessity entrepreneurship, and formal entrepreneurship?*

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EXTENDED ABSTRACT

The purpose of this dissertation is to examine the role of context in entrepreneurship. I intend to shed light on the role of context in facilitating country level entrepreneurial activity through a multi-method approach. First, I review the empirical literature which has investigated the antecedents and consequences of country-level entrepreneurial activity using the two most common country level measures of national entrepreneurial activity: *Total Entrepreneurial Activity* from The Global Entrepreneurship Monitor (GEM) and *New Business Density* from The World Bank Group Entrepreneurship Survey (WBGES). These two measures capture the total entrepreneurship activity, or new business startup activity, in each country as a percent of the country population, across a variety of geographic regions globally. In paper one, I review how the two country level measures of entrepreneurship are used in extant literature in order to explore the research question: *What are the primary antecedents and outcomes associated with country level entrepreneurship*? Through a systematic analysis of the extant literature, I identify seven primary themes: institutions, culture, economic growth, individual level characteristics, knowledge and innovation, foreign direct investment, and social networks. I find gaps that are general to all themes, such as a paucity of theoretical frameworks, methodological rigor, regional focus, and publications in high impact journals, as well as gaps that are specific to particular themes, such as the dearth of research examining the impact of new and upcoming government policy on entrepreneurial activity.

In paper two of this dissertation, I aim to address some of the specific gaps in the literature review by diving deeper to focus on the South American region, and more specifically Chile, Brazil, and Argentina, to examine the direct impact of government

policy on the rate of country level entrepreneurial activity and standards of living in this region. I provide an exhaustive fifteen-year analysis of a government program initiative, known as Start-Up Chile, which was incepted in 2010 to boost startup activity and stimulate the Chilean economy. I use institutional theory as a conceptual framework and investigate the research question: *What is the effect of government entrepreneurship accelerator programs on the rate of total entrepreneurial activity and standards of living within the country in which they are started, in comparison to other countries which have not adopted the government entrepreneurship accelerator program?* To my best knowledge, this is the first study that takes advantage of this natural experiment to examine the direct effect of Start-Up Chile on the total entrepreneurship rates at the country level. My study isolates the impact of the government initiative Start-Up Chile, making full use of the natural experiment setting, to empirically assess the outcome of this policy.

In paper three, I follow up the focused empirical study in paper two which concentrates on the Latin America region, with a broad wide-ranging empirical study of context and entrepreneurship activity at the country level. The choice to engage in entrepreneurial activity is shaped through a multiplicity of contexts which vary across different regions and countries around the world. The different contexts in which the entrepreneur is embedded can be either an asset and facilitate new venture creation or a liability and hinder new venture creation. Paper three uses both measures *Total Entrepreneurial Activity* from The Global Entrepreneurship Monitor (GEM) and *New Business Density* from The World Bank Group Entrepreneurship Survey (WBGES) that were reviewed in paper one, to tests the impact of the institutional, social, business, and spatial context on country level entrepreneurship activity across 78 countries over an eight-

year period (2008-2015). I use Welter's four "where" dimensions of the context for entrepreneurship (2011) as a framework to investigate the research question: *What is the effect of the institutional, social, business, and spatial context on overall entrepreneurship, opportunity entrepreneurship, necessity entrepreneurship, and formal entrepreneurship?* I extend the current literature on context and entrepreneurship by testing this the impact of context on different types of entrepreneurship, namely: Total Entrepreneurship Activity, New Entry Business Density, Opportunity Entrepreneurship, and Necessity entrepreneurship. This allows us to understand how the combinative influence of the variety of contexts impact the variety of types of entrepreneurship differently.

This dissertation follows a three-paper format. It is important to note the connections and interactions across the three papers taken together. While all three papers explore entrepreneurship activity at the country level, each paper focuses on a specific aspect of this topic, offering one piece of a puzzle, to understand the multi-variate contexts, precedents, and antecedents of entrepreneurship across the world holistically. In Paper one, I review the literature on the two most prominent country level measures of entrepreneurship which capture the total entrepreneurship activity or new business startup activity in each country as a percent of the country population. I find a number of antecedents and outcomes associated with country level entrepreneurship.

More importantly, the review of the extant literature shed light on a number of gaps and opportunities, especially on the paucity of studies that focus on the impact of new government intervention policy. Furthermore, the review of the extant literature from Paper one demonstrations that most studies have explored only one or two dimensions of context (such as the institutional context, or the social context) on one types of

entrepreneur. However, there are a variety of types of entrepreneurs, each with different needs and outcomes and these entrepreneurs are embedded in a multiplicity of contexts. The impact of these contexts on the different types of entrepreneurs is an area which has not been explored in the literature. This is where one part of the contribution of this dissertation lies.

This dissertation is structured in the following manner. First, it reviews the extant literature on the two most prominent country level measures, overall *Total Entrepreneurial Activity* from The Global Entrepreneurship Monitor (GEM) and *New Business Density* from The World Bank Group Entrepreneurship Survey (WBGES). Second, it uses one of these measures and concentrates to focus narrowly on Latin America, offering a regional exploration the impact of government policy on country level entrepreneurship rates. Third, this dissertation uses both country level measures, and different variations of them such as opportunity or necessity entrepreneurship, to examine the combinative impact of the multiplicity of contexts of the different types of entrepreneurs.

CHAPTER 1

INTRODUCTION

This dissertation is motivated by the role of context in entrepreneurial activity (Welter, 2011). In management literature, context is defined as the "circumstances, conditions, situations, or environments that are external to the respective phenomenon and enable or constrain it" (Welter, 2011). As explained by classical economic theories of entrepreneurship, the role of the entrepreneur emerges due to the inefficiency which arises in the market context, more specifically under conditions of imperfect competition (Knight 1921; Schumpeter 1934). This inefficiency can be caused due to a number of reasons, such as the waste of the firms' resources, or combination of the firms' resources in an ineffective manner to create a final product or service. The role of the entrepreneur emerges as a creative response to this inefficiency in the market context. While significant attention is paid to the individual entrepreneurs who recognize opportunities, and the individual entrepreneur is awarded a heroic status in modern society for their ability to capture market inefficiencies and coordinate them effectively through risk and reward (Aldrich 1994), less attention is paid to the context which gives birth to this opportunity and shapes its existence, and too often, context is "assumed away" (Peng Sun Pinkham 2009).

All around the world, entrepreneurs are faced multiple contexts: the social and ethical at the individual level, the organizational or business at the meso level, and the economic, political, geographic, and institutional at the macro level (Schegloff 1991). Context provides the implicit and important information that is missing when studies investigate an explicit relationship between entrepreneurship and any other variable of interest. It is a critical element both when making practical decisions about real life

implementation of entrepreneurship policy as well as for theory verification and development because it sheds light on whether a theory can be generalized across place and time.

Polanyi (1957) was one the earliest scholars to note the embeddedness of economic activity in the social context. Polanyi's (1944) line of work follows the Austrian School of Economics tradition, arguing that self-regulating markets are never fully autonomous, but rather subordinated to the political and social structures of their contexts. I am especially impassioned by Polanyi's (1957, 1944) argument which examines the conventional definition of economic freedom within market societies from a new perspective, arguing that economic freedom is essentially subordinate to political and social relations defined by government and society. Polanyi's (1957, 1944) early work shed light on a concealed powerful social order underlying economic activity. In his writings, he implies the strong impact that the role of an active government plays in society, and emphasizes the critical importance of these structures in protecting human matters and ensuring a sustainable economy that serves first and foremost the interests of humanity.

Country level entrepreneurship activity can be a catalyst for change by providing innovative solutions to complex global challenges, such as poverty, global warming, and the rising income and social inequality. The creation of successful new ventures create social wealth through new markets and industries, new technology, and new institutional structures and can stimulate economic growth and improve standards of living. The benefits of entrepreneurship not only arise from Silicon Valley, but also from the creativity of local entrepreneurs in Africa, Latin America, and other regions around the world. Linking global and local ecosystems (Manolova Brush Edelman & Welter 2017)

while embracing national culture and identity leverages local knowledge to global challenges.

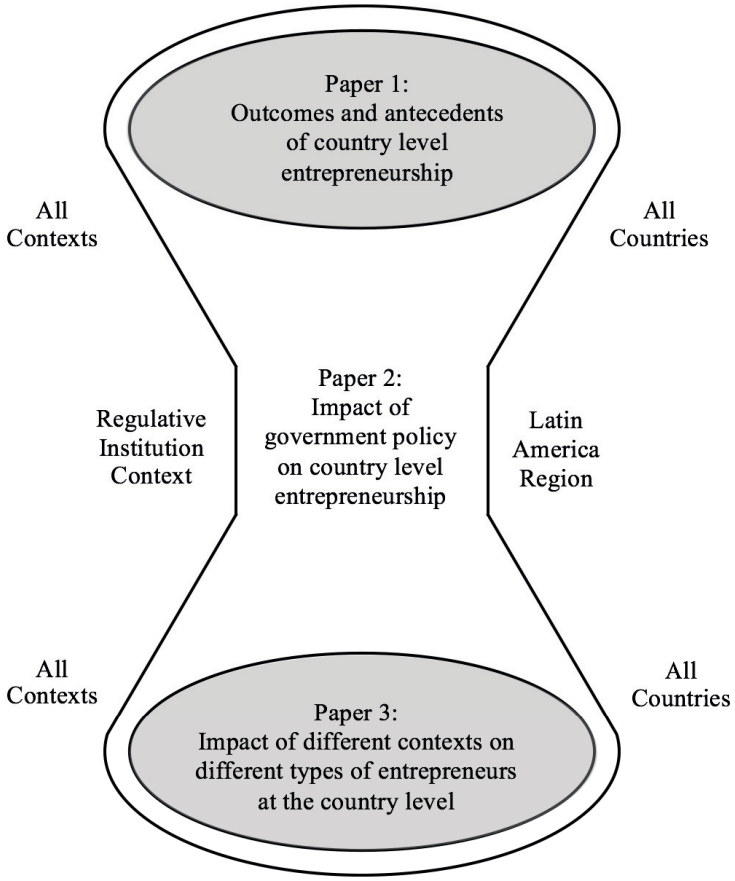
I follow Polanyi's (1957, 1944) line of literature in my dissertation, which asserts that economic activity is essentially embedded in social context, and extend this argument further to focus more specifically on the ways that entrepreneurship is embedded in the institutional and social, business, and spatial context, and in the local environment. In Paper one, I undertake a systematic literature review to examine the primary antecedents and outcomes associated with country level entrepreneurial activity. Studies that are investigated in Paper one are not limited to a certain economy or region of the world, nor are they limited to one specific context. I incorporate studies from all economies and all contexts.

In Paper two, I investigate the causal effect of government entrepreneurship accelerator programs on the rate of total entrepreneurial activity within the country in which they are started, in comparison to other countries which have not adopted the government entrepreneurship accelerator programs, specifically focusing on the Latin America region. In Paper three, I explore the impact of the institutional, social, business, and spatial context on overall entrepreneurship, opportunity entrepreneurship, necessity entrepreneurship, and formal entrepreneurship globally across all economies. As a result, this dissertation takes an hourglass shape, from a broad focus in Paper one to a narrow focus in Paper two to a broad focus again in Paper 3. Figure 1-1 presents the overarching framework of all three papers taken together.

CONTRIBUTIONS

This dissertation makes several contributes to the field of international entrepreneurship literature. First, it contributes by identifying a framework of the antecedents and outcomes of country level entrepreneurship and addresses the main gaps and tensions within each antecedent or outcome advance knowledge in the country level entrepreneurship literature. Having conducted a systematic literature review on country level entrepreneurship, I find a significant number of articles examining the impact of institutions on entrepreneurship activity, but a dearth of studies investigating the role of new government legislation at the country level. There is an opportunity for future research to explore the impact of government policy (Minniti 2008). I also find a paucity of studies with a regional focus, which are necessary to contextualize theory. Second, this dissertation contributes to a better understanding on how regulative institutions, namely government, can facilitate economic activity, specifically entrepreneurship (North, 1991; Scott, 2008; Baumol, 1990; Casson, 1982; Granovetter, 1985; Polanyi, 1957). Under the regulatory institutional umbrella literature, I add to this conversation by addressing the gap in new government legislation, and build on Polanyi's (1957, 1944) social embeddedness of economic activity, to theorize on the role of government in facilitating entrepreneurial activity.

Figure 1- 1: Overarching Framework



Governments have the ability to shape entrepreneurship activity in many ways, through regulation, taxation, education, support for innovation, social nets, amongst a variety of others. In addressing this gap in research examining direct government interventions, I contribute to theory by examining the tension between arguments for and against government intervention in the economic domain.

Some theories argue in favor of government intervention in the economic domain, claiming that government intervention is essential to correct market failure, ensure economic fairness, promote economic growth and prosperity, and maximize social welfare. Other theories argue against government intervention in the economic domain, claiming

that government intervention creates excess bureaucracy and inefficiency, especially when politicians do not have the same incentive to maximize use of limited resources, and that government intervention takes away the personal freedom in individuals' decisions on how to spend and act, which the market is better at determining. In Paper two, I explore this tension by examining the case of a national scale government accelerator program, Start-Up Chile, to investigate the impact of this program on country level entrepreneurial activity.

Third, this dissertation contributes to an understanding of how a multiplicity of contexts, namely institutional context, social context, business context, and spatial impact on entrepreneurial decisions. The contextual environment can be unpacked into regulative institutions (North, 1991; Bonchek & Shepsle, 1996; Scott 1995), normative and cultural institutions (DiMaggio & Powell, 1983, 1991; Meyer & Rowan, 1991; Scott 1995), social-network relations (Granovetter 1985), or geographic spatiality (Johannisson, Ramirez-Pasillas, & Karlsson, 2002). The choice to engage in entrepreneurial activity is shaped through a multiplicity of contexts which vary across different regions and countries around the world.

Although a number papers have examined the impact of one context on entrepreneurship activity, this dissertation is the first to investigate how a multiplicity of contexts at different levels can promote different types of entrepreneurship, namely: Total Entrepreneurship Activity, New Entry Business Density, Opportunity Entrepreneurship, and Necessity entrepreneurship. This contributed to the current knowledge about how the environment shapes the types of participating actors. Investigating the variety and richness of entrepreneurial activity across the world can provide us with a deeper and more nuanced

understanding of the role of context in entrepreneurship activity to answer questions of "how" and "why" entrepreneurship emerges (Welter, 2011). This is not only useful practically for the advancement of developing regions, but also for the development of entrepreneurship theory (Welter, 2011). This dissertation first focuses narrowly on the role of regulative intuitions in entrepreneurship activity in one region and then broadly across all four components of the contextual environment globally across all regions of the world.

Fourth, this dissertation contributes to the contextualization of entrepreneurship theory. Contextualization is part of a developing stream of literature in management research that relates business to the local context. The contextualization of entrepreneurship is concerned with how start-up activity and the native culture relate to one another across space and time. Contextualization seeks to communicate and establish entrepreneurship in ways that makes sense to individuals within the bounds of their local socio-cultural, economic, political, and legal context, presenting new business creation in a way that fulfills individuals' needs and worldview, and allowing them to make the fullest use of entrepreneurship while remaining authentic to themselves within their own context. The importance of contextualization has not always been adequately acknowledged nor addressed.

How does this dissertation contribute to the contextualization of theory? My papers challenge the taken for granted assumptions of the Chicago School and the economic agent, which is still considered as king in economics, business schools, and nationalist policy, especially in the United States. My literature review and two empirical papers show that markets are as much of social/political institutions as they are of economic institutions. Economics do not tell the whole story because relationships profoundly impact exchange.

This has important implications for the distribution of resources and social and income inequality in society. I provide empirical evidence for the argument of government intervention, as opposed to leaving the economy completely to the invisible hand, in the context of Latin America. My findings challenge the current assumptions and expands theory by suggesting that it may be the case that the road for economic development takes different forms across different countries. Not all countries will develop more effectively and efficiently, or even at all, when left to the invisible hand, as neoclassical economics assumes.

The contextualization of entrepreneurship is useful to advance the field in a number of ways. First, it is important to connect the particular with the universal to fully reach truth in knowledge. Second, developing contextualized expressions of entrepreneurship expands the current dominant understanding of entrepreneurship, and allows the dominant expression of entrepreneurship to learn from other contexts how to be more entrepreneurial within its own context. Third, for empirical research to provide successful practical applications of its findings to reach particular sub-regions, contextualization is fundamental.

Fifth, this dissertation contributes by addressing the methodological gap in the literature review. We use on state of the arts methods of applied econometrics in our empirical papers. For paper 2, we use a rich fifteen-year longitudinal dataset and a difference in difference model to isolate the impact of policy and explore an exogenous shock at the country level. This model is unique in the entrepreneurship literature. It has allowed us to produce a study that not only accounts for the different types of endogeneity and isolate the effect more directly, but also to utilize publicly available observational data

to get as close as possible to the golden standard of a randomized controlled experiment. We contribute to the overall field of entrepreneurship by providing this standard of evidence in our research to understand long debated questions surrounding the link between entrepreneurship, economic growth, and government policy. For paper 3, we use a rich eight-year panel dataset and a fixed effects regression. Both of these models allow us to control for unobservable across time and country, to observe change over time, and to more accurately determine the direction of causality.

Sixth, this dissertation contributes to public policy and entrepreneurial practice, by assisting in the mission to advance developing regions. More specifically, it contributes practically by addressing the advancement of an emerging region, Latin American, rough revitalizing the economies within that region through entrepreneurship and improving the standards of living. The idea of advancing developing regions around the world is not a relatively new concept, as it was addressed by the UK Parliament in 1929 by the passage of new laws towards foreign aid and by US government in 1948 through the adoption of the Marshall plan. International organizations such as the IMF and World Bank were founded based on promoting shared global prosperity and academic research has been used to aid in shaping international aid policies.

CHAPTER 2

COUNTRY-LEVEL ENTREPRENEURIAL ACTIVITY: A CRITICAL REVIEW AND RESEARCH AGENDA

ABSTRACT:

Over the past twenty years, there have been two main initiatives to measure entrepreneurship activity across the world, one by Babson College (USA) and London Business School (UK) and another by the World Bank. These initiatives have resulted in country level measures of entrepreneurship for over one hundred countries, providing researchers with internationally comparable empirical data to examine the multi-varied dimensions of entrepreneurial activity at the country level. The purpose of this paper is to systematically review the literature on the two most common measures of country level entrepreneurship, *Total Entrepreneurial Activity* from The Global Entrepreneurship Monitor (GEM) and *New Business Entry Density Rate* from The World Bank Group Entrepreneurship Survey (WBGES), to understand the antecedents and outcomes of country level entrepreneurship. We find seven main themes, some of which are antecedents, some of which are outcomes, and some of which are both: institutions, culture, economic growth, knowledge and innovation, social networks, foreign direct investment, and individual level characteristics. These elements are found to be important in explaining entrepreneurship activity across a wide variety of economies and contexts, illustrating that some elements of entrepreneurship transcend boarders. From organizing the seven key themes that emerge from the literature, we explain specific gaps and opportunities for future research within each element as well as across all seven. Our systematic literature review not only provides insights on the antecedents and outcomes of country level entrepreneurship, but informs the international entrepreneurship literature on key avenues forward in theory and methodology.

INTRODUCTION

While the field of entrepreneurship has developed and gained much attention at the individual and firm level, scholarship in entrepreneurial activity at the national level remains quite limited (Baker Gedajlovic and Lubatkin 2005; Engelen Heinemann & Brettel 2009). With the inception of large databases that capture country level entrepreneurship activity across the globe, it has become apparent that significant differences in the rate of entrepreneurship exist across countries. However, the cause of the variation in the rate of entrepreneurship across countries remains contestable amongst researchers. Some researchers attribute this to formal regulatory institutions (Verheul Stel & Thurik 2006; Thebaud 2015; Bowen & Clercq 2008; Ho & Wong 2006; Levie & Autio 2008; Urbano & Alvarez 2014; Stenholm Acs & Wuebker 2013; Acs Desai & Hessels 2008; Thai & Turkina 2014; Estrin & Mickiewicz 2011; De Clercq Lim & Oh 2014; Stephen Urbano Hemmen 2009), while others attribute this difference to informal cultural institutions (Stephan & Uhlaner 2010; Cullen Johnson & Parboteeah 2014; Tominc & Rebernik 2007; Dheer 2017), or individual level characteristics, such as individual resources and skill (Cetindamar Karadeniz & Egrican 2012; Mickiewicz Nyakudya Theodorakopoulos & Hart 2017; Bergmann & Sternberg 2007; Klyver & Schenkel 2013). The question of what explains the variations in the rate of entrepreneurship across the world is of critical importance because entrepreneurial activity has long been associated with innovation and economic growth (Schumpeter, 1934). Entrepreneurs' innovations not only add to national income, but also create conditions of a prosperous society, through generating new wealth, facilitating the development of new markets, increasing employment, and improving the overall standard of living.

Although cross-national variation in entrepreneurship activity is evident, there is a paucity of research examining the antecedents and outcomes of country level entrepreneurship activity. In 1999 researchers at Babson College (USA) and London Business School (UK) launched the Global Entrepreneurship Monitor (GEM) Consortium annual surveys (Reynolds *et. al.* 2005) to examine the multi varied dimensions of national entrepreneurial activity and provide researchers with internationally comparable empirical data. GEM has been credited with developing the fledgling subfield of cross-national research on entrepreneurial activity. In 2006, seven years after the inception of GEM, The World Bank launched The Entrepreneurship Database. Similar to GEM, The World Bank Group Entrepreneurship Survey (WBGES) offers cross country data on new business registration in 143 countries. The main indicator measure in this database is known as New Business Entry Density (NBED), which measures the number of newly registered firms with limited liability per 1,000 working-age people (ages 15-64) per year. While GEM surveys provide a wide array of measures, the most common single index which reports have largely relied on is known as Total Entrepreneurial Activity (TEA), which measures the percentage of the population aged 18-64 who are either a nascent entrepreneur or owner-manager of a new business.

The purpose of this paper is to systematically review the literature on the antecedents and outcomes of country level entrepreneurship using the two most common measures of country level entrepreneurship, *Total Entrepreneurial Activity* from The Global Entrepreneurship Monitor (GEM) and *New Business Entry Density Rate* from The World Bank Group Entrepreneurship Survey (WBGES). I begin by defining *Total Entrepreneurial Activity* and *New Business Entry Density Rate* and describing their main

components in the first section. I aim to answer the research question: *what are the primary antecedents and outcomes that are associated with country level entrepreneurship activity?* In the second section, I identify the methodology used in this paper. In the third section, I outline the findings, which are the seven key themes that have shown to be precedents or antecedents of country level entrepreneurial activity, and expand on the tensions and gaps within each theme. I then provide a discussion of the gaps found within each theme and across all themes, and suggest opportunities for future research in the fourth section. Finally, I close with the conclusion in section five.

This literature review makes several important contributions. First, the present study is the first comprehensive review to specifically examine the main antecedents and outcomes of country level entrepreneurship using the two indexes, *Total Entrepreneurial Activity* and *New Business Density.* Recent literature reviews (Reynolds *et. al.* 2005; Vaillant & Lafuente 2007; Acs, Desai, & Klapper 2008; Alvarez Urbano Amorós 2014; Reynolds et. al. 2005; Terjesen Hessels Li 2013; Bergmann & Stephan 2013; Marcotte 2013; Alvarez Urbano Amorós 2014) have been undertaken to evaluate GEM variables, or to propose a new measure of entrepreneurship beyond the current measures, or to classify articles according to individual, firm and country level, or to quantitatively analyze entrepreneurship measures through correlation and clustering. However, to the best of my knowledge, none of the previous literature reviews have undertaken a specific and focused analysis on country level measures *Total Entrepreneurial Activity* and *New Business Density* to examine the main antecedents and outcomes of country level entrepreneurship activity.

Second, this study contributes by providing a synthesis of the literature, through organizing the variables used, research questions examined, methods and theory applied on the topic of country level entrepreneurship. Third, this study contributes by finding seven themes, emerging from the literature, and offers a critical evaluation and comparative analysis of the themes found to identify the gaps, tensions, and areas for future research. None of the previous literature reviews have undertaken a specific and focused analysis on country level measures *Total Entrepreneurial Activity* and *New Business Density* to specifically to examine the main antecedents and outcomes of country level entrepreneurship activity. While GEM reports provide a yearly review with statistical averages of main GEM measures across the different countries, this paper provides a comprehensive review how these measures have been used in the literature over a fifteen-year period in high impact journals. This builds on the annual GEM reports, going on step further by classifying the empirical findings of studies that have used both GEM measures of entrepreneurship activity and WB measures of entrepreneurship activity since 2005, to understand the precedents and antecedents of country level entrepreneurship activity.

First, this is important because understanding the *antecedents* of entrepreneurship is of crucial importance to prescribing the appropriate policy recommendations and allocating resources effectively towards the promotion of new business creation. In order to promote entrepreneurship and gain the benefits of its outcomes, it is important to unpack its antecedents and understand them fully. Second, this is a important because understanding the *outcomes* of entrepreneurship allows us to know whether innovation, economic growth, and employment, do in fact stem from new business creation. If those outcomes are in fact a result of entrepreneurship, this will give nations a solid foundation

to move towards recognizing, rewarding, and facilitating new business creation in their own contexts. Innovation and economic growth not only add to national wealth, but also creates social change, and often advances communities beyond one entrepreneurs own venture. For example, the development of the automatic, low-cost, flow-based pump in a water-scarce region or the creation of the smartphone have both had a profound and long lasting impact worldwide.

DEFINING COUNTRY LEVEL ENTREPRENEURSHIP MEASURES

Locating country level measures in the context of Entrepreneurship definitions and firm birth boundary

There are many different definitions of entrepreneurship in the literature (Shumpeter 1934; Kirzer 1979; Gartner, 1985) and a variety of ways to classify new firm birth (Gartner, 1985; Katz and Gartner, 1988; Reynolds and Miller, 1992). Schumpeterian scholars define entrepreneurship narrowly as a specific occupation, transforming ideas to innovation, relating to creative destruction. Scholars in the Kirznerain (1979) tradition, on the other hand, define entrepreneurship as a pursuit of opportunity (Kirzner 1979; Kirzner 1997; Kirzner 1999). Gartner (1985) defines entrepreneurship more broadly as *the creation of new ventures*, claiming that the definition of "new ventures needs to be more comprehensive than it is at present" to encompass the variety of types and not limit the definition to only the entrepreneur who pursues an opportunity in the market or the entrepreneur who creates a new product. While there is no single universally accepted definition of entrepreneurship, both country level indexes studied in this paper, Total Entrepreneurial Activity by GEM and New Business Entry Density Rate by WBGES, follow Gartner's (1985) definition of entrepreneurship.

The next step in defining country level entrepreneurship indexes is concerned with determining at which stage firms are born. Many new firms come into existence every day, nevertheless, deciding at which phase of the gestation-birth process firms do come to exist remains a contestable area in the literature. The point in time at which a firm is born can be based on an "intention to create a business (e.g. having the idea, search for information), boundary-type definitions (e.g. registration, opening, business cards), resource-based definitions (e.g. housing, personnel, inventory) and definitions motivated by exchanges (e.g. first customer, first cash flow) provide an overview of perceived start-up moments" (Reynolds *et. al.* 2005). For example, in the US Panel Study of Entrepreneurial Dynamics (PSED) project, revenue, specifically defined as "positive monthly cash flow covering all expenses and salaries including those of the owners for more than 3 months" was used to determine firm birth.

The Total Entrepreneurial Activity Index

When measuring Total Entrepreneurial Activity in the GEM project, firm birth was defined as the "payment of any salaries and wages for more than three months to anybody, including the owners," allowing a slightly looser and wider measure to manage the complexity of cross-national harmonization. It's important to note that the index Total Entrepreneurial Activity does not only count firms after their birth event. Instead, this index incorporates *both nascent entrepreneurs*, the stage directly before the birth of a new firm (only 3 months), and *owners-managers of young firms*, the stage directly after the new firm birth (3 months to 3.5 years). Taken together, these two measures are combined to create the Total Entrepreneurial Activity index. GEM defines entrepreneurship in this

manner for both practical and theoretical reasons. Practical reasons include having a "clear economic interpretation" and being "relatively straightforward to apply across a range of different countries and economic sectors in a harmonized fashion" (Reynolds *et. al.* 2005). Furthermore, GEM defines entrepreneurship through these two specific stages, as "firm birth transition," in order to capture the entire entrepreneurial process because GEM acknowledges firm creation as an organic process which starts before the inception of an actual firm as a legal entity. Figure 2-1 presents the composition of Total Entrepreneurial Activity.

Insert Figure 2-1 about here

The Total Entrepreneurial Activity index is more of a measure of firm transition rather than strictly a measure of firm birth event. Table 2-1 presents the different stages of entrepreneurship and their definitions according to GEM. In the table below, I unpacked the Total Entrepreneurial Activity index and its components, according to *time* and the *payment of salaries*, to define the index, its different individual components, and illustrate its boundaries with respect to period (before 3 months and 3 months to 42 months) and salaries (not paid and paid). It is important to note that the Total Entrepreneurial Activity index can also be defined according to the motivation of the entrepreneur. Entrepreneurial activity can be divided with respect to whether entrepreneurs are motivated to engage in new business creation to take advantage of an opportunity (TEA Opportunity) or whether they are motivated to engage in new business creation because of a lack of employment (TEA Necessity). TEA Opportunity is a subdivision of TEA that measures the number of opportunity-pulled entrepreneurs, based on their perception of good opportunities,

prevalence knowledge, skills and experience to develop those opportunities, and availability of informal investment, following Kirzner (1979) scholarship. TEA Necessity, on the other hand, measures the number of necessity-pushed entrepreneurs, or those entrepreneurs who engage in new business creation as a last resort career option, due to a lack of other work opportunities. The overall Total Entrepreneurial Activity index combines both types of entrepreneur motivations.

Insert Table 2-1 about here

In addition to differentiating entrepreneurs with respect to motivation, the Total Entrepreneurial Activity index makes other notable distinctions in entrepreneurial activity. It distinguishes the rate of startups according to impact, industry, age, or gender, putting forth a variety of sub-measures of TEA, such as TEA male, TEA female, TEA high job creation, TEA innovation, and TEA business service sector, amongst others. By doing so, through the Total Entrepreneurial Activity index alone, the GEM project provides an opportunity for researchers to focus on a particular subset of new small businesses for a more specific and richer comparative analysis around the world.

The New Business Entry Density Rate Index

Similar to GEM, the World Bank Group Entrepreneurship Database was created to measure entrepreneurial activity across countries over time facilitating cross national comparisons, and to examine the relationship between new business creation, economic growth, and the environment. The database provides annual data on the number of newly registered firms. The variable New Business Entry Density, defined as the number of

newly registered firms with limited liability per 1,000 working-age people (ages 15-64) per calendar year, is the main indicator in the World Bank Group Entrepreneurship Survey (WBGES). Both GEM and The World Bank define entrepreneurship as new business creation and operation of a young business. This follows entrepreneurship literature that defines entrepreneurship in terms of venture creation (Gartner, 1990). While the Total Entrepreneurial Activity index defines firm birth boundary with respect to time period and salary payment, New Business Entry Density defines firm birth boundary according to firm registration with the national business registries.

In limited cases where national business registries are unavailable or not capable of providing this information, other government sources such as statistical agencies, tax and labor agencies, chambers of commerce, and private vendors or publicly available data were relied on to measure the number of new registered firms every year. The New Business Entry Density measure includes all private, formal sector firms with limited liability, regardless of size. Partnerships and sole proprietorships are not included due to discrepancies in their definitions and regulations across countries. Although the laws for registering a business differ across the world, all countries have a "legal entity" that requires that "any business with a legal entity or corporate personhood separate from its owners must be duly registered" (Klapper Amit & Guillén 2010). The key element in determining more specifically what constitutes a firm birth or boundary in this case depends on which businesses are obliged to register by country. This is determined by "the definition of what constitutes a separate legal entity in a given country" (Klapper Amit & Guillén 2010).

Differences in registration quality across countries is not only due to differences in definitions, but can also occur due to weak enforcement mechanisms. Generally, the requirements at the time of new business registration include identifying shareholders and managing directors, industrial activity, proof of taxes and fees payments, and proof of business regulation compliance. Annual requirements include financial reports and changes in employment. Although these requirements may not significantly vary cross nationally, countries may lack the necessary enforcement mechanisms to ensure compliance with business filing, reporting, and overall regulations. Table 2-2 presents a comparison of the two measures Total Entrepreneurship Activity (TEA) from GEM and the start-up rates measured by New Business Entry Density (NBED) from the World Bank Entrepreneurship Group data (WBGES). It is important to note that Total Entrepreneurial Activity by GEM captures both formal and informal entrepreneurial activity and grounds new venture creation in the market, rather than the country's legal system, whereas NBED from WBGES captures only formal entrepreneurial activity, grounding their measure in the country's legal system, and not the market (Acs Desai Klapper 2008). As a result, GEM reports higher levels of early stage entrepreneurship in developing economies, while WBGES reports higher levels of entrepreneurship for developed countries.

Insert Table 2-2 about here

METHODOLOGY

To conduct this literature review, I followed Tranfield, Denyer, & Smart (2003) systematic review process. "A comprehensive, unbiased search is one of the fundamental

differences between a traditional narrative review and a systematic review" (Tranfield, Denyer, & Smart, 2003). Tranfield, Denyer, & Smart (2003) provide a three stage systematic review methodology for management literature, originally adopted from review methods in medical sciences. The three stages of the review process include: planning the review, conducting the review, and reporting and dissemination. I followed these three stages, and the details provided by Tranfield, Denyer, & Smart (2003) to guide the review process on approaching each stage.

I developed a protocol plan that explicitly describes the steps taken to generate the articles in order to protect objectivity and explicitly state the procedures that will be undertaken a priori. I planned to include all articles that incorporate either of the two country level measures, TEA and NBED, as a main part of their study, with the intention to investigate all factors which directly impact national entrepreneurship activity. I arrived at the research question: *what are the primary antecedents and outcomes that are associated with country level entrepreneurship activity?* By the end of the literature review, I found seven main factors.

The review covers all studies in high impact journals, with the exception that they use any of the two country level indexes as a main element in their study. The search covered years 2005-2017. This time period was determined according to the availability of the first articles that incorporated any of the two country level measures, especially since GEM and WBGES are relatively new databases, incepted in 1999 and 2006 respectively.

I followed Tranfield, Denyer, & Smart (2003) guide to the next stage of the literature review by beginning the systematic search with the identification of keywords and search terms, from the literature and discussions within the review team. I searched

"Total Entrepreneurial Activity" or "TEA opportunity" or "TEA necessity" or "TEA nascent" or "TEA male" or "TEA female" or "New Business Entry Density" "Business Entry Density" "Entry Density" or "WBGES". The keywords are meant to capture the different variations of the Total Entrepreneurial Activity index. In the case of the New Business Entry Density index, the database name "WBGES" is also used as a search term for articles. I reported these steps in detail to ensure replicability. I used the databases ProQuest, Business Source Premier, JSTOR, Elsevier ScienceDirect, and Web of Science to search the keywords specified above.

To control for quality, I only included studies which are in grade 3 and 4 journals as specified by the 2015 Chartered Association of Business Schools' (CABS) Academic Journal Guide (AJG). These include: *Small Business Economics, Journal of Management, Entrepreneurship: Theory and Practice, Entrepreneurship & Regional Development, Administrative Science Quarterly, Journal of International Business Studies, Journal of Business Research, Journal of Business Venturing, International Business Review, Journal of International Business Studies, and Journal of Small Business Management.* I looked through the articles which are generated by the search terms from databases specified with the keywords in either the title, abstract, or overall text content, and only use those articles which incorporate one of the country level indexes as a main variable or focus in their study. I did not include studies which merely cite "Total Entrepreneurial Activity" or "Business Entry Density" in their content of text. Rather, I strictly incorporated the articles that actually apply one of the country level measures as a variable to examine their study. This resulted in a total of 60 articles.

For the third stage of the literature review, I read and synthesized the research papers garnered according to authors, journal, research question, variables, methods, data, and findings. I recorded this information in a spread sheet and manually mapped articles into different categories to arrive at the main themes. The main themes are generated according to the main factors which are found in the literature to be associated with country level entrepreneurship. First, I produced a brief outline describing and defining the two country level measures and locating them within the entrepreneurship existing literature prior to providing the main analysis. Second, I produced a two stage finding analysis, first to provide a descriptive analysis of the articles, and second to provide a thematic analysis, or the key emerging themes in the articles reviewed.

FINDINGS

Descriptive Analysis

Of the 60 articles reviewed, 86.7% used the index TEA from GEM, 8.3% used the index New Business Entry Density from WBGES, and five percent use both TEA and New Business Entry Density in their content. Figure 2-2 presents A breakdown of the percentage of articles using each country level index. I expected TEA to be more widely used in the literature for several reasons. First, TEA by GEM is the first measure of its kind, and it was developed seven years earlier than NBED by WBGES, offering 18 years of data. In addition, it provides a variety of different sub types of entrepreneurship measures for scholars interested in testing a subset of entrepreneurs to focus in detail. Second, GEM was founded by Babson College, an international leader in entrepreneurship with a network of entrepreneurship experts. It partners with a variety of universities and research centers such as London Business School (UK), International

Development Research Centre (IDRC) and International Council for Small Business (ICSB). This has helped GEM gain attention among scholars. In addition, because the country level variables are empirical measure of new business activity, I presume that most of the articles that incorporate them as a main component in their study would be quantitative studies. From the review, 90% of the articles were quantitative studies while 10% were literature reviews in international entrepreneurship. Table 2-3 presents a summary of the six literature reviews.

Insert Table 2-3 about here

Insert Figure 2-2 about here

Most of the articles were published in Small Business Economics (33), followed by Entrepreneurship & Regional Development (6), Entrepreneurship: Theory and Practice (5), Journal of Business Venturing (4), Journal of International Business Studies (3), Journal of Business Research (3), International Business Review (2), Journal of Management (2), Administrative Science Quarterly (1), and Journal of Small Business Management (1). All of the articles were published between 2005 and 2017, relatively evenly distributed between the thirteen year period examined, with the most being published in years 2008 (13.3% or 8 articles), 2014 (13.3% or 8 articles) and 2013 (11.7% or 7 articles). Figure 2-3 and figure 2-4 present the number of articles published by year and by journal, respectively.

Insert Figure 2-3 about here

Insert Figure 2-4 about here

Furthermore, of the 60 articles examined, I classify the top authors by the number of articles published in the context of this literature review. The authors who published the most are Dirk De Clercq (8.3%) and Zoltan J. Acs (8.3%), followed by Erkko Autio (5%), José Ernesto Amorós (5%), André van Stel (5%), Saul Estrin (5%), Jolanda Hessels (5%), Sameeksha Desai (5%), David Urbano (5%), Ute Stephan (5%), and Tomas Mickiewicz (5%). Table 2-4 presents the top ten authors. To analyze the impact of the studies used in this literature review, I use the number of total citations. I classify the top 15 articles accordingly in Table 2-5. The top five most cited articles are Reynolds *et. al*. (2005) with 1439 citations, Stel, Carree, Thurik (2005) with 1034; Wong, Ho, & Autio (2005) with 1102; Acs, Desai, & Hessels (2008) with 629; and Acs & Varga (2005) with 591.

Insert Table 2-4 about here

Insert Table 2-5 about here

Thematic Analysis

Top seven themes found to be associated with country level entrepreneurship

From 60 articles in 10 journals reviewed, results indicate that there are seven major themes explored at the country level: institutions, culture, economic growth, knowledge and innovation, social networks, foreign direct investment, individual level characteristics, and corruption. Table 2-6 presents all the articles reviewed, the main emerging themes, theories, methods, and authors for each theme. I find that the majority of the articles that

use one of the country level indexes TEA or NBED as a main variable in their study fall within the institution category, more specifically supporting the impact of the different types of institutions on entrepreneurial activity. This is followed by studies exploring the effect of culture on entrepreneurship.

Insert Table 2-6 about here

It is important to note that a small number of the articles classified into the seven categories below can be organized into more than that one category. For example, Estrin, Mickiewicz, & Stephan (2013) investigate the impact of social networks and regulative institutions on country level entrepreneurial activity. Cullen, Johnson & Parboteeah (2014) examine the impact of institutional variables, including income distribution, education, and GDP, as well as the impact of GLOBE national culture variables, including assertiveness, individualism, and performance orientation, on country level opportunity entrepreneurship. The authors use theory from both institutional and culture literature to support their study (Cullen, Johnson & Parboteeah, 2014). These articles blur the boundaries between the categories and can be classified into either of two. However, these studies make up less than 8% of the total literature reviewed. For the purpose of this literature review, I incorporate them under one category. Figure 2-5 presents the top seven themes emerging from the literature review.

Insert Figure 2-5 about here

Entrepreneurship Activity and Institutions

Of the seven major outcomes and antecedents found to be associated with country level entrepreneurship activity, the largest number of studies are focused on examining the impact of institutions on entrepreneurial activity. The studies investigated in this literature review use a wide range of constructs to capture institutions. Some studies measure institutions through macroeconomic indicators, such as GDP growth, per income capita, or unemployment (Thai Thanh, & Turkina 2014; Verheul Stel & Thurik 2006; McMullen Bagby and Palich 2008). Other studies measure institutional quality through gender equality policies (Verheul Stel & Thurik 2006; Estrin & Mickiewicz 2011; Thai & Turkina 2014; Thebaud 2015), technological progress (Verheul Stel & Thurik 2006; Stenholm Acs and Wuebker 2013; Arin Huang Minniti Nandialath & Reich 2015), cultural beliefs (Levie & Autio 2008; Stenholm Acs and Wuebker 2013; De Clercq Lim & Oh 2014; Thai & Turkina 2014; Urbano & Alvarez 2014), governance structure (Bowen & De Clercq 2008; Levie & Autio 2008; McMullen Bagby and Palich 2008; Angulo-Guerrero Pérez-Moreno, & Abad-Guerrero 2017), or the availability of finance (Verheul Stel & Thurik 2006; Ho & Wong 2006; Bowen & De Clercq 2008; Stenholm Acs and Wuebker 2013; Urbano & Alvarez 2014). The guiding theory in this theme is institutional theory, however, some studies combine this with gender theory, rational choice theory, urbanization and agglomeration theory, and transaction economics theory. Figure 2-6 presents the variables used in each construct in a word cloud. Table 2-7 presents the research questions, theory, method, and main findings of the articles in this theme.

Insert Figure 2-6 about here

Insert Table 2-7 about here

I find a number of gaps and tensions that are specific to this theme. While there is agreement amongst scholars that institutions do in fact matter, and are noteworthy of significant attention in the facilitation of entrepreneurial activity at the country level, there is less consensus as to what empirically constitutes as institutions. I find that there are a wide range of constructs used to represent institutions in the literature. Arin et al. (2015) use administrative complexity, globalization, taxes, and inflation to represent the higher-level country institutional environment, and examine the impact of these elements, as well as population, education, employment, GDP, and financial and technological progress, on the rate of total entrepreneurial activity. On the other hand, Thébaud (2015) uses gender policies to represent institutions, specifically to investigate the impact of paid leave for mothers, subsidized childcare, and part time employment, of the rate of startup activity for female and male entrepreneurs.

Angulo-Guerrero et. al. (2017) and McMullen et. al. (2008) use economic liberalization to represent the institutional environment, while Verheul et. al. (2006) adds a psychological element, life satisfaction, to capture the institutional context. Although institutions may be defined broadly, to include regulative, normative, and cognitive dimensions (Scott 1995, 2008), it is less apparent as to which institutions matter most. In order to predict entrepreneurial activity at the country level, authors in this field need to develop more consensus around what constitutes the institutional environment and validate this construct through the replication of studies. This leads to a deeper understanding of the institutional environment and can improve the practical implications for governments seeking to promote entrepreneurship in their own economy.

Another gap found in the literature of this theme is specific to the regulative branch. Studies that examine the institutional regulative environment explore a particular structure in the context that is a result of an accumulation of the country's governance choices over a long period of time, such as educational progress, technological development, and gender policies. However, none of the studies that explore the effects of institutional regulations examine the impact new and upcoming economic policies on startup activity. Structural changes at the country level, such as improving levels of education or the role of women, entail longer periods of time and require more substantial resources and efforts to renovate, especially when rooted in a country's history and belief system. This does not negate the need for improving such institutions, but, if policymakers are seeking to focus on facilitating entrepreneurship in a more efficient and shorter period of time, examining smaller and more recent regulative policy decisions that do not require the rebuilding of an entire national framework may be beneficial. Studies fulfilling the gap in government policy can utilize Minniti's (2008) pre-existing framework in "The role of Government Policy on Entrepreneurial Activity" as a base for their examination of the regulative institutional environment.

Entrepreneurship Activity and Culture

Although not as common as institutions, another one of the other seven major factors found to impact country level entrepreneurship activity which has received a lot of attention in the literature is culture (Chua, & Neupert 2006; Tominc & Rebernik 2007; Baughn, Stephan & Uhlaner 2010; Pinillos & Reyes 2011; Valdez and Richardson 2013; Cullen, Johnson & Parboteeah 2014; Liñán & Fernandez-Serrano, 2014; Coduras, Aragon-

Mendoza, Raposo, & Roig-Dobón 2016; Clemente, & Ruiz 2016; Dheer 2017). In the literature examining the relationship between of culture and entrepreneurship, only four types of cultural surveys are used: Hofstede cultural dimensions, Schwartz Value Survey, Global Leadership and Organizational Behavior Effectiveness, and the Global Entrepreneurship Monitor. Within these surveys, the variables that have been used to measure cultural beliefs and norms are individualism and collectivism by Hofstede cultural dimensions (Dheer 2017; Pinillos & Reyes 2011); embeddedness versus autonomy, hierarchy versus egalitarianism, and mastery versus harmony by the Schwartz Value Survey (Liñán & Fernandez-Serrano 2014); socially supportive culture, performance based culture, assertiveness, individualism, and collectivism by the Global Leadership and Organizational Behavior Effectiveness (Cullen Johnson & Parboteeah 2014; Stephan & Uhlaner 2010); and the presence of opportunities and skills, abilities and experience, absence of fear of failure, knowing recent entrepreneurs, media coverage for entrepreneurship and a good choice of career associated with entrepreneurship by GEM (Baughn, Chua, & Neupert 2006; Valdez and Richardson 2013; Aragon-Mendoza, Raposo, & Roig-Dobón 2016; Coduras, Clemente, & Ruiz 2016). The guiding theories in this theme is the normative branch of institutional theory, specifically following Scott (2008). Some authors ground their study in theories about culture from Durkheim (1897), Bourdieu (1991), Hofstede (1980; 2001), and Schwartz (2004). Table 2-8 presents the research question, theory, method, and findings for the culture theme.

Insert Table 2-8 about here

I find a number of gaps that are specific to this theme. First, because there is no significant variance in culture within the same context year by year, the evidence of the

impact culture on entrepreneurial activity is limited to association. When there is only little or no heterogeneity over time in culture throughout the same country, hypothesis testing cannot account for time invariant effects or unobservable factors which vary from one year to another. Thus, this type of limitation in the current datasets which aim to quantify regional culture through a handful of behavioral characteristics restrict the extent of findings and the amount of confidence that can be placed in the models. Due to this type of limitation in this specific theme, I suggest the use of multi-method approach, where a significant association found is followed up by a qualitative investigation of the existence of yearly trends.

Another gap found that is specific to this theme is the absence of studies which examine the impact of culture distinctly on male and female entrepreneurs. The implicit assumption in this category of literature is that culture impacts both genders similarly. Although there has been a plethora of research highlighting the ways in which culture and cognitive scripts impact the role of women and men in society, none of the studies in this theme explain how the trajectory of female entrepreneurs may be shaped differently through cultural and normative beliefs. In addition, similar to the lack of studies which explore the role culture in gender career choices, there is a gap in the type of entrepreneurship that is being examined. The studies in this literature only examine overall TEA, without exploring the possibility of whether culture and normative beliefs are more likely to encourage necessity entrepreneurship in a particular industry (e.g. services) or opportunity and high growth entrepreneurs. These types of questions are especially relevant to this theme and have not been explored in the current literature.

Entrepreneurship Activity and Economic Growth

In the previous two themes found in the literature, institutions and culture, total entrepreneurship activity was used as a dependent variable. The previous studies examined the impact of either institutions or culture on entrepreneurial activity. In contrast, some articles in this theme examine the impact of economic growth on entrepreneurship, while others examine the impact of entrepreneurship on economic growth, alternating between dependent and independent variable. The direction of causality in this theme is still debated.

Fifty-seven percent of the articles in this theme suggest entrepreneurship impacts economic growth (Wong Ho & Autio 2005; Naude´ Amorós Cristi 2014; González-Pernía & Iñaki Peña 2015; Bruns Bosma Sanders & Schramm 2017), while twenty-nine percent of the articles suggest economic growth impacts the rate of entrepreneurial activity (Stel Carree & Thurik 2005; Acs & Amorós 2008). One article in this theme examines both directions of causality through several models, interchanging between entrepreneurship and economic growth within the same study (Bahmani Galindo & Méndez 2012). Figure 2-7 illustrates the studies in this theme which use entrepreneurial activity as an outcome measure and the studies in this theme use entrepreneurial activity as an antecedent in more detail. Outcome and antecedent measures of total entrepreneurial activity are grouped for clarity. It is important to note that a number of studies in this theme use OLS regression as their method of analysis, which does not account for reverse causality, as shown in Table 2-9.

Economic growth is captured by GDP growth (Wong Ho & Autio 2005; Stel, Carree & Thurik 2005; Bruns Bosma Sanders & Schramm 2017), GDP per capita (Acs & Amorós

2008), real GDP (González-Pernía & Iñaki Peña 2015), employment (Wong Ho & Autio 2005), global competitive index (Stel, Carree & Thurik 2005; Acs & Amorós 2008), per capita income (Stel, Carree & Thurik 2005), and happiness (Naude´ Amorós Cristi 2014). All measures of economic growth were gathered from the World Bank, International Monetary Fund, Market Information Database, with the exception of happiness, which was obtained from World Database on Happiness and the Gallup World Poll.

Insert Figure 2-7 about here

Insert Table 2-9 about here

A number of tensions which occur in this theme are related to type of entrepreneurship activity and the type of economy. Some studies show that only specific types of entrepreneurship, such as opportunity and high growth entrepreneurship, impact national economic growth. Other studies find a significant impact of the total entrepreneurship activity, which incorporates all types new ventures regardless of motivation, on national economic growth. This tension is further intensified by the type of economy, emerging or developed, in which the study examines. Stel, Caree, & Thurik (2005) find that entrepreneurship plays a different role in countries at different stages of economic development, more specifically having a higher impact on GDP growth in countries with higher per capita income.

The most prominent gap in this theme is the paucity of theoretical underpinning to support the empirical link between new small businesses and economic growth. The studies in this literature reference other articles in the field of economics and business

which finds a relationship between these two variables, however, they do not ground their study in a theoretical framework, such as classical or neoclassical economic theory, Ricardian economic theory, Keynesian economic theory, or endogenous growth theory, amongst others. This significant gap in theoretical underpinning is specific to economic growth studies. It leads to difficulty in fully understanding how and why the increase in total entrepreneurial activity is more likely to spur national economic growth, and restricts the identification of factors that could predict it as well as the development of strategies accordingly.

Another gap in this theme of literature is bringing to attention and methodologically addressing the matter of endogeneity. Although endogeneity can occur in a variety of studies, the reason this is more critical in this theme of the literature is because the variable economic growth in particular is commonly argued to be a result of endogenous, rather than external, forces. There is tension between this view and neoclassical growth theory, which argues that external factors, such as technological progress, innovation, and knowledge are the main sources of growth. Some of the current literature in this theme treats entrepreneurship and innovation as external forces that impact economic growth, without accounting for the possibility of reverse causality in their models (Wong Ho & Autio 2005; Bahmani Galindo & Méndez 2012; Stel Carree & Thurik 2005). From the review of this theme in the literature, I find that it is more critical for studies examining economic growth to address this methodological gap.

Entrepreneurship Activity and Knowledge and Innovation

A theme receiving less attention in the country level entrepreneurship literature is knowledge and innovation (Acs & Varga 2005; Anokhin & Wincent 2012; González-Pernía Peña-Legazkue & Vendrell-Herrero 2012; Stam 2013). Although a large body of research exists on innovation and knowledge spillover, its relationship with entrepreneurial activity at the country level has not been as fully developed. There is tension in this theme of literature between the use of entrepreneurship activity and knowledge-innovation as either dependent or independent variables, suggesting that they are endogenous. Some studies examine the impact of entrepreneurship activity on knowledge and innovation, specifically through R&D expenditures and patents (Acs & Varga 2005; Anokhin & Wincent 2012). Other studies explore the effect of innovation and knowledge on entrepreneurship activity (Stam 2013) or the coupled effect of entrepreneurship activity and innovation and knowledge on economic growth (González-Pernía Peña-Legazkue & Vendrell-Herrero 2012). The guiding theory in this theme is knowledge spillover theory and spatial proximity or agglomeration. Table 2-10 presents the research question, theory, method, and findings for the knowledge and innovation theme.

Insert Table 2-10 about here

This tension brings to light a similar challenge to that faced in the economic growth theme, where the direction of empirical evidence found in the literature is not adequately addressed in the analysis and validated. Therefore, I note this methodological gap in the theme of knowledge and innovation. In addition, most studies examined in this theme capture knowledge and innovation through R&D expenditure and patents. However, a thirteen-year study by Strategy& from PriceWaterhouseCoopers analyzing the top 1000 global innovative enterprises shows that the top innovative enterprises are rarely the ones

with the highest expenditure on R&D. In the light of this evidence, I suggest the importance of investigating other variables, to incorporate along with R&D expenditure and patents, such as operationalization costs of innovation, in order to include the ability of making new technologies work and preparing them as products for the market. This may be one of a number of key variable that is important in capturing innovation that is not represented in this theme of the literature.

Entrepreneurship Activity and Individual Level Characteristics

Similar to the knowledge and innovation theme, only a small number of studies that use TEA and NBED have focused on exploring the link between individual level characteristics and national level entrepreneurship activity (Bergmann & Sternberg 2007; Cetindamar Karadeniz & Egrican 2012; Klyver & Schenkel 2013; Mickiewicz Nyakudya Theodorakopoulos & Hart 2017). In these studies, individual level characteristics were measured by entrepreneurs' education level, income, family size, employment status, knowledge and skills, entrepreneurship experience, self-efficacy, and network of business owners or angels. One distinctive characteristic about articles in the category is that they examine only one specific country or region, with the exception of Klyver & Schenkel (2013). For example, Mickiewicz Nyakudya Theodorakopoulos & Hart (2017) investigate the impact of individual level characteristics on entrepreneurship activity in Turkey. Bergmann & Sternberg (2007) explore the relationship between individual level characteristics and entrepreneurship activity in Germany. Mickiewicz Nyakudya Theodorakopoulos & Hart (2017) examine the individual level characteristics of a specific region in the U.K., the East Midland, which is a mix between rural and urban areas that

have been known to be resilient to recessions. The guiding theories in this theme are human capital theory, social capital theory, and the resource based perspective. Table 2-11 presents the research question, theory, method, and findings for the individual level characteristics theme.

Insert Table 2-11 about here

It is important to note that one study in this theme examines a new microeconomic government policy in Germany and its impact on startup rates (Bergmann & Sternberg 2007). The authors run two separate logistic regressions, one before the policy for one year, 2001, and one after the policy for two years 2003-2004. In their study, Bergmann & Sternberg (2007) intended to investigate whether this government policy affected individuals' characteristics and actions towards venturing. One common factor in this theme is the period used to examine the link between individual level characteristics and entrepreneurial activity. All the studies use one to three years of data. Besides the paucity of studies examining this link, one gap that is specific to this theme is the exploration of the link between individual level characteristics and entrepreneurial activity over difference economies.

Cetindamar Karadeniz & Egrican (2012) explore this link only in Turkey, Mickiewicz Nyakudya Theodorakopoulos & Hart (2017) investigate this in Midland regions of the U.K., and Bergmann & Sternberg (2007) explore this in Germany. Thus, 75% of the studies in this theme only examine one country. There is room for exploiting the country level entrepreneurial activity measures reviewed in this study, to explore whether this link can be generalized across economies. For example, while human capital, financial capital, and family capital have a positive association with startup activity in

developed economies, can the same be claimed for emerging economies? For the generalization of the impact of individual level characteristics, more studies that exploit country level data to examine similarities and differences across economies are required.

Entrepreneurship Activity and Foreign Direct Investment

One of the least explored themes in this literature review examines the impact of foreign direct investment on country level entrepreneurship activity (De Clercq Hessels & Stel 2008; Kim & Li 2014; Danakol Estrin Reynolds & Weitzel 2017). Only 5% of the articles in this literature review fall into this theme. To capture FDI, studies use inward and outward FDI (De Clercq Hessels & Stel 2008), which refers to the "percentage of a country's inward or outward flow of foreign capital relative to its gross fixed capital formation," or FDI cross border (Danakol Estrin Reynolds & Weitzel 2017), which refers to the "annual cross border M&A inflow at the target country level." The tension in this theme rests in the argument of whether FDI has an overall positive or negative impact. Some studies show that FDI has an overall positive spillover effect, either towards new ventures decisions to go global (De Clercq Hessels & Stel 2008) or towards the likeliness for the country to generate more new firms (Kim & Li 2014). Other studies show the relationship between FDI and entrepreneurship to be negative, and to be pronounced more distinctly in developed than emerging economies (Danakol Estrin Reynolds & Weitzel 2017). I note a paucity of studies in the theme, and suggest more research in this area is required to come to consensus about the impact of FDI on entrepreneurship activity, and to examine other unexplored areas of FDI such as the mediation of the political system, culture distance, or social networks in FDI and entrepreneurial activity. This theme does

not have significant variety in theory. The guiding theory in this theme knowledge spillover theory and agglomeration theory. Table 2-12 presents the research question, theory, method, and findings for the foreign direct investment theme.

Insert Table 2-12 about here

Entrepreneurship Activity and Social Networks

Another lesser explored theme in the literature is social networks. Although the impact of social capital on entrepreneurship activity is an area which has been widely explored in the general entrepreneurship literature (Aldrich & Moody 2000; Aldrich & Martinez 2001; Davidsson & Honig 2003; Greve & Salaff 2003; Manolova Carter Manev & Gyoshev 2007; Manolova Eunni & Gyoshev 2008; Stam & Elfring 2008; Edelman, Brush, Manolova & Greene 2010), only a small number of studies have used country level measures TEA or NBED to investigate this phenomena (Danis De Clercq & Petricevic 2011; De Clerq Danis & Dakhli 2010). Within this literature review, only 3% of the articles examine social capital, making it the least explored theme. All of the studies in this theme rely on the same measure of social capital known as associational activity from the World Values Survey (De Clerq Danis & Dakhli 2010; Danis De Clercq & Petricevic 2011).

The guiding theory in this theme social capital or social network theory. One common element across the articles in the theme is the development of a distinction between emerging and developing economies in the sample, to explore whether the impact of social capital varies according to level of development. Similar to the previous theme, I find a paucity of studies in the theme, and suggest that more studies, especially using different measures of social capital, are necessary to understand the impact of social capital

on entrepreneurial activity. Table 2-13 presents the research question, theory, method, and findings for the social networks theme.

Insert Table 2-13 about here

Contextual Analysis

Country Level Entrepreneurship Activity and Context

In addition to the descriptive and thematic analysis above, this review classifies the literature according to the four dimensions of context for entrepreneurship, namely: the institutional context, the social context, the business context, and the spatial context (Welter, 2011). The contextual analysis offers an overall insight of the amount of extant research which has covered each context by country level measure, total entrepreneurship activity and new business entry density, and the two main subcomponents of total entrepreneurship activity, opportunity TEA and Necessity TEA. Table 2-14 presents the findings for context by country level measure.

Insert Table 2-14 about here

Synthesis

By combining the different emerging themes, namely institutions, culture, economic growth, foreign direct investment, knowledge and innovation, social networks, and individual level characteristics, we form a theory of country level entrepreneurship. The theory suggests that entrepreneurship is also a social rather than purely an economic activity, which is a result not only of the individual efforts or

characteristics of the entrepreneur, but also from macro level structures surrounding the entrepreneur. Macro level structures include governance systems, cultural values, the level of knowledge and innovation in a region, or national economic wealth and growth. To accurately portray the precedents of country level entrepreneurship, it is important to account for both the individual agent as well as the overall structure in which the agent is embedded in to be considered in research. Research which links entrepreneurship activity only to individual strategy while assuming the environment away does not provide the complete picture.

By combining the different emerging contexts, namely the institutional, social, business, and spatial, we find that all four contexts are important determinants in explaining country level entrepreneurship activity. Although the majority of the research in this literature review has focused on the institutional context, the social, business, and spatial contexts have also been shown to be significant determinants. More generally, the emerging themes and emerging contexts contribute to the debate of structure versus agency in shaping individual decision, especially in understanding the way in which entrepreneurs' act as free agents and the way in which entrepreneurs' decisions are dictated by social structure. This debate is still relevant today, both in classical and contemporary sociology and economics.

Durkheim (1972) structural functionalism, at one end of the spectrum, emphasizes how social structure constraints individual action, through both regulations, norms, or economic transactions. At the other end of the spectrum, individualism (Stigler, 1971; Becker, 2013) emphasizes how individual action is constrained through market price and income. Bourdieu (1972; 1979) and Giddens (1991) reconcile both of these perspectives

in their theorization of the relationship between agency and structure. This is stressed in Bourdieu's (1972; 1979) conceptualization of habits, field, and capital and in Giddens (1984) duality of structure. The emerging themes presented in our findings reconcile both agency and structure, presenting a holistic view of entrepreneurship in research.

DISCUSSION

The analysis above from this systematic literature review finds seven primary antecedents and outcomes associated with country level entrepreneurship: *institutions, culture, economic growth, knowledge and innovation, individual level characteristics, foreign direct investment, and social networks*. More specifically, the analysis finds institutions, culture, individual level characteristics, foreign direct investment, and social networks to be antecedents to country level entrepreneurship. Two themes, economic growth, knowledge and innovation, are found to be both antecedents and outcomes to country level entrepreneurship. The following propositions are developed from reviewing the country level entrepreneurship literature:

These findings illustrate the various ways in which the two most prominent country level entrepreneurship measures have been used in the literature, and the links between different aspects in the context and entrepreneurial activity. Although there is a growing body of literature in this area, there are also substantial gaps. By categorizing the articles into main themes, I find some gaps that are specific to certain themes, while others are more general to the overall country level entrepreneurship literature. Figure 2-8 presents the themes, the specific gaps found within the themes, and the overall gaps in country level

entrepreneurship. I provide a range of recommendations for the advancement of this literature.

Insert Figure 2-8 about here

Specific Gaps, Opportunities, and Future Research

There are a number of gaps that are specific to each theme. Within the institutions theme, I find a dearth of studies which examine institutional systems with a specific regional focus. This is not only useful for the development of a global entrepreneurship index, but also for advancement of theory in this field, by shedding light on concepts that are region specific and concepts are not bounded by boarders. Furthermore, in this theme, I find no articles which explore the role of government policy in startup activity, despite a call for addressing this type of research question in 2008 (Minniti 2008). I also find a wide variety of measures used to capture institutions, with conflicting findings around the impact of these different measures for institutions. There is an opportunity to have more studies around these measures to validate and further understand which of these empirically are most robust.

Within the culture theme, I find slight variance in the data of regional culture measures over time, which leads to limited empirical model choices and findings. There is an opportunity to bolster findings through multimethod studies, specifically noting existence of yearly trends. Furthermore, I find a gap in the studies utilizing male and female entrepreneurship measures to examine the impact of culture on startup activity by gender. This is most critical to this theme, as the influence of culture on the role of women and men in society has long been noted by the general psychology, sociology, and business

literature. In addition, I find scarcity in the amount of studies that examine the role of culture on the different types of entrepreneurship, such as opportunity entrepreneurship, necessity entrepreneurship, or high growth entrepreneurship. There is an opportunity to investigate these areas further.

Within both the economic growth and the knowledge and innovation theme, I find a methodological gap that is critical to studies in this category. In these themes, the direction of causation is still very much debated. A significant number of studies in these themes use models that do not properly capture causation, and correct for the selection bias and reverse causality which may occur when endogenous variables are examined. There is an opportunity for future studies to account for this methodological gap. Furthermore, I find a lack of diversity in measures of innovation in the knowledge and innovation theme, and a lack of studies rooted in theory in the economic growth theme. There is an opportunity for future research to address these gaps.

Within the individual level characteristics theme, I find that most studies only examine one country. There is an opportunity for scholars to exploit the country level measures of entrepreneurial activity reviewed and investigate the impact of individual level characteristics across a range of economies. Furthermore, I find a paucity of studies examining the foreign direct investment and social networks theme despite their importance for practice and policy. Only 5% of the studies reviewed examine foreign direct investment, and 3% examine social networks. There is an opportunity for future research to examine these themes further.

General Gaps, Opportunities, and Future Research

Theory

The highest number of articles in this review fall under the institution theme. Despite accounting for over 30% of the review, the articles in this category all share the same theoretical underpinnings: institutional theory. In this review, institutions are used as a wide overarching umbrella encompassing a variety of concepts such as a nation's macroeconomic environment, a nation's technological progress, a nation's governance quality, and a nation's supply of financial debt. Although North's (1991) "rules of the game" can conceptually include many empirical concepts and variables, there is room for the development of new lenses from international business, public policy, political economy, sociology, economics, psychology, and anthropology.

Aside from these two themes, institutions and culture, which roughly consist of 50% of the articles reviewed, the other 50% were studies grounded in knowledge spillover theory from two different themes, FDI and knowledge and innovation, studies grounded in social network theory from the social network theme, and studied grounded in the resource based view, human capital, and social capital theory, from the individual characteristics theme. Again, this illustrates the lack of theoretical diversity in this field. I expect that institutional theory has been the most common framework used in the literature, as opposed to knowledge spillover theory, social network theory, the resource based view, or the other less studied phenomena's for a number of reasons.

First, institutions as a concept is wide and overarching to include a number of variety of different constructs. This broadness has allowed authors to attach range of empirical ideas to it. Second, measures of entrepreneurial activity TEA and NBED are at the macro level, as with institutions, while characteristics such as personal income and

financial resources, employment status, knowledge & skill, and social capital are at the micro level. This alignment in unit of analysis between some theories, such as institutional theory, and country level measures of entrepreneurship may explain the reason behind why certain theories in this literature review are used more than others. Third, in addition to the from their difference in unit of analysis, I expect that social networks or knowledge spillover may less likely be used in this literature because their intangible nature makes them harder concepts to capture through empirical data. There was only one data source used for social network association activity (WVS) and only two types of measures of innovation used (R&D expenditure and patents). This limitation may have hindered their ability to be empirically verified, and thus less well understood and common as a theoretical framework.

Methodology

In addition to theory, this systematic review shed light of the lack of methodological diversity in country level entrepreneurship literature. Although different types of regressions were used to test, these methods are not robust to capture unobserved systematic differences across countries, unobserved systematic differences across time, or account some form of endogeneity such as reverse causality. Only 8% of the articles account for any form of endogeneity. In addition, despite over 10 years of data available for TEA and NBED, the majority of the articles do not take advantage of this extended period to fully utilize the panel data set, but rather employ either cross sectional or 2-3 years of data to test their research question. I attribute the lack panel data studies to the limitation of quantitative data available at the macro-level to analyze alongside the two

country level measures of entrepreneurship, especially in emerging economies. Cross national data is more scarce and expensive to gather, especially in emerging regions with developing institutions.

I attribute the lack of focus on overall methodological rigor to the nature of academic research in the field of management. Management research been subjected to critique for relevance and rigor for several decades (Pfeffer & Fong, 2002). Although management is an applied discipline, management scholars tend to focus on examining concepts, rather than their applicability to business organizations (Pfeffer & Fong, 2002; Vermeulen, 2005). In addition to being removed from the world of practice, the field of management has not developed in methodological rigor similar to other scientific disciplines, and thus has increasingly been subjected to rigor tests by skeptics. This has been a theme of discussion and debate in management research for several decades, and has led to several movements aiming to achieve more rigor in management research (Gulati, 2007). Improvements in empirical rigor can be most useful in dealing with endogenous research questions, such as economic growth and entrepreneurship, or knowledge and innovation and entrepreneurship. Generalizability can be claimed with greater confidence when findings are validated by different and more rigorous empirical methods, while showing evidence for the same phenomena.

Regional Focus

In addition to theory and methodology, I find a paucity in studies with a regional focus. Regional focus research can assist in understanding the geographic spatiality of knowledge, economic growth, culture, institutions, and their relationship to venturing. In-

depth knowledge in the centrality of countries within regions provides deeper and more nuanced comprehension of global entrepreneurship, economic geography and concentration. Examining the variety and richness of different regions contributes both theoretically and empirically, in understanding how and why some countries serve as nodes in regional development to contextualize theory and in providing an opportunity for shaping economic and social policy in developing nations. A regional focus can especially be useful for the contextualization of entrepreneurship theory and practically for empirical research to provide successful applied applications of its findings to reach particular sub-regions.

High impact journals

I also find that a paucity of articles that use either indexes TEA or NBED published in the top journals. I notice this pattern not only exists in entrepreneurship focused journals, but in the overall general business including management, marketing, economics, finance, ethics, public policy and international business journals. My findings are consistent with Alvarez, Urbano, and Amorós (2014) which show a dearth of overall GEM data in journals that are regarded as top notch by the academic community. Alvarez, Urbano, and Amorós (2014) suggest that this can be explained by the evolution of the GEM project, which consists of a number of international teams with only a few having networks in North America and Europe and background knowledge of publishing in top journals. In addition, I expect that the paucity of studies published in top quality journals can also be attributed to the limitation of advancing of new global entrepreneurship theory from the types of

questions asked using these country level measures of entrepreneurship and attributed to the types of methodological concerns addressed earlier.

CONCLUSION

In conclusion, from a thorough examination of the two most common macro level measures of entrepreneurship, *Total Entrepreneurial Activity* and *New Business Density,* this systematic literature review has found seven main antecedents and outcomes to country level entrepreneurial activity: institutions, culture, economic growth, knowledge and innovation, individual level characteristics, foreign direct investment, and social networks. Within these seven themes, I bring to attention a number of gaps and opportunities for future research. Some of these gaps are specific to a certain theme, and others are more wide-ranging across the general literature. I identify a number of important issues for the direction of future research.

First, my review of the literature reveals that there is a dearth of theoretical and methodological diversity. I provide suggestions to integrate theories from different disciplines and increase both the number and quality of empirical methods for the advancement of this field.

Second, this review illustrates a death of studies with a regional focus. Detailed knowledge of the centrality of countries within regions provides a deeper understanding of global entrepreneurship and contributes both to aspects of theory building and more practical aspects of shaping policy in developing regions.

Third, this review shows that while there is an increasing number of articles published in country level entrepreneurship, these still exists a paucity in the number of overall articles which use the country level entrepreneurship indexes TEA and NBED top

quality journals. Finally, this review illustrates that most articles fall under the institutional theme, leaving a significant number of other topics unexplored. I suggest that country level entrepreneurship activity studies investigate these other categories further. Some areas for future research which emerge from the gaps within themes include the role of government policy in entrepreneurship, the impact of culture on men's and women's decisions to venture, the causality of entrepreneurship and economic growth, cross national studies in individual level characteristics, consensus over the positive or negative FDI spillovers, and applying new measures to capture social capital and innovation.

Although country level entrepreneurship research has expanded rapidly in the past two decades, this area is still at its infancy. I suggest directions for future research to examine ways in which unanswered questions could be better tested with different methods. First, questions that address the relationship between entrepreneurship and economic growth or knowledge spillover suffer from at least one form of endogeneity, reverse causality. While the field of management as a whole, including entrepreneurship, has long been subjected to critique for relevance and rigor (Pfeffer & Fong, 2002), it is even more critical for these types of questions to be addressed using methods that account for endogeneity. The question as to whether entrepreneurship leads to increased rates of economic growth, or whether economic growth leads to increased rates of entrepreneurship is still highly debatable, with no consensus and studies claiming significance at both sides of the debate. The same can be said about studies that examine the link between entrepreneurship and knowledge spillover.

Second, regulatory institutions, cultural institutions, and social networks are themes that are best understood through the use of both qualitative and quantitative methods. The

main disadvantage in quantitative research is that context is often ignored, offering no information on contextual factors to interpret results or explain variations. While multi-method studies can be useful to enriching most themes, it is more critical to understand the complexity and richness of context which is often simplified, compressed and assumed away in quantitative methods, through qualitative methods. A qualitative analysis of context can offset the weaknesses in quantitative studies and aid in producing a more specific, direct, and context-relevant application of knowledge. I suggest that questions examining institutions or social capital employ diverse methods. Combining both GEM or WBGES quantitative country level measures of entrepreneurship with micro level interview or survey data can provide a more complete picture. This is especially essential to understanding the impact of macro-level policy on individual entrepreneurs at the micro level. Offering rich descriptions of the context of policy can answer questions such as why some country level policies, such as government intervention programs, are more successful in one type of economy over another. This not only adds rigor, but also relevancy and applicability in creating country specific insight. Furthermore, it sheds light on the nature of the individual entrepreneurs' mind and captures the story at the heart of policy.

Figures and Tables

Total entrepreneurial Activity	The percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business

Nascent Entrepreneurs	The percentage of 18-64 population who are who have taken steps to start a new business but have not yet paid salaries or wages for more than three months
New Business Owner-managers	The percentage of 18-64 population who have paid salaries and wages for more than 3 months and less than 3.5 years
Established Firms	The percentage of 18-64 population who are business owners and have paid salaries and wages for more than 3.5 years

Table 2-1: Defining total entrepreneurship activity and its components

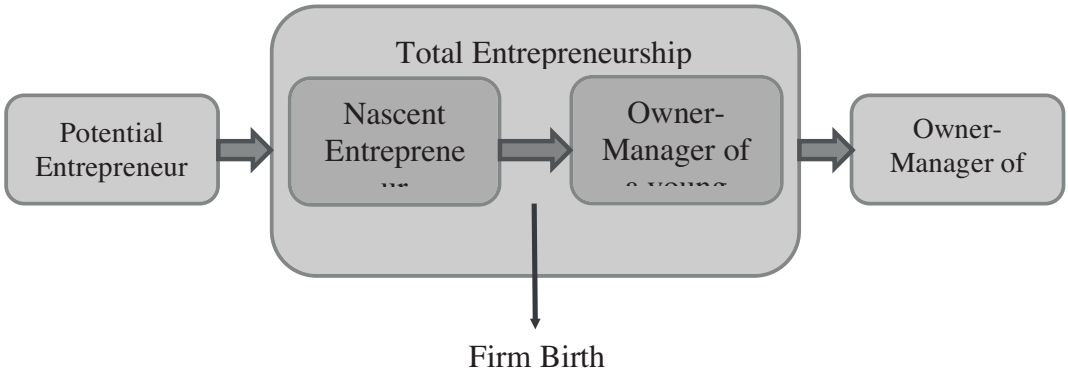


Figure 2-1: Defining total entrepreneurship activity as a measure of firm transition

	Total Entrepreneurial Activity	**New Business Entry Density**
Sources	GEM	WBGES
Theoretical Underpinning	Firm creation as a transition process	Firm creation as definite point in time

Measure	Nascent entrepreneurs + owner-manager of young firms	Formally registered new businesses
Grounds Firm Creation in	The market	The legal system
Developed Economy	Reports lower rates	Reports higher rates
Emerging Economy	Reports higher rates	Reports lower rates

Table 2-2: Comparing and contrasting the two measures of country level entrepreneurship Total Entrepreneurship Activity (TEA) from GEM and New Business Entry Density (NBED) from the World Bank Entrepreneurship Group data (WBGES)

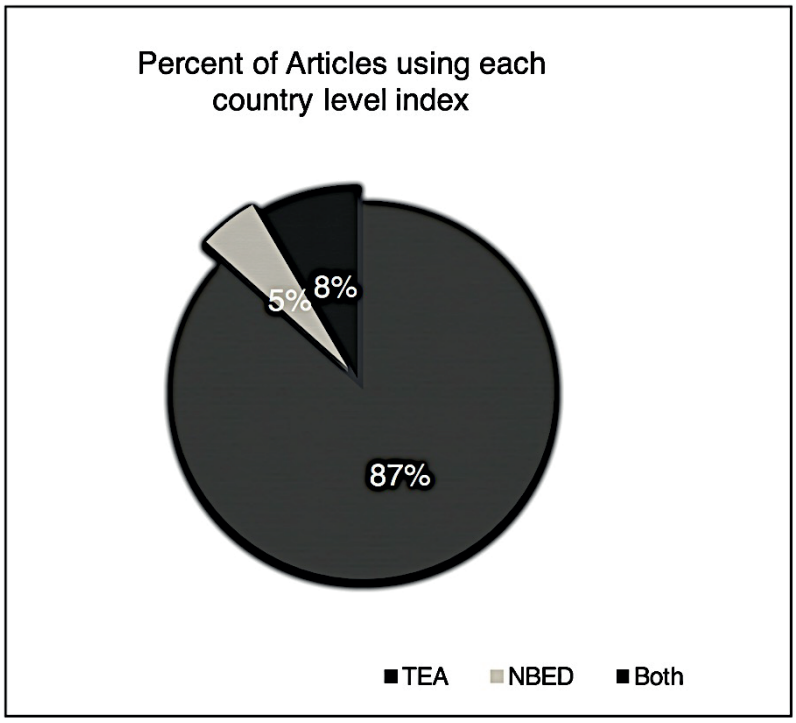


Figure 2-2: A breakdown of the percentage of articles using each country level index Total Entrepreneurship Activity (TEA) from GEM and New Business Entry Density (NBED) from the World Bank Entrepreneurship Group data (WBGES)

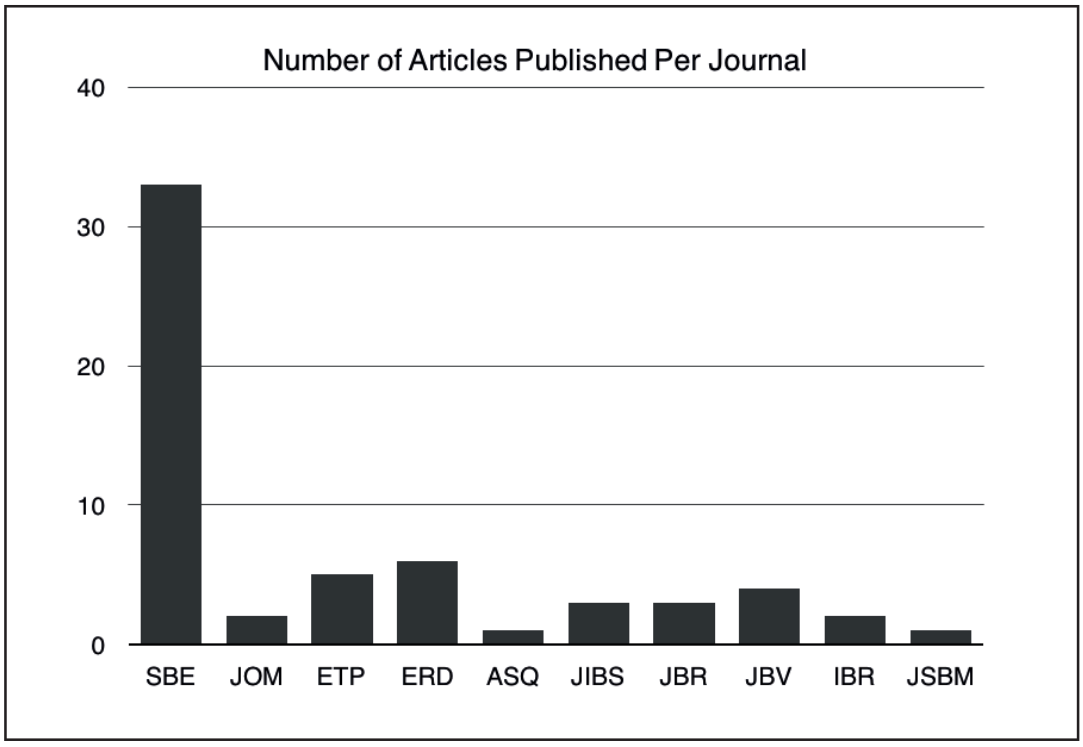


Figure 2-3: The number of articles published by journal

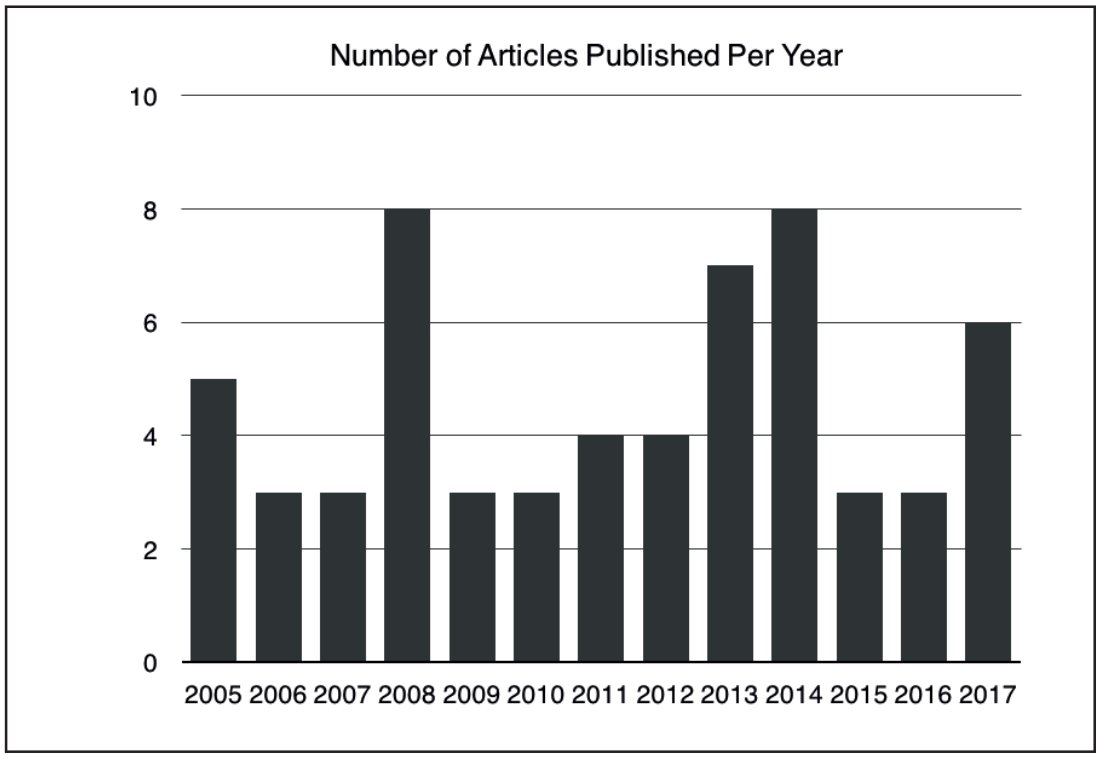


Figure 2-4: The number of articles published by year

Country Level Entrepreneurial Activity Literature Reviews				
Author	**Year**	**Journal**	**Purpose**	**Summary of Findings**
Paul Reynolds Niels Bosma Erkko Autio Steve Hunt Natalie De Bono Isabel Servais Paloma Lopez-Garcia Nancy Chin	2005	Small Business Economics	This literature review provides an overview of GEM Data and explains the main different measures of entrepreneurial activity in GEM, how the data was collected in the Adult Population Survey for GEM, the National contexts, and the standardization and harmonization techniques used.	This paper offers descriptive overview of the different measures of entrepreneurial activity used and GEM's other contextual variables including: • Business startup process • Nascent Entrepreneurs Prevalence Young Firm-Owners Prevalence Established Firm-Owners Prevalence • Total early-stage Entrepreneurial Activity (TEA) • TEA Index • TEA: Opportunity Index • TEA: Necessity Index • TEA: Market Innovation Potential Index • Market Expansion • Market Innovation Index Growth Expectation Index Market Expansion Index • Informal Investors • Informal Investors Prevalence • Perceptions related to entrepreneurship • Entrepreneurs Skill Item (self-report) Familiarity Item • Opportunity Perception Item • Fear of failure Item It provides a description of the processes behind determining these measures, the questions used, and a detailed account of the various facets of the GEM operational procedures.

Zoltan Acs Sameeksha Desai Leora Klapper	2008	Small Business Economics	The purpose of this literature review is to compare two country level entrepreneurship datasets: The Global Entrepreneurship Monitor (GEM) dataset and the World Bank Group Entrepreneurship Survey (WBGES) dataset	The authors find a number of differences in their comparative analysis of these dataset: • GEM data shows significantly higher levels of early stage entrepreneurship in developing countries • World Bank Group Entrepreneurship Survey (WBGES) data shows significantly higher levels of entrepreneurship for developed countries • The magnitude of the difference between the datasets across countries is attributed to the local institutional and environment of the entrepreneurs.
Claudia Àlvarez David Urbano Jose´ Amorós	2014	Small Business Economics	The purpose of this article is to analyze the evolution of GEM research based on the articles in the SSCI Web of Knowledge from 2000 to 2012.	• With regards to GEMs two data sources, the adult population survey (APS) and the national expert survey (NES), the authors find that 87 % of the articles use APS data, 3 % use the NES data, and 10 % use both. • With regards to theory, the authors find that institutional theory is the most common used theoretical framework. • With regards to level of analysis, the authors find that about 47% of the articles use micro level of analysis and 45% of the articles use a macro level of analysis. • The authors also find that there are still few academic publications that use GEM data, especially in top scholarly journals.

Siri Terjesen Jolanda Hessels Dan Li	2013	Journal of Management	The purpose of this article is to systematically review the field of comparative international entrepreneurship (CIE) research, especially outlining multi-country studies of entrepreneurial activity, and identify knowledge gaps.	The authors find that CIE literature is fragmented with substantial gaps related to content, theory, and methodology. The authors offer specific suggesting and general suggestions to address these gaps. **General suggestions include:** • Develop integrative approaches studying multiple levels and determinants, and outcomes of entrepreneurship • Use theory-based rationale to select countries/regions studied. • Utilize qualitative and quantitative methods from the same set of individuals, firms, industries, and/or countries. • Utilize existing publicly available data and/or build new longitudinal data sets **Specific suggestions include:** • Specify the definition of entrepreneurship used • Explore emerging phenomena that are critical to practice and policy (e.g. immigrant entrepreneurs). • Explore the evolution of country-level institutions.
Heiko Bergmann Ute Stephan	2013	Small Business Economics	The purpose of this review is to measure the differences in the transition from nascent entrepreneurship to new business owner/manager.	• The authors use the GEM TEA index to compute another measure, called transition ratio, that measures the number of entrepreneurs who transition from nascent entrepreneurship into new business owner/manager. • They propose the transition ratio as a new measure, and show its reliability and validity. • The transition ratio provides an opportunity for future cross-

				national research on the process of entrepreneurship.
Claude Marcotte	2013	Entrepreneurship & Regional Development	The purpose of this review is to: - Review and analyze the entrepreneurship indexes. - Empirical measure correlations between the indexes - Rank and cluster according to see groupings between countries for each variable - Integrate and compare the indexes on 21 Organization for Economic Cooperation and Development countries.	1. This review finds that conceptual foundations of most of the indexes are insufficiently developed. 2. This review also finds strong convergence between the indicators of venture creation, business ownership and growth, and divergences between these indicators and those concerning innovation. 3. From the cluster analysis, the authors show that the 21 sampled countries could be classified into three groups. 4. The first group have strong small business sectors and lower innovation rates. The second and smallest group of countries shows lower rates of small business ownership and higher rates of business expenditure on R&D. The third group shows a balance between the various indicators of entrepreneurial activity.

Table 2-3: A summary table of the six literature reviews

No.	Authors	Articles	%
1	Dirk De Clercq	5	8.3%
2	Zoltan J. Acs	5	8.3%
3	Erkko Autio	3	5%
4	José Ernesto Amorós	3	5%
5	André van Stel	3	5%
6	Saul Estrin	3	5%
7	Jolanda Hessels	3	5%
8	Sameeksha Desai	3	5%
9	David Urbano	3	5%
10	Ute Stephan	3	5%
11	Tomas Mickiewicz	3	5%

Table 2-4: Top authors sorted according to numbers of publications

No.	Journal	Author	Title	Total Citations
1	Small Business Economics	Reynolds et. al. (2005)	Global Entrepreneurship Monitor: Data Collection Design and Implementation 1998-2003	1439
2	Small Business Economics	Stel, Carree, Thurik (2005)	The Effect of Entrepreneurial Activity on National Economic Growth	1034
3	Small Business Economics	Wong, Ho, & Autio (2005)	Entrepreneurship, Innovation and Economic Growth: Evidence from GEM data	1102
4	Small Business Economics	Acs, Desai, & Hessels (2008)	Entrepreneurship, economic development and institutions	629
5	Small Business Economics	Acs & Varga (2005)	Entrepreneurship, Agglomeration and Technological Change	591
6	Journal of International Business Studies	Bowen & De Clercq (2008)	Institutional Context and the Allocation of Entrepreneurial Effort	416
7	Entrepreneurship & Regional Development	Verheul, Stel, & Thurik (2006)	Entrepreneurship & Regional Development	399
8	Small Business Economics	Levie & Autio (2008)	A theoretical grounding and test of the GEM model	369
9	Entrepreneurship: Theory and Practice	McMullen, Bagby, & Palich (2008)	Economic freedom and the motivation to engage in entrepreneurial action	340
10	Entrepreneurship: Theory and Practice	Baughn, Bee-Leng, & Kent (2006)	The normative context for women's participation in Entrepreneurship: a multicounty study	323
11	Small Business Economics	Acs & Amorós (2008)	Entrepreneurship and competitiveness dynamics in Latin America	295

12	Journal of Business Venturing	Anokhin & Schulze (2009)	Entrepreneurship, innovation, and corruption	288
13	Journal of International Business Studies	Stephan & Uhlaner (2010)	Performance-based vs socially supportive culture: A cross-national study of descriptive norms and entrepreneurship	274
14	Journal of Business Venturing	Stenholm, Acs, & Wuebker (2010)	Exploring country-level institutional arrangements on the rate and type of entrepreneurial activity	272
15	Small Business Economics	Acs, Desai, & Klapper (2008)	What does ‘‘entrepreneurship’’ data really show?	253

Table 2-5: Top 15 most cited papers

No. of Articles	Themes	Theory	Methods	Authors
19	Institutions	• Institutional Theory	• Bayesian Regression • Logistic Regression • Linear Regression • Tobit Regression • Structural Equations Modelling • Hierarchal OLS Regression • Probit Regression • Correlations • Quantile Regression • Log-linear Country Fixed Effects Regression	Arin Huang Minniti Nandialath & Reich (2015) Verheul Stel & Thurik (2006) Thebaud (2015) Bowen & Clercq (2008) Ho & Wong (2006) Levie & Autio (2008) Angulo-Guerrero Pérez-Moreno & Abad-Guerrero (2017) McMullen Bagby and Palich (2008) Naudé Greis Wood & Meintjies (2008) Urbano & Alvarez (2014) Stenholm Acs & Wuebker (2013) Acs Desai & Hessels (2008) Thai & Turkina (2014) Estrin & Mickiewicz (2011) De Clercq Lim & Oh (2014) Frederick & Monsen (2011) Stephen Urbano Hemmen (2009)

10	Culture	• Institutional Theory • Hofstede's Cultural Dimensions • Schwartz Basic Human Values Theory • Gender Theory	• Linear Regression • Stepwise Linear Regression • Fuzzy-set qualitative Comparative analysis • Logistic regression • Hierarchical Regression • Year Fixed Effects Regression • Chi squared Test	Valdez and Richardson (2013) Pinillos & Reyes (2011) Liñán & Fernandez-Serrano (2014) Coduras Clemente & Ruiz (2016) Aragon-Mendoza Raposo & Roig-Dobón (2016) Baughn Chua & Neupert (2006) Stephan & Uhlaner (2010) Cullen Johnson & Parboteeah (2014) Tominc & Rebernik (2007) Dheer (2017)
7	Economic Growth	• Historical views of entrepreneurship & economic growth (Smith 1776; Ricardo 1821; Hayek 1945; Schumpeter 1934; Kirzner 1973) • Macro-economic Growth Theory • Industrial Economics • Evolutionary Economics	• Linear Regression • Logistic Regression • Fixed Effects and Random Effects Regression • Three-stage Least Squares • Two-stage Least Squares	Wong Ho & Autio (2005) Bahmani Galindo & Méndez (2012) Acs & Amorós (2008) Stel Carree & Thurik (2005) Naude´ Amorós Cristi (2014) Bruns Bosma Sanders & Schramm (2017) González-Pernía & Iñaki Peña (2015)

4	Knowledge & Innovation	• Knowledge Spillover Theory	• Cluster Analysis • Factor Analysis • Regional Fixed Effects Regression • Binomial Regression • Linear Regression	Stam (2013) González-Pernía Peña-Legazkue & Vendrell-Herrero (2012) Anokhin & Wincent (2012) Acs & Varga (2005)
4	Individual Level Characteristics	• Resource based view • Human Capital • Social Capital	• Logistic Regression • Hierarchal logistic Regression	Cetindamar Karadeniz & Egrican (2012) Mickiewicz Nyakudya Theodorakopoulos & Hart (2017) Bergmann & Sternberg (2007) Klyver & Schenkel (2013)
3	FDI	• Knowledge Spillover Theory	• Logistic Regression	De Clercq Hessels & Stel (2008) Kim & Li (2014) Danakol Estrin Reynolds & Weitzel (2017)
2	Social Networks	• Social Network Theory	• Linear Regression • Two-stage Least Squares	Danis De Clercq & Petricevic (2011) De Clerq Danis & Dakhli (2010)
11	Other	None	None	Laffineur Barbosa Fayolle & Nziali (2017) Estrin Mickiewicz & Stephan (2013) Valliere & Peterson (2009) Vaillant & Lafuente (2007) Acs Desai & Klapper (2008)

				Alvarez Urbano Amorós (2014) Reynolds Bosma Autio Hunt De Bono Servais Lopez-Garcia & Chin (2005) Terjesen Hessels Li (2013) Bergmann & Stephan (2013) Marcotte (2013)

Table 2-6: Authors and methods by theme

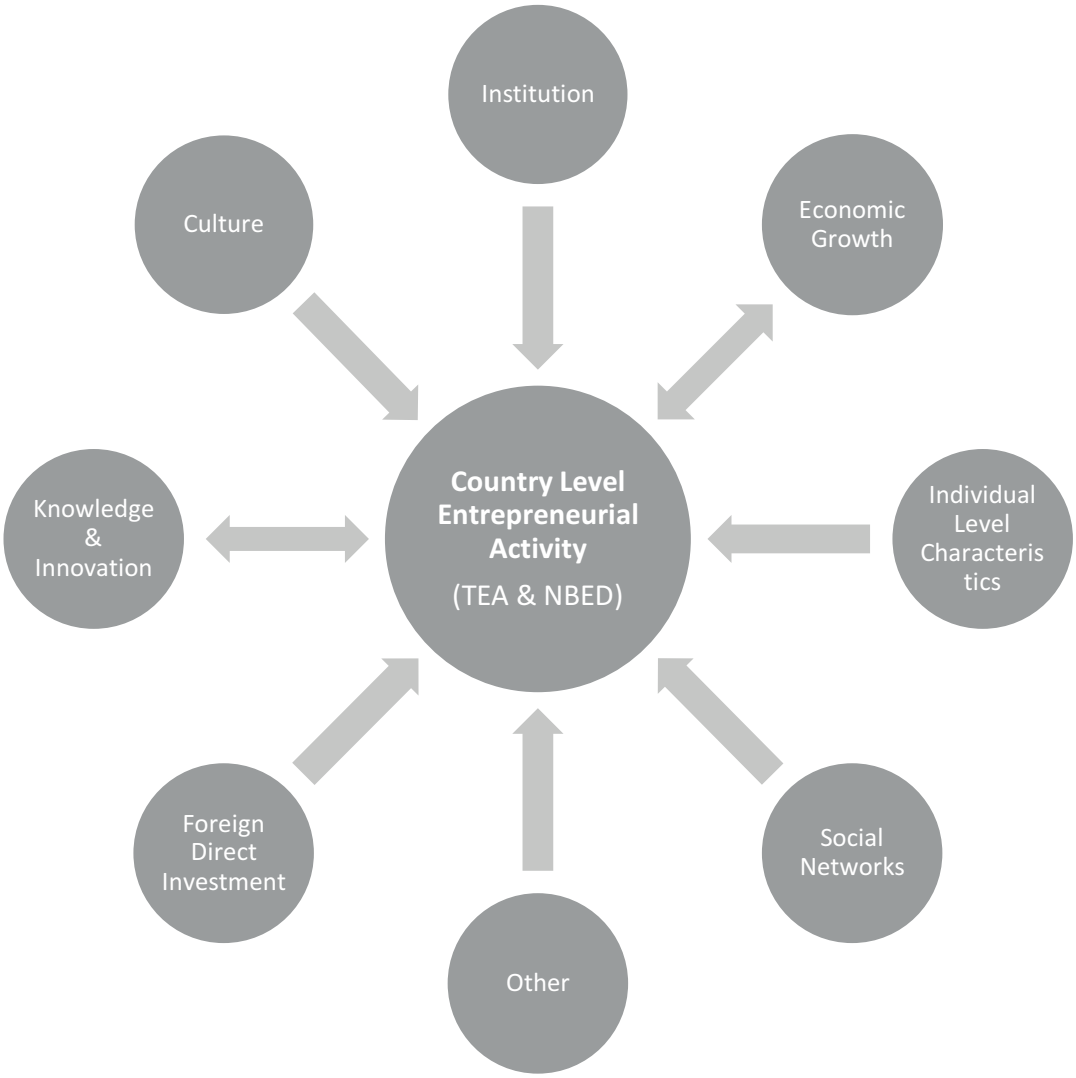


Figure 2-5: Top seven themes emerging from the literature review. These themes represent the main antecedents and outcomes associated with country level entrepreneurship activity

Theme 1: What is the impact of institutions on total entrepreneurial activity?				
No. & Author	**Research Question**	**Theory**	**Method**	**Summary of Findings**
1 Arin et al., (2015)	What is the effect of human capital, level of development, and institutions on total entrepreneurial activity?	Institutional Theory	Bayesian regression	• The authors make a case for Bayesian model averaging (BMA) in empirical research of entrepreneurship because it reduces the impact of model uncertainty • When this uncertainty is accounted for, GDP per capita, unemployment, marginal tax rate, and volatility of inflation are the only macro variables that are found to be significant and universally associated with entrepreneurial activity
2 Verheul et al., (2006)	What is the effect of technological development, income, employment, Informal sector, gender equality, governance, business regulation, finance, and life satisfaction on male and female total entrepreneurship activity?	Institutional Theory	Regression	• Most female and male entrepreneurial activity rates are impacted by the same variables and in the same direction, with the exception of a few, such as unemployment and life satisfaction • Amongst two measures of female entrepreneurship, (1) the number of female entrepreneurs and (2) the share of women in the total number of entrepreneurs, the variables impacting the number of female entrepreneurs differ from those impacting the share of female entrepreneurs. This is important to note so that governments can decide what they want to

				accomplish (gender composition or diversity)
3 Thébaud (2015)	What is the effect of institutional arrangements that reconcile work-family demands on total entrepreneurial activity, and more specifically, female total entrepreneurship activity?	Institutional Theory	Logistic Regression	• Institutions with supportive gender policies are associated with higher gender gaps early-stage and established business ownership, but lower gender gaps in terms of business characteristics, such as size, growth aspirations, and propensity to innovate or use new technology • Female entrepreneurs are less likely to pursue entrepreneurship because they lacked attractive employment in contexts with supportive institutions • Institutional contexts with salient work–family conflict are more likely to increase women's representation in entrepreneurship but reinforce their segregation into less growth-oriented (and thus lower-status) ventures
4 Bowen & De Clercq (2008)	What is the effect of financial capital, education, regulatory protection and complexity, and corruption the type of total	Institutional Theory	Logistic Regression	• The institutional environment impacts the type of entrepreneurial activity, and in particular, the extent to which entrepreneurial activity is directed toward high-growth activities

	entrepreneurial activity?			
5 Ho & Wong (2006)	What is the effect of different sources of financing and business regulatory costs on total entrepreneurial activity?	Institutional Theory	Regression	• Findings show that of the three types of financing, traditional debt financing, venture capital financing, and informal investments, only informal investments have a significant impact on total entrepreneurial activity. • Regulatory business costs dissuade opportunity driven entrepreneurship, but did not have an effect on necessity entrepreneurship.
6 Levie & Autio (2008)	Is the relationship between total entrepreneurial activity & the entrepreneurship education mediated by opportunity perception and start-up skills perception?	Institutional Theory	Regression	• In high-income countries, opportunity perception mediates the relationship between the level of post-secondary entrepreneurship education and the rate of new business activity. • Weak evidence is found for the mediating effect of skills perception.
7 Angulo-Guerrero et al., (2017)	What is the effect of economic freedom (Fraser Institute Index) on opportunity entrepreneurship and necessity entrepreneurship?	Institutional Theory	GMM	• Economic liberalization is found to encourage opportunity entrepreneurship and discourage necessity entrepreneurship. • Improvements in legal structure and security of property rights as well as in regulation of credit, labor, and business positively influence opportunity

				entrepreneurship. However, these factors and more freedom to trade internationally are more likely to damage necessity entrepreneurship.
8 McMullen et al., (2008)	What is the effect of economic freedom (Heritage/Wall Street Journal IEF) and GDP per capita on opportunity entrepreneurship and necessity entrepreneurship?	Institutional Theory	Multiple Regression	• Both opportunity entrepreneurship activity and necessity entrepreneurship activity are negatively associated with GDP per capita and positively associated with economic freedom. • More specifically, opportunity entrepreneurship activity is associated with property rights, while necessity entrepreneurship activity is associated with fiscal freedom and monetary freedom. • Governmental restrictions of economic freedom impact the type of entrepreneurial activity differently.
9 Naudé et al., (2008)	What is the effect of access to formal bank finance, education, and population density on total entrepreneurial activity?	Institutional Theory	Tobit Regression	• The authors find that the most important determinants of entrepreneurial activity across South Africa are profit rates, educational levels, agglomeration as measured by the economic size of a district, and access to formal bank finance, with profit rates having the most effect. • The authors also find that access to formal bank finance positively

				associated with entrepreneurial activity, while market-size (agglomerations) is negatively associated with entrepreneurial activity.
10 Urbano & Alvarez (2014)	What is the effect of regulative, normative and cultural-cognitive institutions on total entrepreneurial activity?	Institutional Theory	Logistic Regression	• A favorable regulative institution with fewer procedures to start a business, normative institution with higher media attention for new business and cultural-cognitive institution with better entrepreneurial skills, less fear of business failure and better knowing of entrepreneurs, increase the probability of being an entrepreneur.
11 Stenholm et al., (2010)	What is the effect of regulative, cognitive, and normative institutions on total entrepreneurial activity?	Institutional Theory	Structural Equation Modeling	• Findings suggest that institutional environment impacts both the rate and type of entrepreneurial activity across countries. • More specifically, for the formation of innovative high-growth new ventures, the regulative environment is less likely to matter. • For the formation of high-impact entrepreneurship, an institutional environment with knowledge spillovers and capital matters most.
12 Acs et al., (2008)	What is the impact of economic freedom and national governance on formal and	Institutional Theory	Generalized Least Squares	• Economic liberalization has a positive effect on both formal and informal entrepreneurship • National governance levels have a positive effect on formal

	informal entrepreneurial activity?			entrepreneurship, but a negative effect on informal and total entrepreneurship
13 Thai & Turkina (2014)	What is the effect of economic freedom, national governance, and resources and abilities, and culture on formal and informal entrepreneurial activity?	Institutional Theory	Partial Least Squares Structural Equation Modeling	• Formal and informal entrepreneurship are driven differently. • Creating a nurturing a performance-based culture, favorable conditions for economic advancement, high quality of governance and enhancing people's resources and abilities reduces informal entrepreneurship and boosts formal entrepreneurship.
14 Estrin & Mickiewicz (2011)	What is the effect of size of government and gender equality policies on female and male total entrepreneurial activity?	Institutional Theory	Random Effects Probit Models	• Women are less likely to participate in entrepreneurial activity in countries where the state sector is larger. • Rule of law is not found to have gender-specific effects. • Restrictions on freedom of movement away from home make it less likely for women to have high entrepreneurial aspirations (employment growth).
15 De Clercq et al., (2014)	Is the relationship between total entrepreneurial activity & informal investment and entrepreneur education mediated by	Institutional Theory	Hierarchal OLS regression	• There is a positive and significant relationship between a country spending on informal investments and the rate of total entrepreneurial activity. • The authors don't find evidence for the effect of country spending on

	hierarchy and conservatism?			entrepreneurship education and the level of total entrepreneurship activity. • Higher levels of hierarchy reduce the effect of the relationship between country's spending on informal investments and total entrepreneurship activity (with no effect found for entrepreneurship training). • Higher levels of conservatism reduce the effect between a country's spending both on informal investments & entrepreneurship education, on total entrepreneurship activity.
16 Frederick & Monsen (2011)	What is the effect of entrepreneurial framework conditions and country expert opinion measures on the relationship between total entrepreneurial activity and GDP per capita between high-income and middle-income countries? Why does New Zealand have only a moderate level of economic development	Institutional Theory	Linear, Quadratic, and Cubic regression	• There is a quadratic association between total entrepreneurial activity and economic development (GDP per capita). • New Zealand is an outlier with respect to the quadratic trend line between TEA and GDP per capita. • Entrepreneurial framework conditions correlations with the relationship of a country's TEA and GDP per capita depend on a country's level of development • A subset of EFCs is associated with New Zealand's outlier status, such as the highest value of selectivity for

	despite its high level of entrepreneurship ?			entrepreneurial support measures, a greater degree of economic freedom than both high income and middle income clusters, a greater degree of male opportunity entrepreneurship than both country clusters, fewer males who are 55–64 years old and substantially fewer females who are 45–54 years old.
17 Stephen et al., (2009)	What is the effect of formal worker laws enforcement on working time regulations and total entrepreneurial activity?	Institutional Theory	Regression	• A number of studies have shown that rigidities in the labor regulations have a negative impact on entrepreneurial activity • Formalism is defined by the following: (i) professionals vs. laymen, (ii) written vs. oral elements, (iii) legal justification, (iv) statutory regulation of evidence, (v) control of superior review, (vi) engagement formalities, and (vii) independent procedural actions • This study shows that higher enforcement formalism reduces the negative impact brought about by rigid working time regulations on entrepreneurial activity • Entrepreneurs are less responsive to labor regulations in they operate in contexts with higher the level of enforcement formalism

				• Encouraging labor flexibility may not improve conditions for entrepreneurial activity in formalist countries
18 Laffineur Et al. (2017)	What is the effect of active labor market programs (ALMP) on entrepreneurial activity and unemployment in OECD countries?	Institutional Theory	Bayesian regression	• There is a positive effect of ALMP on the rate of necessity entrepreneurship but there is no significant effect of ALMP on the rate of opportunity entrepreneurship • Generous unemployment benefits decrease the positive outcome of ALMP on the total rate of necessity entrepreneurship
19 Estrin et al., (2013)	What is the effect of formal institutions, specifically government and constraints on the executive, informal institutions, specifically social capital, on commercial entrepreneurship activity and social entrepreneurship activity?	Institutional Theory	Bivariate Discrete Choice Multilevel Model	• The rate of social entrepreneurs has a positive impact on the likelihood that individuals in a country undertake commercial entrepreneurial activity. • Constraints on the arbitrary power of the government effects the likelihood that individuals in a country undertake both commercial and social entrepreneurial activity. • Government activism negatively impacts the likelihood that individuals participate in both

				commercial and social entrepreneurial activity.

Table 2-7: Research question, theory, method, and findings for the institutions theme

Theme 2: What is the impact of culture on total entrepreneurial activity?				
No. & Author	**Research Question**	**Theory**	**Method**	**Summary of Finding**
1 Valdez & Richardson (2013)	What is the effect of one dimension of national culture, individualist–collectivist orientation, on total entrepreneurial activity, and does it vary across different levels of	Hofstede Cultural Dimension Theory	Multiple Regression	• A country's culture correlates to entrepreneurship, however, higher levels of individualism do not necessarily mean higher rates of entrepreneurship.

	economic development (GDP per capita)?			• A country's total entrepreneurial activity is negatively related to individualism when the level of development is medium or low, and positively related to individualism when the level of development is high.
2 Pinillos & Reyes (2011)	What is the role of national culture and entrepreneurship activity in predicting the level of economic development (GDP per capita)?	Schwartz Cultural Orientation Theory	Linear Regression & Cluster Analysis	• Cultural and entrepreneurship variables are able to classify countries according to their development level, explaining over 60% of the variance in GDP per capita. • National culture and entrepreneurship can jointly help characterize the level of economic development in terms of GDPpc • In the specific case of Europe, four regions sharing cultural and entrepreneurial characteristics are found.
3 Liñán & Fernandez-Serrano (2013)	What is the relationship GEM's entrepreneurial attitudes and social values of adult populations and total entrepreneurial activity?	GEM 1999 Framework model as Theoretical Background (Singer, Amorós, & Moska, 2015)	Stepwise Linear Regression & Fuzzy-set Qualitative Comparative	• This paper seeks to show a new method, fsQCA, can improve previous findings from linear regression that show a relationship between TEA and

			Analysis (FsQCA)	entrepreneurial attitudes and social values of adult populations from GEM. • Regarding entrepreneurial attitudes, findings show that positive presence of skills to start-up is the most relevant to obtaining high TEA. • Regarding social values, findings show the positive presence of media coverage for entrepreneurship and the consideration of entrepreneurship as a good professional choice are the most relevant social values to obtaining high TEA rates.
4 Coduras et al., (2016)	What is the effect of cognition on male and female startup activity?		Logistic Regression	• This study finds that both men's and women's entrepreneurial cognitive scripts affect the venture creation decision impact the venture creation decision, however women's entrepreneurial cognitive scripts affect the venture creation decision in a different manner than men's

				entrepreneurial cognitive scripts do.
5 Aragon-Mendoza et al., (2016)	What is the effect of norms, specifically gender equality, general entrepreneurial norms, and norms that particularly support female entrepreneurship, on the rate of male/female total entrepreneurial activity?	Normative Institutional Theory	Hierarchical Multiple Regression Analyses	• This study has four findings: • A country's proportion of female entrepreneurship is positively related to its normative support for female entrepreneurship. • Normative support for female entrepreneurship is positively related to a country's level of gender equality. • Normative support for female entrepreneurship is positively related to a country's level of general support for entrepreneurship. • A country's relative proportion of female entrepreneurship is negatively related to its level of economic development (per capita GDP).

Table 2-8: Research question, theory, method, and findings for the culture theme

Theme 3: What is the impact of economic growth on total entrepreneurial activity?				
No. & Author	**Research Question**	**Theory**	**Method**	**Summary of Finding**
1 Wong et al., (2005)	What is the effect of different types of entrepreneurship and innovation, as two distinct separate aspects, on economic growth rates?	None	Linear Least Squares Regression	• Countries with higher levels of technological innovation will have faster economic growth rates. • Having a higher degree of entrepreneurship or new business creation prevalence does not guarantee economic growth. Only certain activities and functions of entrepreneurs may stimulate growth. • High Potential TEA is the only form of entrepreneurship that has an effect on the different rates of economic growth across nations.
2 Bahmani et al., (2012)	What is the effect of non-profit organizations on economic growth?	None	Ordinary Least Squares Regression	• The effects of NPOs on the economic growth process are indirect, in the sense that they act mainly through two variables: entrepreneurship and human capital. • Through entrepreneurship, NPOs improve the social environment and through human capital training that enables workers to use new machinery and innovate, NPOs improve technological progress.

3 Acs & Amorós (2008)	What is the effect of a country competitiveness (measured in terms of GDP and CGI) on different types of entrepreneurship?	None	Log and Linear Regression with Fixed Effects	• The two measures of competitiveness, CGI and GDP are significant throughout. • Wealthy or competitive countries face a decreasing degree of total entrepreneurship activity. • Low-middle income countries have relatively higher rates in entrepreneurship, but not necessarily ‘‘high quality’’ entrepreneurship activities. • For Latin American counties (and other low-middle income countries), the degree of competitiveness does not have the same effect to reduce the existence of necessity-based entrepreneurship. • For Latin America, the necessity-motivated entrepreneurs have an important share of the total entrepreneurial activity, and in many cases (like Argentina and Brazil in 2002) the NE rate is over the OE.
4 Stel et al. (2005)	What is the effect of total entrepreneurial activity on GDP growth? Is this effect dependent on the level of development (measured by GDP per capita)?	None	Regression	• The impact of entrepreneurial activity on GDP growth increases with per capita income. • The effect of entrepreneurial activity does not change in a continuous way over the course of economic development (not a simply linear), but rather

				in a different manner across the varying stages of economic development. • Entrepreneurship plays a different role in countries at different stages of economic development
5 Naudé et al., (2014)	What is the effect of happiness on entrepreneurial activity?	None	Three Stage Least Squares (3SLS)	• The relationship between opportunity entrepreneurship and the national level of happiness exhibits an inverted U shape: an increase in national happiness is associated with an increase in entrepreneurship to a certain point, after which it is then associated with a declining level of happiness. In addition, findings suggest happier countries have a higher level of entrepreneurial activity.
6 Bruns et al., (2017)	What is the influence of the moderating effect of entrepreneurial ecosystems on the relationship between entrepreneurial activity and economic growth?	Entrepreneurial ecosystem	Fixed Effects with clustered standard errors	• Findings do not show evidence for the presence of ecosystems. If ecosystems differ in across space, this study should be able to reveal the existence and relevance of entrepreneurial ecosystems in the heterogeneity of its impacts of entrepreneurial activity on GDP growth. The authors qualify their findings by arguing that they can only conclude it does not reveal itself at this level of aggregation.

7 González-Pernía & Peña-Legazkue	What is the effect of different types of entrepreneurship (general TEA, opportunity driven, and export driven) on regional economic growth?	None	Two Stage Least Squares (2SLS); GMM	• The impact of entrepreneurship on economic growth varies between different types of entrepreneurial activity. • A region's level of opportunity-driven entrepreneurial activity is positively related to its rate of economic growth. • A region's level of export-oriented entrepreneurship is positively related to its rate of economic growth. • The positive relationship between a region's level of export-oriented entrepreneurial activity and its rate of economic growth gets stronger as the level of export intensity increases.

Table 2-9: Research question, theory, method, and findings for the economic growth theme

Theme 4: What is the impact of knowledge & innovation on total entrepreneurial activity?				
No. & Author	**Research Question**	**Theory**	**Method**	**Summary of Finding**
1 Stam (2013)	What is the effect of knowledge (measured by R&D expenditure, employment in knowledge-intensive services, patents filed, and tertiary school enrollment) on different types of entrepreneurial activity?	Knowledge Spillover Theory	Linear Regression	• We expected positive relations of knowledge with different types of entrepreneurship. However, our findings disconfirm this, and suggest that on average, knowledge investments, activities, and outputs in a country are more related to entrepreneurial employee activity than to independent entrepreneurship in developed economies.
2 González-Pernía et al., (2012)	What is the effect of innovation and entrepreneurship on regional productivity & competitiveness (measured by real GDP, physical capital stock, population employed)?	Knowledge Spillover Theory	Cluster Analysis; Factor Analysis; Fixed Effects Regression	• Findings suggest that both innovation and entrepreneurship together matter for economic growth. • Regions with high innovation capability have a higher level of productivity than regions with a lower innovation capability. • More innovative and entrepreneurial regions achieve greater productivity than regions with a lower innovative and entrepreneurial capability.

3 Anokhin & Wincent (2012)	What is the effect of total entrepreneurial activity on innovation (patent applications & total factor productivity)? Does it vary across different levels of economic development?	None	Binomial Regression; OLS Regression	• The link between entrepreneurship rates and innovation is not always positive, as predicted by the early scholars of entrepreneurship, but rather depends on the country's level of development. The relationship is positive in the developed countries, but negative in countries in early development stages.
4 Acs & Varga (2005)	What is the effect of both entrepreneurial activity and agglomeration on knowledge spillover, as measured by R&D expenditure and patents?	Knowledge Spillover Theory; Spatial Proximity	Romerian Framework OLS Regression	• The effect of agglomeration on knowledge spillover is positive and statistically significant. The effect of entrepreneurship on knowledge spillover is positive and highly significant. • Agglomeration effects and entrepreneurship facilitate the knowledge spillover of new knowledge in economic growth.

Table 2-10: Research question, theory, method, and findings for the knowledge and innovation theme

Theme 5: What is the impact of individual level characteristics on total entrepreneurial activity?				
No. & Author	**Research Question**	**Theory**	**Method**	**Summary of Finding**
1 Cetindamar et al., (2012)	What is the effect of three types of capital – human, family and financial – in pursuing entrepreneurship in Turkey? Does this effect vary by gender?	Human Capital Theory	Logistic Regression	• Human capital, family social capital, and financial capital is positively related to the likelihood entrepreneurship in Turkey. • The effect of human capital, measured by education, on women's engagement in entrepreneurship is stronger than it is for men, but this effect disappears at very high levels of education (post-grad education) • Financial capital is equally as important for men as it is for women in influencing entry into entrepreneurship.
2 Mickiewicz et al., (2017)	What is the effect of resource endowment, such as income, education, employment status, knowledge & skill, and social networks, on the different stages of entrepreneurial activity? (1. Considering entrepreneurship ; 2. Intending to start a new business in the next three years, 3. Nascent	Resource Based Theory	Multi-nominal Logit Regression	• Findings suggest that that the role of resource endowment varies along the different stages of the entrepreneurial process. • Low levels of household income is more likely to be associated with engaging in the early stages of entrepreneurial activity (considering entrepreneurship; entrepreneurial intentions). • Low levels of education is associated with the intention to become entrepreneurs and individuals are less likely to be engaged in the more advanced stages of entrepreneurship (nascent entrepreneurs and owner-managers of new firms).

	entrepreneurship, and 4.TEA)			• Individuals who are employed are more likely to be nascent entrepreneurs and less likely to engage in the early stages of the entrepreneurial process (considering entrepreneurship and entrepreneurial intentions).
3 Bergmann & Sternberg (2007)	What is the effect of person related characteristics and regional context on entrepreneurial activity in Germany, before and after changes in macroeconomic policy? *Changes in policy include cutting the level of welfare, unemployment benefits, an obligation to accept low-paid work as push factors, and Me program as a pull	None	Logistic Regression	• Both individual and regional characteristics have an impact on the decision to become self-employed. • With regards to individual factors before the policy, findings suggest age has no significant influence, women have lower entrepreneurial propensity than men in all entrepreneurship types, and higher education qualification has a positive influence on entrepreneurial propensity. • With regards to regional context before the policy, findings suggest unemployment is significant, and there is a negative correlation between the GDP per capita and nascent entrepreneurship. • After the policy, the most significant change is the reversal of the direction of influence of a change in the regional rate of unemployment on nascent entrepreneurship activities.

4 Klyver & Schenkel (2013)	What is *both* the independent and combined effect of human capital, social capital, and financial capital on nascent entrepreneurial activity?	Resource Based Theory	Hierarchal Logistic Regression	• Financial capital, measured as household income, human capital, measured as formal education, prior entrepreneurial experience, and self-efficacy, and social capital, measured as whether or not an individual personally knows someone who has started a business in the past two years, are all associated to individuals' likelihood to enter the nascent new venture creation process. • Findings also show that the association of social capital and the entry to nascent entrepreneurship is moderated by only two types human capital, entrepreneurial experience and self-efficacy but not education level. • Furthermore, the association of human capital and the entry to nascent entrepreneurship is moderated by financial capital, but not uniformly across all household income.

Table 2-11: Research question, theory, method, and findings for the individual level characteristics theme

Theme 6: What is the impact of foreign direct investment (FDI) on total entrepreneurial activity?				
No. & Author	**Research Question**	**Theory**	**Method**	**Summary of Finding**
1 De Clercq et al., (2008)	What is the effect of inward and outward foreign direct investment, and a country's export and import level on new ventures internalization ?	Knowledge Spillover Theory	Regression	• Findings suggest the greater a country's outward FDI, export level, or import level, the greater its proportion of export-oriented new ventures. • The study also finds that the positive spillover effect from a country's outward FDI, export level, or import level, to the export orientation of its new ventures, is more pronounced in higher-income than in lower-income countries.
2 Kim & Li (2014)	What is the effect of foreign direct investment on entrepreneurial activity (NBED) across different countries? Is it moderated by the country's socio-political conditions (political stability, regulatory quality, and gross tertiary education enrollment)?	FDI Spillover Effects; Institutional Theory	Random Effect Negative Binomial Model	• Countries with higher inward foreign direct investment are more likely to generate new firms. • FDI's positive relationship on entrepreneurial activity strengthens in countries with low levels of institutional support for private sector development and weakens in countries with high levels of institutional support. • FDI's positive relationship on entrepreneurial activity strengthens in countries with low levels of political stability, or human capital, and weakens in countries with high levels of political stability, or human capital.

3 Danakol et al., (2014)	What is the effect of FDI inflows, measured by annual cross boarded M&A at the host country, on entrepreneurial activity in the host country?	FDI Spillover Effects	Two Stage Least Squares (2SLS)	• The authors find the relationship between M&A FDI inflows and entrepreneurship to be negative across all economies. • This negative effect is much more distinct in developed than developing economies and is also within some industries more than other, such as manufacturing. • Policies to encouraging FDI via M&A need to consider how to counteract the prevailing adverse effect on entrepreneurship.

Table 2-12: Research question, theory, method, and findings for the foreign direct investment theme

Theme 7: What is the impact of social networks on total entrepreneurial activity?				
No. & Author	**Research Question**	**Theory**	**Method**	**Summary of Finding**
1 Danis et al., (2011)	What is the effect of social networks on total entrepreneurship activity? Does this effect vary across emerging and developed economies?	Social Network Theory; Institutional Theory	Logit Model	• Participation in voluntary associations is associated with higher rates of new business activity, but the potency of this relationship increases in emerging compared with developed economies. • The relationship between the level of associational activity and new business activity is moderated by the country's regulatory burden and the country's normative burden, such that the relationship is stronger for a higher regulatory or normative burden.
2 De Clercq et al., (2010)	What is the effect of associational activity on total entrepreneurial activity in emerging economies?	Social Network Theory; Institutional Theory	Logit Model	• This study finds a positive relationship between a country's associational activity and new business activity.

Table 2-13: Research question, theory, method, and findings for the social networks theme

	Total Entrepreneurship Activity (TEA)	Opportunity TEA	Necessity TEA	New Business Entry Density (NBED)
Institutional Context	28	13	10	4
Social Context	8	-	-	-
Business Context	8	4	3	-
Spatial Context	8	1	1	1

Table 2-14: Context by country level measure

Figure 2-6: A word cloud showing all the variables that are used in the institution theme. The larger and darker shades of gray illustrate the variables that were used the most to represent institutions.

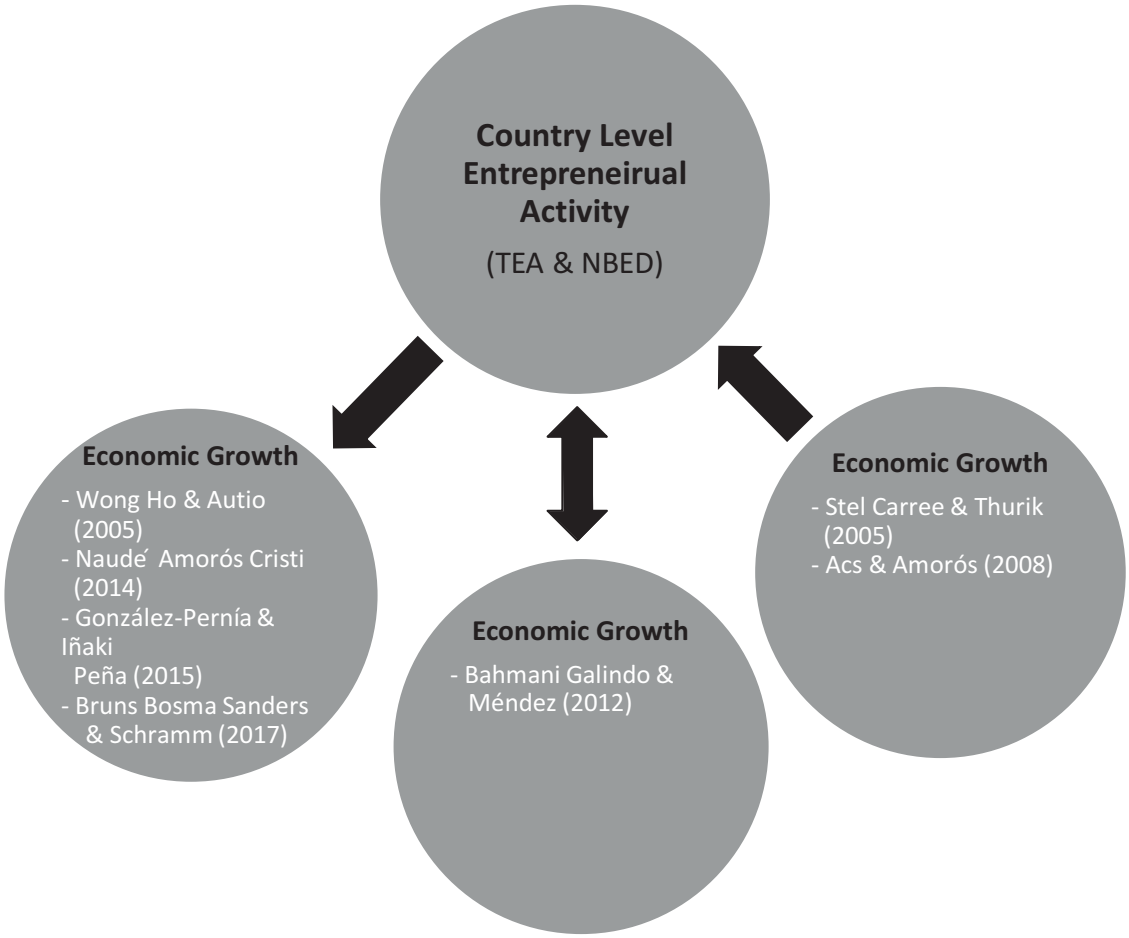


Figure 2-7: The antecedents and outcomes to country level entrepreneurship activity in the Economic Growth and Entrepreneurship theme.

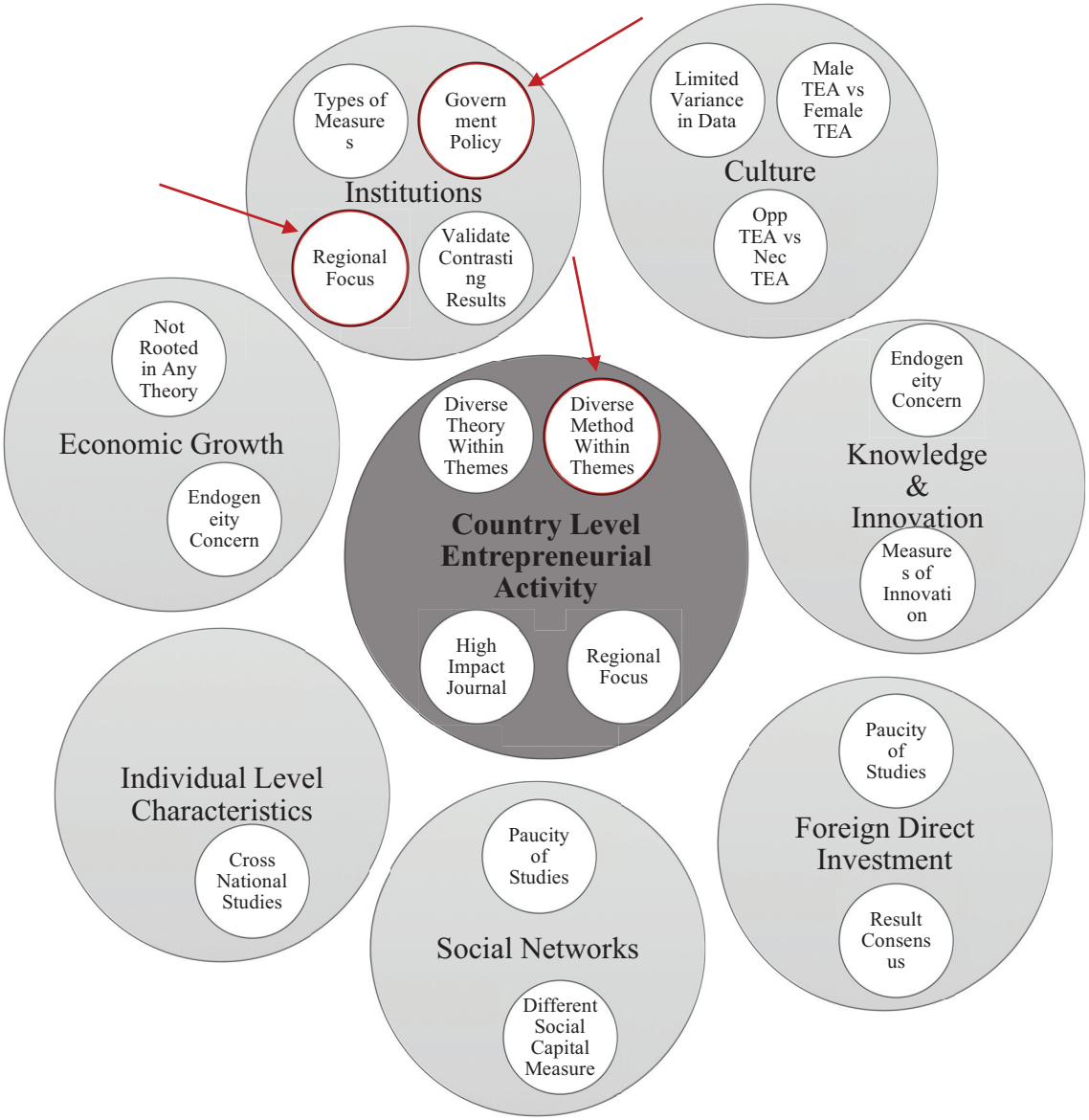


Figure 2-8: Gaps specific to certain themes and in gaps across overall country level entrepreneurship literature.

CHAPTER 3

GOVERNMENT INTERVENTION TO BOLSTER ENTREPRENEURSHIP: THE CASE OF START-UP CHILE

ABSTRACT:

In 2010, the Chilean government launched a government funded program known as Start-Up Chile which provides equity free investments for new ventures, with the goal of attracting and retaining entrepreneurs to start their startups in Chile. This paper investigates the impact of Chile's new government initiatives Start-Up Chile, on the rate of startups as measured by total entrepreneurship activity (TEA) and on the standard of living in Chile, as measured by GDP per capita (PPP). To test the impact of the new government program Start-Up, this paper utilizes a difference in difference model to compare the intervention group, Chile, with two control groups, South America and Argentina-Brazil, over a ten-year period from 2001-2016. Findings suggest that the 2010 Start-Up Chile government entrepreneurship accelerator program increased the number of startups by about 8.65 percent more in Chile than it did in Argentina-Brazil and increased the standards of living, as measured by GDP per capita (PPP), by 3,813 international dollars more in Chile than it did in Argentina-Brazil. Our finding can serve as an illustrative precedent for other countries in this region aiming to promote entrepreneurship and improve standards of living. To the best of our knowledge, no study has so far capitalized on the natural experiment created by the change of regulations in Chile to investigate whether a causal link exists between a government startup initiative and the entrepreneurship rates at the country level. Building upon North (1991), Acemoglu et al. (2003), Baumol (1993) and Casson (1982), we conclude that regulatory institutions, and government interventions in particular, play an important role in promoting entrepreneurship activity and improving standards of living in their economy.

INTRODUCTION

Many agree that the general role of government in society is to provide sustainable human welfare. This includes establishing justice, common defense, and basic infrastructure, for the purpose of protecting citizens, ensuring peace, and facilitating the economic and social flourishing of its citizens (Locke 1824; Kant 1991; Dunn 1969). However, more specifically in economic development, the role of government is debated, often as a choice between free market and government interventionism (Friedman 2007; Acemoglu et al. 2005). With the collapse of communist regimes throughout history, the boom of the US economy in the 1990's, and the rise of China and India to compete with the world's largest economies, the question as to whether government should take a more passive or active position in coordinating market activity remains of paramount importance (Stiglitz 1996, 2010).

Generally, the role of government in the economic domain is divided into two perspectives. The first perspective is for macro-level government intervention, to regulate the distribution of income and wealth, correct market failure, overcome prolonged recessions and unemployment, and facilitate economic growth (Acemoglu et al. 2005; Stiglitz 1996, 2010). The second perspective, at the other end, argues against macro-level government intervention to prevent taking away personal freedom and create excess bureaucracy and inefficiency (Friedman 2007). In this paper, we only focus on exploring the role of government in stimulating entrepreneurship activity and improving standards of living, and more particularly through a change in policy to offer a startup accelerator program.

We ground the relationship between government policy, or regulatory institutions, and entrepreneurial activity in North's classic 1991 piece, which sheds light on the significance of the underlying "rules of the game" amongst different contexts in determining outcome in general, or more specifically the aggregate rate of entrepreneurial activity. The term government, is derived from its original Latin form *gubernatio*, which means to steer or lead processes (Enders & Remig, 2014). Although a large number of extant literature examines the relationship between regulatory institutions and entrepreneurship, only a handful of studies investigate the direct effect of a government's intervention policy on entrepreneurial (Reynolds et al., 2004; Minniti, Bygrave, & Autio, 2006; Minniti, 2008). This study investigates the questions: what is the direct impact of government entrepreneurship accelerator program on the rate of total entrepreneurial activity and standards of living at the country level?

Over the past several decades, there has been an evolution in the manner that entrepreneurial activity is examined and perceived. As opposed to investigating the attributes of individual entrepreneurs, or relying on the assumption that "entrepreneurs are born," researchers started to pay special attention to the institutional environment in which entrepreneurial activity flourishes. Context has emerged as a significant locus of entrepreneurial activity. By looking at the different levels of entrepreneurship across the globe, and the burgeoning entrepreneurial communities in some regions more than others, it has become more apparent that an entrepreneurial environment can be cultivated. While governments cannot force innovation and startup activity, they can facilitate the creation of new small businesses through a rich and nurturing environment which encourages risk taking and ensures a payoff for entrepreneurship and innovation efforts.

THEORY AND HYPOTHESES

Institutions and Entrepreneurship

On the basis of classic works by North (1991), Scott (1995), Baumol (1990), and Casson (1982), we theoretically ground our study in institutional theory to examine the impact of macro level institutions on economic activity. This institutional approach is offers a useful lens to ground our theory because it emphasizes the importance of legal structures across space and time which interact with individual entrepreneurs to influence their startup decision (Aldrich 2011; Baumol 1986, 1990; Casson 1982; North, 1991; Scott 2008). Entrepreneurial behavior may take different directions across the wide range of variegated contexts due to payoffs attributed to this behavior in each specific economy. The institutional lens explains how the environment can shape new business inception through the rewards set in place to compensate entrepreneurs for their start up and innovation efforts.

Casson's economic theory ties the role of governments in the institutional environment directly with entrepreneurship activity. In his seminal 1982 book "The Entrepreneur: An Economic Theory," Casson explores economic factors that governments shape which can stimulate or hinder entrepreneurship activity, such as the availability of technology and infrastructure (Casson & Wadeson, 2007), access to information (Casson & Rose, 1997), marketing opportunities (Casson & Rose, 1997), tax laws, legal regulations, and political freedoms (Casson et. al. 2010, Acemoglu & Johnson, 2005).

We define institutions as both the informal and formal "rules of the game," (North, 1991) and the taken-for-granted-assumptions (Meyer & Rowan, 1991) which dictate permitable action in a particular context. Constituents in the institutional environment,

such as governments, constraint action through policy and inflict pressure on actors to justify their actions and conform with institutional rules, regulations, and norms (Dacin, 1997; Scott, 1995). Although we specifically focus on government in this paper, constituents that judge and impact entrepreneurs' actions are not always necessarily regulatory, and can take the form of public interest groups, community groups, society, and customers, amongst a variety of others. Economic actors seek legitimacy for their actions from these constituents because they depend on them for physical resources, such as financial capital, or social resources, such as reputation and word of mouth (Amburgey, Dacin, and Singh, 1996). Entrepreneurs seeking resources, survival, and legitimacy obtain them through confirmatory behavior (Roy, 1997) and a risk reward calculation (Baumol 1986, 1990; Sobel 2008). As opposed to the common efficiency-seeking behaviors promoted in economics literature, the institutional approach illustrates that economic activity is embedded in the social and legal context (North, 1991; Scott, 1995) and can be impacted by these contexts significantly.

Regulative Institutions and The Role of Government

Regulatory institutional pillars consist of laws, sanctions, and their enforcement (Scott, 2008) susceptible to change through negotiable contracts (North, 1991). Regulative institutions establish laws and investigate conformity through highly formalized mechanisms, such as a police force and court system, in order to shape the behavior of agents (Scott 2008). This sub-branch of institutional theory assumes decision making to be based on formal written rules and procedures (North, 1991; Bonchek & Shepsle, 1996), as opposed to the sociological branch, which assumes decision making to be based on heuristics and conventions, and holds the drivers of human behavior to be based in social

norms, culture, and cognitive scripts (DiMaggio & Powell, 1983, 1991; Meyer & Rowan, 1991). In the case of startup activity, the formal regulative branch of institutional theory is concerned with laws, regulations and government policies which support or hinder new businesses. With regulatory institutions, rather than relying on the logic of appropriateness, economic actors are more likely to rely on instrumental logic and assess their risk reward through the question ‘‘what are my interests in this situation’’ (March 1981)?

Governments can promote start up activity through creating favorable market incentives such as minimizing inception complexity, reducing risk, providing capital resources (Foster, 1988; Busenitz et al. 2000, Dana, 1987, 1990) or specifying property rights (Spencer and Gómez 2004). Complications in labor laws have a negative impact on new venture creation (Klapper et al. 2006; van Stel et al. 2007) while regulations that focus on providing access to financial capital facilitate new venture creation (van Gelderen et al. 2006). Aggregate entrepreneurship in society stems not only from the availability of market economic opportunities, but also from the social and political opportunities or barriers that determine the allocation of incentives (Baumol 1990; Baumol et al., 2009; Sobel, 2008). This is especially apparent in emerging economies where conglomerates capitalize on institutional voids, or inadequate institutional structures, to venture into new businesses through unrelated diversification (Khanna & Palepu, 1997). Governments can promote entrepreneurship activity by creating “conductive economic conditions” (Casson 1982; Casson & Wadeson 2007; Casson & Rose, 1997) for small business creation and ensuring that entrepreneurs’ risk taking can be rewarding through incentives.

The questions whether government should intervene to ensure economic growth, stability, and correct for market failure has been subject to much debate. Government

intervention refers to the use of public officials to collect information, make decisions, and implement policies (Acemoglu & Verdier 2000). Chicago school theorists argue that government intervention in the economy is counterproductive because of the salaries that government will pay to maintain government employees assigned with this task (Katz & Kruger 1991), and because it leads to bureaucratic corruption (Mydral 1986; DeSoto 1989) and a misallocation of resources (Lal 1985; Donahue 1989). Other scholars argue that an active government plays an important role in the economy, especially to correct for market failure, and often cite the experiences of the East Asia region as an example where government intervention was successful in promoting economic development and improving standards of living (Stiglitz 1996; Acemoglu & Verdier 2000; Samuelson 1966).

In the 1960's, South Korea was considered to be one of the poorest countries with a per capita income similar to India and a GDP per capita lower than some Sub-Saharan Africa countries (Stiglitz 1996; Wade 1990, 2003). Over the course of 30 years, South Korea's GDP increased 8% per year on average and by in 1996, South Korea became a member of the OCED countries. Singapore, Malaysia, Hong Kong, and Taiwan also achieved rapid economic growth through an active government that shaped economic policy. The success of East Asian economies is an example of a role of government that strikes a balance between competition and correction for market failure (Stiglitz 1996). "In most instances East Asian governments abandoned the rigid planning model early on. But they did not err by going to the other extreme. Their government helped to guide and create markets rather than completely supplanting or surrendering to them" (Stiglitz 1996). Rosenstein-Rodan (1943) coined this strategy as "big push." According to Rosenstein-Rodan (1943), large scale public investment from the government is necessary to foster

economic development and industrialize developing nations. The wider the gap between the country's level of industrialization, the greater the governments' role in organizing resources to foster economic development (Gerschenkron 1962; Gerschenkron & Nimitz 1952).

Arrow and Debreu (1954) identify several conditions of market failure, including the presence of externalities and public goods, the absence of perfect competition, and the lack of a complete set of markets. The modern theory of the market suggests that when government intervenes to correct for these market failures, conditions will not necessarily be improved because of rent seeking, inefficient allocation, and corruption. The common argument is that the government bureaucrat, an agent that is a self-interested, has superior information, and is hard to monitor, will create a misallocation of resources and possible corruption through intervention (Acemoglu & Verdier 2000). "These government failures, however, are not proof that government intervention is socially harmful. Instead, they may indicate the unavoidable price of dealing with market failures" (Acemoglu & Verdier 2000). The grand success of first world capitalism and dramatic failure of second world socialism has created extremist opposite ideological perspectives, with an unwavering belief at one end of the spectrum that "government should play almost no role in economic development. But the rejection of one extreme is not the affirmation of the other" (Stiglitz 1996).

In this paper, we argue that selective intervention can be useful for promoting entrepreneurship activity and improving standards of living. Intervention in this case refers to policy directed at overcoming systematic barriers or market failures through promoting startup activity (Lundström and Stevenson 2005; Stevenson and Lundström 2007). There

has been a significant shift in government policies to promote entrepreneurial activity through direct intervention in the past several decades (Gilbert, Audretsch & McDougall, 2004), especially with respect to economic growth and employment (Audretsch Grilo Thurik 2007).

In the United States, congress enacted the Small Business Innovation Research (SBIR) in the early 1980's. Evidence from several studies shows this effort had a positive impact on advancing the U.S. biotechnology industry (Lerner and Kegler, 2000; Lerner, 1999; Wessner, 2000). In the former Soviet republics, government policies in support of new business activity were a key element in creating a conductive business environment and developing private business (Smallbone & Welter, 2010). Changes in the legislation in the 1990's led to a growing number of private enterprises in Estonia (Smallbone & Welter 2010). In Germany, a program known as "Me Inc." ("Ich-AG") was launched in 2003 and led to a significant increase in the number of startups by the unemployed (Bergmann & Sternberg 2006).

Policies that promote entrepreneurship activity can also lead to economic growth (Wennekers & Thurik 1999; Acs, & Szerb 2007) and thus higher levels of GDP per capita. The theory that entrepreneurship can be catalyst for economic growth is not new (Schumpeter 1934; Kirzner 1973; Hayek 1945). Both Shumpetarian and Kirznerian conceptions of entrepreneurship link startup activity with economic growth, but they differ in terms of explaining the way in which the entrepreneur emerges. A wide range of policies across countries have been enacted to promote entrepreneurship activity with the specific goal of economic growth and development (Gilbert, Audretsch & McDougall, 2004; Audretsch Grilo Thurik 2007). Although the extant literature in country level

entrepreneurship has explored this link empirically, evidence surrounding the direction of causality between entrepreneurship and economic growth is still contentious due to methodological issues that cannot be addressed without certain types of data and methodology (Schmitz 1989; Wennekers & Thurik 1999; Wong, Ho, & Autio 2005; Acs, & Szerb 2007; Carlsson et. al. 2009; Stam 2008; Audretsch & Thurik 2001). Based on this literature, we hypothesize that government intervention policy will yield to higher entrepreneurship activity and improved standards of living, as measured by GDP per capita.

H1: *Government entrepreneurship accelerator programs have a causal effect on the rate of total entrepreneurial activity within the country in which they are started, in comparison to other countries which have not adopted the government entrepreneurship accelerator program.*

H2: *Government entrepreneurship accelerator programs have a causal effect on the standards of living as measured by GDP per capita within the country in which they are started, in comparison to other countries which have not adopted the government entrepreneurship accelerator program.*

Studies which document the role of government in fostering the development of new small businesses and improving standards of living under the institutional regulatory lens remain a small subset of comparative international entrepreneurship literature. It is not surprising that this link has not been well established yet in the literature as country level comparative entrepreneurship studies are often confronted with a number of problems, such as reconciling different institutional backgrounds across nations, having limited longitudinal data (especially prior to the inception of GEM), and strictly segregating the

impact of government on national entrepreneurship activity from other contextual factors, making it difficult to measure the direct impact of government programs on aggregate entrepreneurial activity (Verheul et al., 2002b).

DATA & METHODOLOGY

Chile Context

Within Latin America, Chile is ranked as one of the least corrupt nations by the World Governance Indicator, leading in income per capita (Schwab 2018), competitiveness (Schwab 2018), and economic freedom (Miller, Kim, & Roberts 2018). In 2010, Chile became the first country in Latin America to join the OECD (OCED, 2010). The CIA World Factbook attributes Chile's position in Latin America to "strong financial institutions and sound policies" for the economy over the past several decades. Chile's governance has undergone significant changes over the course of 50 years which had a direct impact on its economy (CIA World Factbook, 2019). From 1973–90, Chile had a military government that privatized many state-owned enterprises and played a limited role in the economy (Castiglioni 2001). With the exception of promoting export policies and operating a few large state owned companies such as copper giant CODELCO (Hogenboom 2012), the government did not play an active role through intervention in the economy but rather had minimal regulations. After 1990, Chile experienced a transition to democracy by modifying their national governance to a four-year elected president (Hogenboom 2012). This change in the system of governance has allowed Chile to experience progress throughout the upcoming years with higher level of stability, freedom, and economic prosperity (The Heritage Foundation, 2013).

In 2006, the first female president, Michelle Bachelet, was elected from the socialist party (Tobar 2008). This period saw a number of changes, such as strong emphasis on human rights legislation especially against the military dictatorship that took place in previous years (Thomas & Adams 2010), an equal number of men and women in cabinet ministers (Tobar 2008), and social policies to support the majority of the lowest income population through minimum pension (Tobar 2008). Economically, Bachelet was most credited for creating a sovereign wealth fund known as the Economic and Social Stabilization Fund to accumulate fiscal surpluses (Solimano & Guajardo 2017). This fund allowed the country to finance new social and economic policies through the 2008 financial crises and beyond. The economy grew an average of 3.3% per year during her term (Schmidt-Hebbel 2006), included women to the universal pension coverage (Pribble & Huber 2010), provided 10% of 18 minimum wages for the first two children born to woman (Pribble & Huber 2010), eliminated the distinction between workers in the formal and informal economy to provide informal workers with family allowance and work injury protection (Pribble & Huber 2010) and decreased poverty. Bachelet's first term ended in 2010 with the election of Sebastián Piñera from the nationalist right party. Sebastián Piñera, a Harvard-trained economist, is the first conservative to hold office since the military rule in 1990 and is the first billionaire president for Chile. Coming from an economic and business background, president Sebastián Piñera placed special emphasis on creating a conductive environment for business and on economic growth (The Heritage Foundation, 2013). The economy grew an average of 5.3% per year during his term and it was under his governance that the government program Start-Up Chile was incepted (The Heritage Foundation, 2013).

Start-Up Chile Context

In 2010, the Chilean government launched a government funded program known as Start-Up Chile to provide equity free investments for new ventures, with the goal of attracting and retaining entrepreneurs to start their ventures in Chile. The program, fully funded by the Chilean government, was motivated to improve the economic conditions in Chile after the financial crisis, stagnation period, and high unemployment. The aim of Start-Up Chile is to revitalize Chile's economy and locate Santiago as the new center of innovation and entrepreneurship. Several years after the initiation of the program, Santiago became known as the "Chilecon Valley" and other countries around the world began to take notice and follow suit.

In an effort to create a world-class startup cluster and become a hub for innovation and technology, Start-Up Chile created an ecosystem of local municipalities, universities, organizations, and entrepreneurs in order to facilitate social interaction and the flow of skills, knowledge, and experiences amongst the variety of groups. The program aimed to change Chilean culture and attitudes towards entrepreneurship and reshaped values towards risk and return. The alumni of entrepreneurs of the program itself also helped create a change in the entrepreneurial culture in Chile. Entrepreneurs that have gone through the program began to create funds for financing new ventures, rather than opt for traditional investments, altering the status quo around investment in Chile. A follow-up fund called Start-Up Chile SCALE was introduced to offers entrepreneurs that have already passed through Start-Up Chile an additional 100,000 USD in funding to grow their businesses from Chile to Latin America and the rest of the world to achieve global scale.

Data

This study uses data from two sources: The Global Entrepreneurship Monitor (GEM) and The World Bank covering 11 years 2001-2016 for Latin America. The Global Entrepreneurship Monitor contains 18 years of data in over 100 countries. A joint project between Babson College (USA) and London Business School (UK), GEM data offers a globally harmonized data set designed to explore cross country variations in entrepreneurial activity and national context environments which can act as facilitators or barriers to startup activity. Worldwide, one in six, or 500 million of 6 billion, adults participate in entrepreneurial activity (Reynolds et al., 2004). The purpose of GEM is to provide empirical data on the *process* of new venture creation to aid in providing effective policies that promote entrepreneurial activity. This paper leverages GEM data to investigate the relationship between aggregate country level entrepreneurship activity and regulatory institutions.

Dependent Variable

For the first dependent variable, we use *Total Entrepreneurial Activity (TEA)* from the Global Entrepreneurship Monitor (GEM) as a proxy for the aggregate level of entrepreneurial activity in each country. This index captures entrepreneurship as a process, combining two stages of entrepreneurship: those who are in the in the process of setting up a new firm (nascent entrepreneurs) and those who are running a new startup (new business owning-manager of a new firm). Entrepreneurs who are engaged in both activities are only counted once. Thus, the Total Entrepreneurial Activity index is more of a measure of firm transition rather than strictly a measure of firm birth event. Moreover, the Total Entrepreneurial Activity index does not include firms that have paid salaries and wages for

more than 3.5 years, because it considers these businesses to be *established firms* which have overcome the liability of newness. Table 3-1 presents the two measures that Total Entrepreneurial Activity is composed of and defines each measure.

Insert Table 3-1 about here

For the second dependent variable, we use *GDP per capita PPP based on international dollars* from the World Bank as a proxy for the standards of living in each country. Nominal GDP per capita is a measure of total GDP divided by the population. GDP per capita PPP is a measure of GDP that is converted to international dollars using purchasing power parity, where "an international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States." Because price levels can vary significantly across different countries, this measure is used in order to offer a comparable measure for standards of living between countries, rather than nominal GDP which may misrepresent the real differences in per capita income. Rather than relying on simple exchange rates, purchasing power parity allows the accounting for price differences between countries and offers comparisons of what money can buy, by reflecting the relative prices of goods, services, and inflation rates within each nation.

Independent Variables

While there is no universally accepted set of measures for the institutional environment, scholars commonly rely on macro level variables such as a country's level of government effectiveness, judicial independence, bureaucracy, education, property rights, GDP per capita, unemployment, mortality, democracy, and political stability, amongst a variety of others (Glaeser et al. 2004; Kaufmann, Kraay, and Mastruzzi 2006; Kaufmann,

Kraay & Mastruzzi 2007). In this paper, to measure institutional quality, we specifically use six regional factors: unemployment, governance effectiveness, political stability, rule of law, voice and accountability, and property protection. These variables, with the exception of unemployment, are obtained from the The Worldwide Governance Indicators (WGI). The Worldwide Governance Indicators Project was created in 1996 by the World Bank, Natural Resource Governance Institute (NRGI) and Brookings Institution to measure dimensions of governance across 200 countries. The four dimensions of governance that we use—governance effectiveness, political stability, rule of law, and voice and accountability—range between −2.5 (weak) to 2.5 (strong) (Kaufmann, Kraay, and Mastruzzi 2006). The measure of unemployment, obtained from the World Bank, ranges between 1-100 percent and captures the percentage of the total labor force that is unemployed. The measure of property protection, obtained from the Fraser Institute, ranges from 0 to 10, indicating the extent to which property rights are protected. Table 3-2 presents the different measures of institutional quality used in this paper and their definitions.

Insert Table 3-2 about here

Governance effectiveness is one of the most common measures of institutional quality. Characteristics of effective governance include special attentiveness to accomplishing mission, both in formulating and implementing (Rainey and Steinbauer 1999), political autonomy from external pressures (Wolf 1993), treating individuals fairly and respectfully (Gold 1982), manages well the relationships with other allies and different constituents (Holzer and Callahan 1998) such as public, private, and nonprofit entities, and motivated to serve the general public (Rainey and Steinbauer 1999). On a macro-scale,

governance effectiveness bolsters institutional trust, making economic transactions riskier and increasing transaction costs (Coase, 1937). Measuring the uncertainty involved and its impact in costs id difficult to assess, making the decision to venture less attractive because of entrepreneurs will not be able to assess whether their overall payoff is equivalent or worth more than to their initial investment. As a result, we expect that higher governance effectiveness will be associated with higher total entrepreneurship rates and higher GDP per capita.

Political instability refers to the presence of events such as demonstrations against the government, violence, riots, (Taylor and Jodice 1983) military coups, and even frequency of government changes. Social unrest caused by political instability can reduce the incentive to invest due to higher risk and uncertainty that firms will pay by operating in such environment and deter economic growth. Generally, democracy is associated with higher economic growth and development because it is more likely to offer a stable form of government for investment. In addition, democracy generates more predictability; a commitment redistribution through lower barriers to entry and competition; an accountability to the public rather than elites; a higher investment in human capital and public goods; and the preservation of the rule of law and protection property rights, especially relative to autocratic regimes (Alesina et. al. 1992; Alesina and Rodrik 1994; Barro 1991; Ozler and Rodrik 1992). As a result, we hypothesize that political stability, voice and accountability, and rule of law, and property rights will be associated with higher levels of entrepreneurship activity and higher levels of GDP per capita.

Significant ambiguity surrounds the theoretical relationship between unemployment and aggregate entrepreneurial activity (Storey 1991; Audretsch et al. 2005)

with contrasting theories as to whether unemployment leads to a positive or negative impact on startup activity. One line of literature suggests that an increase in unemployment will push individuals to seek other forms of income, primarily self-employment, thus increasing the rate of entrepreneurship (Reynolds, Miller and Makai, 1995; Reynolds, Storey and Westhead, 1994; Hamilton, 1989; Evans and Leighton, 1989 and 1990). Another line of literature suggests that an increase in unemployment will lead to a decrease in the rate of entrepreneurship, typically known as the Schumpeterian effect. The endogenous two-way causality in the relationship between unemployment and entrepreneurship (Thurik, Carree, van Stel, and Audretsch 2008) creates a common division in the literature and results remain inconclusive. We follow push entrepreneurship theorists (Reynolds, Miller and Makai, 1995) and hypothesize that unemployment will be associated with lower total entrepreneurship rates and lower GDP per capita.

Method

This paper utilizes a difference in difference model to evaluate the impact of the government intervention program, Start-Up Chile, on the rate of entrepreneurial activity and standards of living. The use of this type of model in research design has become more prevalent after the publication of Card (1990) and Card and Krueger (1994) seminal difference in difference study, which examines the impact of government policy interventions, specifically minimum wage and immigration, on employment in the United States. Difference in difference models operate by comparing the difference in outcomes before and after the policy intervention, for two groups, those effected by the intervention, known as the treatment group, and those not effected by the intervention, known as the

control group. This method has become more popular to study policy questions because it can provide a causal estimate while isolating policy interventions and accounting for changes in the environment due to factors other than the policy intervention.

The assumption required for difference in difference models to provide an unbiased estimate is that in the absence of Start-Up Chile, the unobserved country varying factors would impact the treatment and comparison groups similarly. In our model, our two groups are indexed by treatment status zero and one, where zero refers to the control group Brazil-Argentina in one model and South America in the other model, to represent countries who have not received the startup intervention program, and one refers to the treatment Chile, to represent the country which does receive the startup intervention program. We run two difference in difference models for each dependent variable, using a different control group in each model. In both models, Chile is the treatment group in which the policy intervention takes place.

However, in the first model, South America is used as a control group. In the second model, only Brazil and Argentina are used as a control group. Because the pre-policy means of startup activity in South America are not parallel to the pre-policy means of startup activity in Chile, this violates a key assumption of the difference in difference model, making the estimates unreliable. In the second model, we then specifically choose Brazil and Argentina as a control group for Chile because their pre-policy trends of startup activity follow a similar path as Chile, satisfying the parallel trends assumptions. We rely on the estimates from the second model which use Brazil and Argentina as a control group.

We implement these checks to assess the validity of the control groups. Ideally, the target and control groups should be parallel, following similar trends prior to the

implementation of policy, and diverge after the policy has been enacted. The selection of appropriate target and comparison groups is fundamental to a valid implementation of a difference in difference model. Figure 3-1 and Figure 3-2 illustrates the validity of these checks. We estimate the model with the following equation:

$$Y_{it} = \beta_0 + \beta_1(\text{treatment}_i * \text{policy}_t) + X_{it}\boldsymbol{\Omega} + \mu_i + \lambda_t + \varepsilon_{it}$$

where treatment_i represents Chile and policy_t represents the Start-Up Chile program that was incepted in 2010. We set the year 2011 as the first year of policy (represented in the dashed line in figure 3-1 and 3-2), lagging policy one year in order to allow for the policy to take effect. We estimate this equation twice, once for each dependent variable, where Yit posits total entrepreneurship activity in our first model, and GDP per capita (PPP) in our second model. country *i* during year *t*. In addition, entrepreneurial activity depends on a number of country level characteristics (X) such as unemployment, property right protection, political stability, rule of law, corruption, and voice and accountability. We account for all these variables in our model, as represented by $X_{it}\boldsymbol{\Omega}$, and include country fixed effects (μ_i) to account for unobservable factors which vary across countries but remain constant over time and year fixed effects (λ_t) to account for unobservable factors that change over time but remain constant over countries. We cluster our standard errors to correct for possible heteroscedasticity and autocorrelation, adding robustness to our model and further protecting against biased estimates.

As a robustness check and a way to provide a more precise understanding of the impact of the government accelerator program Start-Up Chile, we employ an event study. The event study tests the key identifying assumption underlying the difference in difference analysis, that is the parallel trends assumption. More specifically, it tests

whether the control countries (those that have not enacted the government policy) are a valid counterfactual for the treated country (that which has enacted the government policy). This assumption can be indirectly investigated through checking whether the trends in outcomes were similar across the treated and control countries prior to the policy implementation by observing the policy leads in the event study. In addition to validating the key assumption, the event study also emphasizes the policy response, which in this case illustrates whether startups and standards of living are actually increasing over time. The event study provides year by year visual evidence of which period in time the strongest impact of the policy materializes after policy enactment.

RESULTS

Table 3-3 presents the summary statistics for the difference in difference model. By comparing the means for the first dependent variable, total entrepreneurship activity, of treatment group Chile to the first control group South America, we notice a significant difference with South America being roughly 5 percent higher than Chile. It should also be noted that when the total entrepreneurship activity rates of South America are observed year by year rather than as an overall average, it becomes more apparent that South America and Chile share different patterns as shown in figure 3-1. However, when comparing treatment Chile to the second control group, Brazil-Argentina, we notice that their total entrepreneurship activity means are much closer, with less than a one percent difference between them. Figure 3-1 presents visual evidence of the treatment group Chile, and the two control groups Argentina-Brazil and South America for our first dependent variable, total entreprenership activity. The graphs provides a visual illustration of the

validity of the control group in satisfying the parallel trend assumption, where the control group Argentina Brazil shares a parallel pattern of total entreprenrship activity with the treatment group Chile year by year before the intervention, and a distinct contrasting pattern after the intervention, further validating them as a choice of a control group for this model.

Similarly, we compare the means of the treatment group Chile and the control groups South America and Brazil-Argentina for the second dependent variable GDP per capita (PPP). By compare the means of treatment group Chile to the first control group South America, we notice a significant difference, with South America being about 2400 international dollars lower than Chile. However, when we compare the GDP per capita (PPP) means of Chile to the second control group Argentina-Brazil, we notice a smaller gap, with Argentina-Brazil being only about 700 international dollars lower than Chile. When we graph the GDP per capita year by year rather than only observe the overall mean, it becomes more apparent that Brazil-Argentina serve as a better control group for Chile than South America. This is presented in figure 3-2. Treatment group Chile and control group Argentina-Brazil follow a similar path in terms of pre-policy trends, and diverge post-policy after implementation. GDP per capita (PPP) rates in South America also follow in similar pattern as Chile pre-policy, but do not diverge distinctively after policy implementation.

Insert Table 3-3 about here

Insert Figure 3-1 about here

Insert Figure 3-2 about here

Table 3-4 presents the estimated results from the first difference in difference model, which examines the impact of policy on total entrepreneurship rates. Results confirm the first main hypothesis (H1), suggesting that government entrepreneurship accelerator programs have a causal effect on the rate of total entrepreneurial activity within the country that they are started, in comparison to other countries which have not adopted the government entrepreneurship accelerator program. More specifically, this study finds that the 2010 Start-Up Chile program increased *the rate of total entrepreneurial activity* by approximately *8.65 percen*t more in Chile than it did in Brazil and Argentina. These results are significant at the one percent level. In addition to this finding, the coefficient estimates of the control group by country in the model distinctly highlight that there was no significant change in total entrepreneurial activity in the individual countries which have not adopted the policy. This further bolsters the main hypothesis and illustrates the significant impact of the intervention program in Chile on total entrepreneurial activity.

Insert Table 3-4 about here

Table 3-5 presents the estimated results from the second difference in difference model, which examines the impact of policy on GDP per capita PPP based on international dollars. Results confirm the second main hypothesis (H2), suggesting that government entrepreneurship accelerator programs have a causal effect on the standards of living as measaured by GDP per capita (PPP) within the country that they are started, in comparison

to other countries which have not adopted the government entrepreneurship accelerator program. More specifically, this study finds that the 2010 Start-Up Chile program increased *the rate GDP per capita (PPP)* by approximately 3,813 *international dollars* more in Chile than it did in Brazil and Argentina. These results are significant at the 1 percent level.

Insert Table 3-5 about here

Of the measures used to control for institutional quality, we only find evidence for a relationship between property rights and entrepreneurship activity in our first model, and a relationship between voice and accountability and GDP per capita (PPP) in our second model. Results of our first model show that an increase in protection in property rights is associated with a decrease in entrepreneurial activity. More specifically, a ten percent increase in the protection of property rights index is associated with a 2.02 percent increase in entrepreneurship activity. These results are significant at the ten percent level. This supports the theory that a reward structure for new ideas and knowledge enforced through property right laws encourages entrepreneurship activity (Stephan and Levin 1995). Results of our second model show that an increase in voice and accountability is associated with a decrease in entrepreneurial activity. This finding is in contrast with the common theories about democracy and economic activity, which predict that a citizen's voice, freedom and ability to participate in government leads to higher rates of economic participation and economic prosperity. Generally, democracy is associated with higher rates of economic development and growth (Halliwell 1994; Barro 1991; Ozler and Rodrik 1992). More research is required to understand why this finding occurs in this sub region of Latin America.

Table 3-6 presents the estimates of the event study. Results of the event study verify the key underlying assumption of the difference in difference models and confirm the findings of both model one and model two. We find no significant results in the leads or the years prior to the policy enactment, and thus no evidence of policy endogeneity. One year after the policy enactment, we find significant outcomes for both dependent variables, startups as measured by TEA and standards of living as measured by GDP per capita (PPP). We find that these significant outcomes are consistent all throughout the five years after the policy enactment, and observe increases in magnitude over the years, reaching an all time high in year four. The confirms that the policy has had an impact in increasing both startups and standards of living over the years. By disentangling the overall average effect of the difference in difference model year by year through the event study, we can observe that the policy's impact continued to increase over the years, and had the strongest impact four years after the enactment. In sum, the event study results confirm the parallel pre-trends for both models, confirms the absence of policy endogeneity for both models, and unpacks the average effect of the impact of policy on startups and on standards of living from the difference in difference model into a year by year effect to illustrate the stages of the policy materialization.

Insert Table 3-6 about here

DISCUSSION

The introduction of a government program through policy at the country is not an ordinary event. It is exogenous shock that provides a natural experiment for researchers.

While scholarly research has looked at the impact of institutions in general, less attention has been paid to the impact of direct intervention through new policy at the country level. Studies that examine the institutional regulative environment explore a structure that is a result of an accumulation of the country's governance choices over a long period of time, such as educational progress and technological development. Fewer studies explore the effects of direct government intervention on startup activity, which can be especially useful for countries seeking to facilitating entrepreneurship in their own economy through policy.

In this paper, we focus specifically on Start-Up Chile, a government accelerator program that was incepted in 2010 to revitalize the Chilean economy. Drawing on insights from institutional theory (North 1991; Scott 2008), we develop and test a model that explores the relationship between the government intervention program entrepreneurship rates. We then go further by testing whether this intervention has improved the standards of living as measured by GDP per capita. In doing so, we clarify the relationship between government intervention, entrepreneurship activity, and standards of living, thereby contributing to the theory development in the role of government in entrepreneurship and economic development.

The significant impact of policy on entrepreneurship activity and standards of living

Results from our study overwhelmingly point to the importance of government policy in entrepreneurship activity. In the context of regulative institutional theory (North 1991; Scott 2008), government intervention through a country level accelerator program increased both the rate of entrepreneurship activity as well as the standards of living. While governments cannot force innovation and small business creation to take place within their

economy, they can facilitate it by playing an active role in the creation of a rich and conductive environment which encourages risk taking and ensures a payoff entrepreneurial efforts (Audretsch et al. 2007; Busenitz et al. 2000, Dana, 1987, 1990; Casson et. al. 2010).

This study illustrates that aggregate entrepreneurship in society is not only a result of individual efforts in recognizing market opportunities, but is also an outcome of the social and the political structures that determine opportunities and allocate resources (Baumol 1990; Baumol et al., 2009; Sobel, 2008). Governments can promote entrepreneurship activity by creating certain economic conditions (Casson 1982; Casson & Wadeson 2007; Casson & Rose, 1997) and ensuring that entrepreneurs' risk taking and efforts will be rewarded. Favorable incentives such as minimizing inception complexity, reducing risk, and providing capital resources are examples of the ways in which government can facilitate entrepreneurship activity through policy (Foster, 1988; Busenitz et al. 2000, Dana, 1987, 1990).

Furthermore, results from our study point towards the importance of government policy in improving standards of living through entrepreneurship policy. This is in line with Schumpeters (1934) and Kirzners (1973) theorization of the role of the entrepreneur as an engine for economic development. These results are also in line with the conceptualization of the GEM framework, which emphasizes that environment condition are key in facilitating entrepreneurship activity and more stimulating economic growth. A number of studies have shown the impact of entrepreneurship activity at the national level on economic growth (Kirchhoff 1994; Audretsch et al. 2002; Carree et al. 2002; Wong et al. 2005; Stel, Carree, Thurik 2005; Bruns, Bosma, Schramm 2017; González-Pernía & Peña-Legazkue 2015; Valliere & Peterson 2009), however, the direction of causality

between entrepreneurship and economic growth remains contentious in the literature. Our results are in line with studies that find entrepreneurship to be an engine for economic growth, however, we examine this impact from a policy perspective and isolate the impact to understand the direction of causality. After controlling for unobservable time invariant differences across countries, such as a country's history, religion, and culture as well as for unobservable differences that do not change over countries but vary across time, such as the world financial crises, we find that government startup policy not only led to a rise in entrepreneurship rates, but an increased GDP per capita.

Our study provides evidence against the common Chicago school argument that government intervention will always be counterproductive if not harmful to the economy. We find that government intervention both increased entrepreneurship activity and improved standards of living through a 'big push,' or large scale public investment (Rosenstein-Rodan, 1943; Stiglitz 1996; Acemoglu & Verdier 2000; Samuelson 1966). We interpret these results to be a successful example of a role of government that strikes a balance between competition and intervention (Stiglitz 1996; Acemoglu & Verdier 2000; Samuelson 1966).

LIMITATIONS, IMPLICATIONS AND CONCLUSION

Our findings are support North (1991), Scott (1995), Baumol (1990), and Casson (1982) theorization, which emphasize the importance of regulatory institutions, or more broadly a conductive environment, for entrepreneurial activity to thrive. We find that the macro level environment, shaped by government policy, has a significant impact on the total entrepreneurial activity of nations (Minniti, Bygrave, & Autio, 2006; Minniti, 2008).

More specifically within regulative institutions, we examined the direct impact of government on the creation of a conductive entrepreneurial environment to increase entrepreneurship activity and standards of living through policy intervention. We achieve this by comparing total entrepreneurial activity in Chile, before and after the policy intervention Start-Up Chile, with total entrepreneurial activity in South America nations which have not received the entrepreneurship facilitating program.

Our study exploits this natural experiment and examines this phenomenon over a range an fifteen-year period to account for changes over time. We find that 2010 Start-Up Chile program increased the rate of total entrepreneurial activity by approximately 8.65 percent more in Chile than it did in Brazil and Argentina. This finding is further bolstered through the specific 'by country' division in the model, which allowed us to observe that there was no significant change in total entrepreneurial activity in the individual countries which have not adopted the policy. In addition, we also find that the 2010 Start-Up Chile program increased GDP per capita (PPP) by approximately 3,813 international dollars more in Chile than it did in Brazil and Argentina, improving the overall living standards of the country.

In addition to these main findings, we concurrently discover other macroeconomic variables in the environment that are associated with total entrepreneurial activity, but require further investigation to determine whether this association can be claimed as a direct causal relationship. We find that an increase in a country's unemployment and property rights protection is associated with an increase in total entrepreneurial activity. This is relatively interesting because although there is a significant amount of literature examining the link between unemployment and startup activity, the literature has not

consolidated on the direction of this link. It is still not definitive whether unemployment leads to startup activity or whether startup activity leads to unemployment. While we cannot fully claim one direction over the other through our current study, our results do show that it is the increase in unemployment and an increase in property rights is associated to an increase in startup activity. Further studies are required to test the nature of this relationship in terms of direction and causality.

Our study is not without limitations and those limitations present interesting lines of futures research. First, although we find that government intervention has increased entrepreneurship activity in general, we do not know why this increase primarily benefited male entrepreneurs. Start-Up Chile entrepreneurs that are female make up less than 25 percent, with each yearly cohort consisting of 15-23 percent of whom are women. The rareness of finding parallel trends across countries for different genders in order to test for the impact of new policy is a limitation of this type of model. We believe that there is much work to be done for future studies in this area to understand the gender gap in Start-up Chile entrepreneurs. Another limitation comes from our data. We were not able to include the most recent years in our model (2014-2017) due to missing data points for Chile, Brazil, and Argentina. This study can be improved through balancing techniques for missing data in order to expand our panel from eleven years to sixteen years and incorporate the most recent impacts of the policy into the analysis. Third, we find that some of our control variables, namely unemployment and property rights, were significant and thus could potentially be important determinants of entrepreneurship activity. Further studies are required to test this relationship and understand their impact more profoundly.

Limitations notwithstanding, our study demonstrates that regulative institutions, and specifically, national policy is a predictor for economic development. We find that government intervention through large scale investment in an accelerator program has a positive impact on entrepreneurship activity rates and on standards of living. These findings have important implications for countries aspiring to develop their economy. Similar to the success of the East Asian economies and the success of Chile, countries can promote economic development through an active government. Our research supports studies that suggests that government intervention can in fact be productive in facilitating entrepreneurship activity and driving economic growth. As opposed to relying on the notion that "entrepreneurs are born," (Aldrich, 2011), and assuming the environment away (Peng, 2003), our research makes national context at the heart of investigating new business activity (Welter, 2011; Thurik and Verheul, 2003), to understand how entrepreneurship can be cultivated through policy.

Figures and Tables

Total Entrepreneurship Activity	Nascent Entrepreneurs	The percentage of the population aged 18-64 who are who have taken steps to start a new business but have not yet paid salaries or wages for more than three months
	New Business Owner-managers	The percentage of the 18-64 population aged 18-64 who have paid salaries and wages for more than 3 months and less than 3.5 years

Table 3-1: Unpacking total entrepreneurship activity

Variables	**Definition**	**Source**
Total Entrepreneurship Activity	The percentage of population aged 18-64 who are either a nascent entrepreneur or owner-manager of a new business	Global Entrepreneurship Monitor
GDP per capita (PPP)	Total GDP divided by the total population converted to international dollars using purchasing power parity, where "an international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States."	World Bank
Unemployment	"A percentage between 1-100 of the total labor force unemployed"	World Bank

Protection of Property Rights	An index ranging between 0 to 10 that measures that measures the extent to which property rights are protected by the rule of law.	Fraser Institute
Governance Effectiveness	An index ranging between -2.5 to 2.5 that measures the "quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies."	Worldwide Governance Indicators by the World Bank
Political Stability and Absence of Violence	An index ranging between -2.5 to 2.5 that measures the "perceptions of the likelihood of political instability and/or politically-motivated violence"	Worldwide Governance Indicators by the World Bank
Voice and Accountability	An index ranging between -2.5 to 2.5 that measures the "perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media"	Worldwide Governance Indicators by the World Bank
Rule of Law	An index ranging between -2.5 to 2.5 that measures the "perceptions of the extent to which agents have confidence in and abide by the rules, in particular the quality of contract enforcement, property rights, the police, and the courts, and likelihood of crime"	Worldwide Governance Indicators by the World Bank

Table 3-2: A description of variables and their sources

	Startup rates in		
Variable	South America	Argentina-Brazil	Chile
Startup	19.26	14.34	13.87
GDP per capita (PPP)	11993	14244	13560
Protection of Property Rights	4.193	3.951	6.208
Unemployment	8.167	9.839	8.480

Political Stability and Absence of Violence	-0.3336	-0.0866	0.6616
Governance Effectiveness	-0.1423	-0.0903	1.192
Voice and Accountability	0.2259	0.4016	1.086
Rule of Law	-0.3467	-0.4949	1.310

Table 3-3: Pre-policy means of the dependent variables startup rates and GDP per capita illustrate that Argentina-Brazil is more similar as a control group for target group Chile, than South America as a whole.

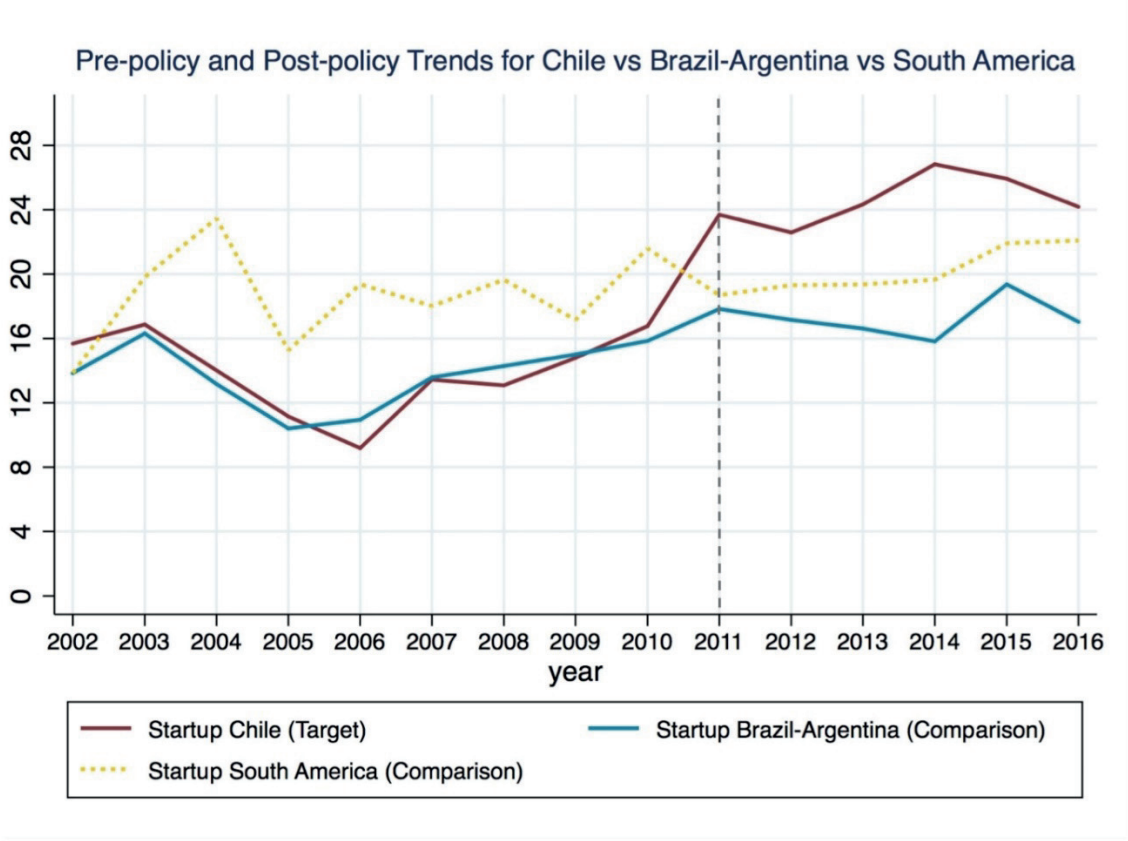


Figure 3-1: Visual evidence is presented to further illustrate the validity of the control group in satisfying the parallel trend assumption for the first dependent variable, Total Entrepreneurship Activity. Target group Chile and control group Argentina-Brazil follow a similar path in terms of pre-policy trends, and diverge post-policy after implementation. Startup rates in South America, on the other hand, follow in a distinctively unique pattern.

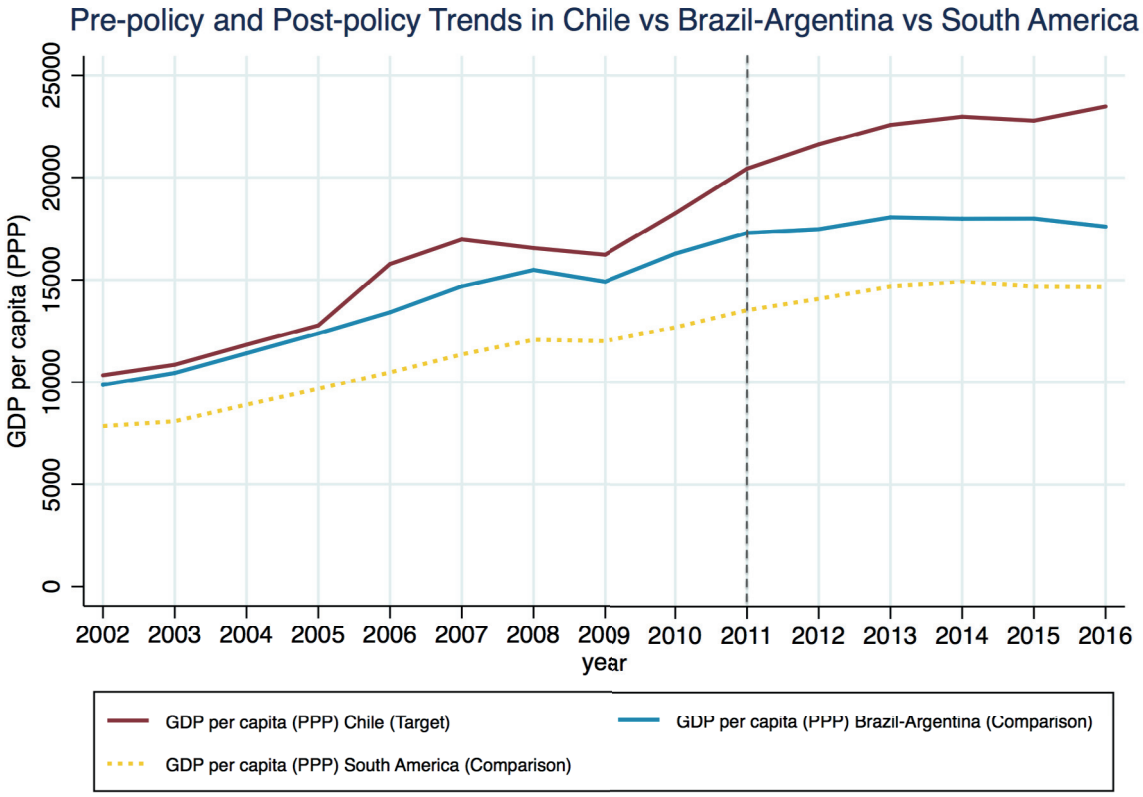


Figure 3-2: Visual evidence is presented to further illustrate the validity of the control group in satisfying the parallel trend assumption for the second dependent variable, GDP per capita (PPP). Target group Chile and control group Argentina-Brazil follow a similar path in terms of pre-policy trends, and diverge post-policy after implementation. GDP per capita (PPP) rates in South America also follow in similar pattern as Chile pre-policy, but do not diverge distinctively after policy implementation. The GDP per capita (PPP) rates in South America and Chile seem to be parallel all throughout the years, before and after the policy was implemented, making Argentina-Brazil a more suitable control group.

	South America			Brazil-Argentina		
DV startups (TEA)	(1) Controls	(2) Controls with Country & Year FE	(3) Full Model	(1) Controls	(2) Controls with Country & Year FE	(3) Full Model
chile_post2011			9.603***			8.646***
			(1.886)			(0.612)
Protection of property rights	-0.220	0.540	0.850	-2.157	-2.157	-2.021*
	(0.737)	(1.248)	(1.816)	(1.357)	(1.162)	(0.661)
Unemployment	-1.028***	-0.481	-0.184	-0.148	-0.148	0.785
	(0.209)	(0.480)	(0.554)	(0.512)	(0.762)	(0.277)
Political Stability	-2.378	-3.019	2.317	-6.830	-6.830	3.529
	(1.771)	(3.406)	(3.587)	(4.089)	(6.123)	(1.880)
Government Effectiveness	1.126	-5.196	-5.694	0.0582	0.0582	-6.099
	(3.550)	(5.006)	(9.420)	(6.078)	(2.825)	(2.618)
Voice and Accountability	-10.28**	-12.82	-14.68	6.959	6.959	7.405
	(4.016)	(8.276)	(13.46)	(10.22)	(2.815)	(9.175)
Rule of Law	4.492	14.25***	13.19**	2.128	2.128	1.235
	(3.107)	(4.729)	(5.004)	(5.216)	(4.768)	(1.735)
Constant	32.24***	22.18**	14.51	25.64**	25.64	12.61
	(4.249)	(10.03)	(17.58)	(10.94)	(8.809)	(7.253)
R-squared	0.443	0.751	0.791	0.787	0.787	0.919
Year FE	No	Yes	Yes	No	Yes	Yes
Country FE	No	Yes	Yes	No	Yes	Yes

Standard errors are in parenthesis and clustered by country for robustness and heteroscedasticity.
Country and year and dummies are included and suppressed to save space.
*** p<0.01, ** p<0.05, * p<0.1

Table 3-4: Estimated effect of government policy on startup rates as measured by total entrepreneurship activity in Chile in contrast to (a) South America and (b) Brazil-Argentina, 2001-2016

	South America			Brazil-Argentina		
DV GDP per capita (PPP)	(1) Controls	(2) Controls with Country & Year FE	(3) Full Model	(4) Controls	(5) Controls with Country & Year FE	(6) Full Model
chile_post2011			3,383***			3,813***
			(826.4)			(160.3)
Protection of property rights	927.4**	927.4	-162.2	-575.2	707.3	487.0
	(368.1)	(799.4)	(254.2)	(661.0)	(544.4)	(279.7)
Unemployment	179.1*	179.1	-338.9*	-1,211***	-405.5	-97.26
	(101.9)	(277.0)	(150.2)	(238.5)	(205.7)	(92.06)
Political Stability	4,357***	4,357*	-1,471	-5,771**	-1,705	1,820
	(951.7)	(2,155)	(904.7)	(2,666)	(1,260)	(701.2)
Government Effectiveness	4,607**	4,607	-929.7	8,726**	3,929	1,574
	(1,885)	(3,260)	(1,180)	(3,909)	(3,260)	(2,179)
Voice and Accountability	-5,342**	-5,342	323.7	-3,847	-5,028**	-5,063*
	(2,266)	(6,414)	(1,188)	(7,090)	(1,013)	(1,526)
Rule of Law	-2,248	-2,248	2,313	-1,902	141.2	-681.6
	(1,662)	(3,584)	(1,349)	(2,987)	(3,463)	(425.9)
Constant	9,551***	9,551*	14,931***	29,576***	12,371*	11,369**
	(2,084)	(4,915)	(3,078)	(5,254)	(3,171)	(1,813)
R-squared	0.303	0.409	0.973	0.421	0.957	0.989
Year FE	No	Yes	Yes	No	Yes	Yes
Country FE	No	Yes	Yes	No	Yes	Yes

Standard errors are in parenthesis and clustered by country for robustness and heteroscedasticity. Country and year and dummies are included and suppressed to save space.

*** p<0.01, ** p<0.05, * p<0.1

Table 3-5: Estimated effect of government policy on standards of living as measured by GDP per capita (PPP) in Chile in contrast to (a). South America and (b). Brazil-Argentina, 2001-2016

	Startup (TEA)	Standards of living (GDP per Capita PPP)
3 years before	0.847	-659.7
	(3.670)	(1,470)
2 years before	0.378	-425.9
	(1.878)	(1,795)
1 year before	-0.283	511.9
	(2.687)	(1,579)
Year of policy enactment	5.949	2,219
	(3.177)	(1,061)
1 year after	7.123*	3,579**
	(1.966)	(595.5)
2 years after	8.825**	3,865**
	(2.014)	(513.7)
3 years after	12.28**	4,153**
	(1.761)	(777.0)
4 years after	8.346**	3,519**
	(1.431)	(782.9)
5 years after	8.988**	4,886***
	(1.308)	(53.41)
Constant	13.20	10,322
	(8.225)	(3,982)
R-squared	0.936	0.993
Year FE	Yes	Yes
Country FE	Yes	Yes

Standard errors are in parenthesis and clustered by country for robustness and heteroscedasticity.
Country and year and dummies are included and suppressed to save space.
*** p<0.01, ** p<0.05, * p<0.1

Table 3-6: The event study disentangles the timing of the difference in difference model, serving as a robustness check for both policy endogeneity and the parallel trends assumptions. It presents the leads and lags to illustrate yearly the significance and magnitude of the effect of policy.

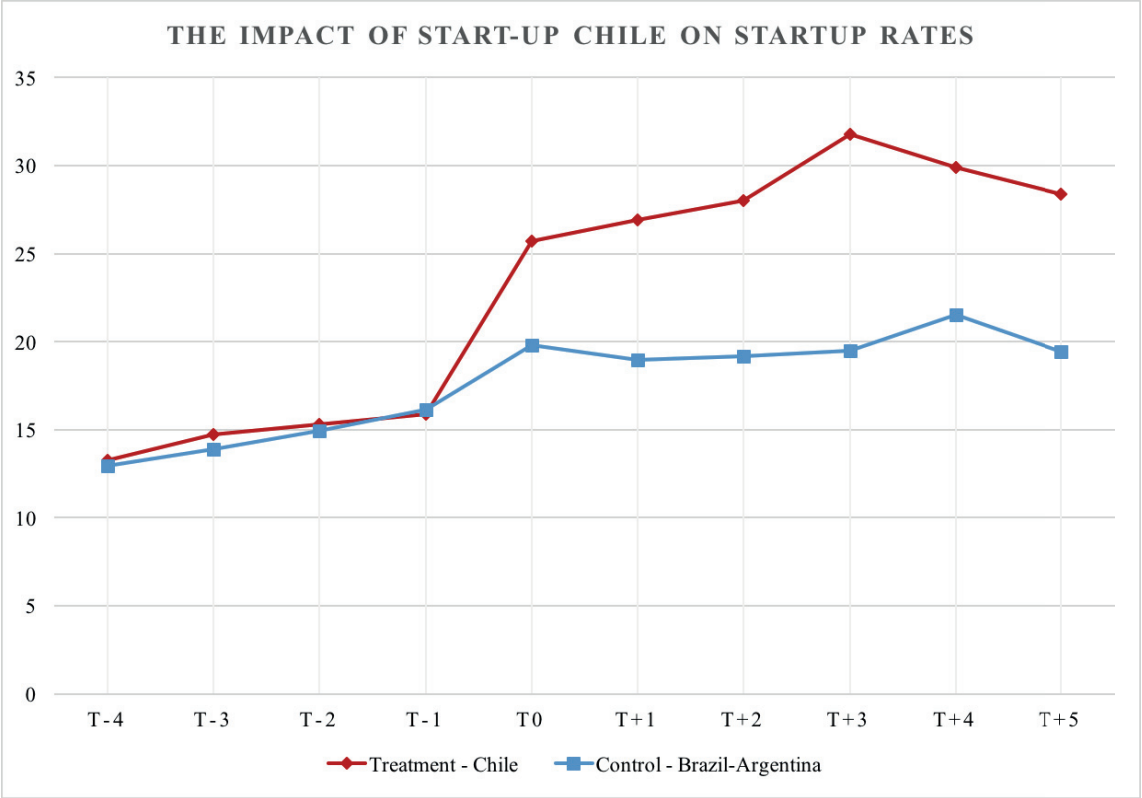


Figure 3-3: The disentangling of the impact of Start-Up Chile on startup rates year by year. Where there are effects, they only appear to materialize at beginning of the adoption of policy in 2010 (t-1), which is validating. Furthermore, the event study emphasizes key dynamics in the policy response. The strongest impact of the policy materializes three years post enactment.

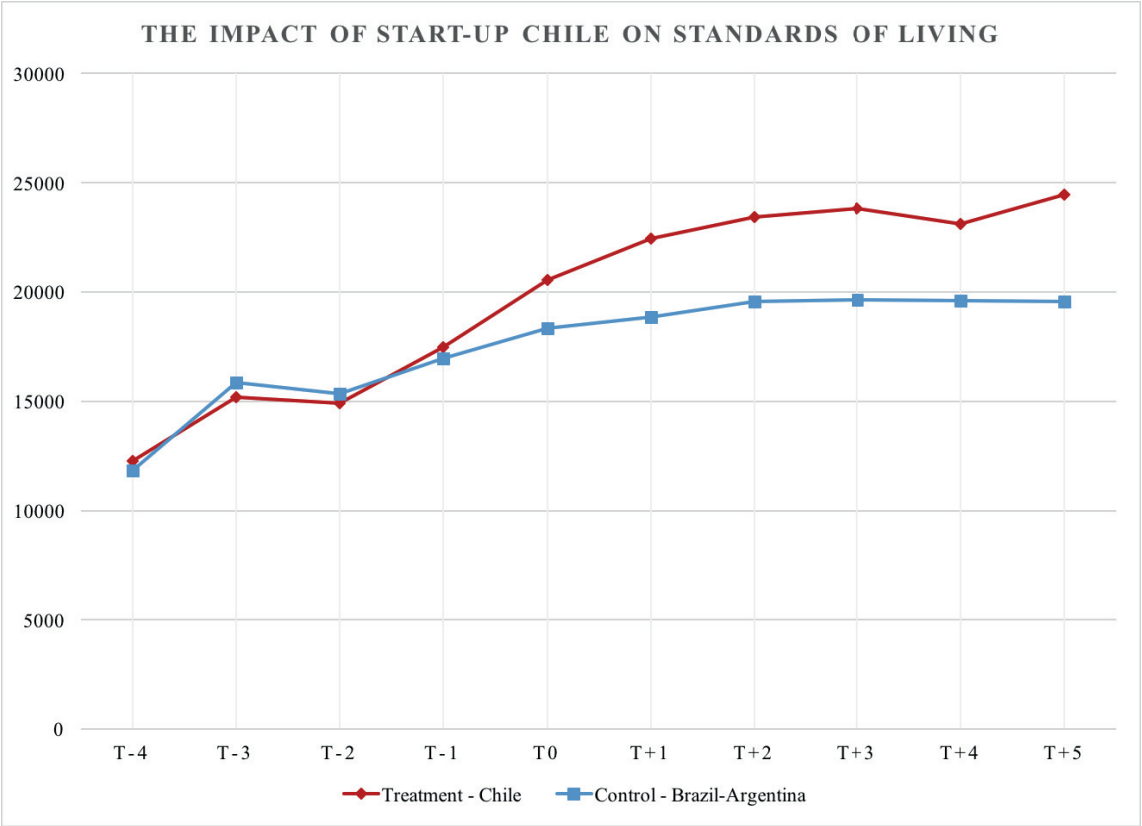


Figure 3-4: The disentangling of the impact of Start-Up Chile on GDP per capita (PPP) year by year. Similar to figure 3-3, the effects only appear to materialize at beginning of the adoption of policy in 2010 (t-1), which is validating. The strongest impact of the policy materializes three years post enactment.

CHAPTER 4

THE CONTEXT FOR ENTREPRENEURIAL ACTIVITY: AN EMPIRICAL EXPLORATION

ABSTRACT:

The choice to engage in entrepreneurial activity is shaped through a multiplicity of contexts. The contextual environment can be unpacked into a variety of contexts, such as the institutional context, which includes the regulative, normative, and cognitive institutions (North, 1991; Scott 1995), the social context which includes social relations with family and others in society (Granovetter 1985), the business context, such as the market and industry, and spatial context, which consists of the level of agglomeration and geographic clustering (Johannisson et al., 2002). One of the main contributions to the entrepreneurship literature is Friederike Welter's theorization of the contexts for entrepreneurship. Welter theorizes that there are four dimensions of "where" context for entrepreneurship, namely institutional context, social context, business context, and spatial context, and that these contexts have a significant impact on entrepreneurial decisions. The different contexts in which the entrepreneur is embedded can be an asset or a liability for new venture creation, and can encourage or discourage the emergence of a particular type of entrepreneur. Using a rich eight-year longitudinal dataset (2008-2015) for 78 countries from GEM, the World Bank, The IMF, and the Fraser Institute, we run a fixed effects regression to test the impact of the four contexts on the different types of entrepreneurship activity, namely: Total Entrepreneurship Activity, New Entry Business Density, Opportunity Entrepreneurship, and Necessity entrepreneurship. We find that each context promotes or dissuades a particular type of entrepreneur.

INTRODUCTION

Over the past several decades, there has been a growing interest in the role of context for entrepreneurial activity. The newly founded emphasis on context is a result from the growing body of international scholars outside of North America, more particularly in European business schools, who are "exposed to taken for granted assumptions" (Welter & Gartner, 2016) which do not apply to them. This shed light on the magnitude that these assumptions have shaped previous literature, and resulted in a findings or outcomes that are limited in scope and not valid in other contexts. In addition, because entrepreneurial situations were so different, finding one generalized common individual characteristic or assuming a "one size fits all" entrepreneur who could be entrepreneurial in all conditions seems highly unlikely (Welter & Gartner, 2016). "We, at last, have recognized that evidence and theories based in the US are not necessarily applicable elsewhere — or maybe, I should say, US reviewers and journals have come to accept that this is not the case." (Welter & Gartner, 2016). This lead to the disruption of universalized claims of entrepreneurship activity in the extant literature and brought context to the center of entrepreneurship (Davidsson 2003; Ucbasaran, Westhead, & Wright 2001) and general management scholarship (Bamberger 2008; John 2001).

Within entrepreneurship, a number of scholars have theorized on the relationship between entrepreneurial action and context by highlighting impact of the locality and embeddedness of entrepreneur on opportunity (Gartner, 1988; Dacin, Ventresca, & Beal 1999; Aldrich & Cliff 2003; Jack & Anderson, 2002). Contrary to the psychological-economic perspective of the entrepreneur as a lone wolf who ventures on their own, the social structure perspective accounts for the ways in which the variety of contexts, such as

the historical, political, spatial, institutional, and social, shape the creation of new ventures, and the ways that the entrepreneur draws upon local and regional resources to recognize and pursue an opportunity.

In management literature, context is referred to the "circumstances, conditions, situations, or environments that are external to the respective phenomenon and enable or constrain it" (Welter, 2011). Context can also be defined as a boundary of action for the entrepreneur to exploit an opportunity, or the "surroundings associated with phenomena" (Cappelli & Sherer, 1991). This surrounding or situational factors can include workplace conditions (Elsbach & Pratt, 2007), labor markets (Bacharach & Bamberger, 2004), or formal regulations (North, 1991). The entrepreneur is faced with multiple contexts, including the social at the individual level, the organizational or business at the meso level, and the economic, political, ethical, and institutional at the macro level (Schegloff 1991).

The purpose of this paper is to empirically examine the impact of the multiplicity of contexts on entrepreneurship activity. Despite the voluminous empirical research that has examined the impact of one context, such as the institutional, on entrepreneurship activity, there are a paucity of studies that investigate the impact of the multiplicity contexts at different levels on different types of entrepreneurs. We investigate the research question: what is the impact of the institutional, social, business, and spatial context on total entrepreneurship activity, opportunity entrepreneurship activity, necessity entrepreneurship activity, and new business entry density? This allows us to understand not only the effect of the multiplicity of contexts over time, but also identify how each context impacts the different types of entrepreneurs similarly or differently.

First, this paper contributes by empirically verifying Welter's (2011) four dimensions of "where" framework. We rigorously test the impact of the four contexts on four different types of country-level entrepreneurship activity using a rich longitudinal seven-year dataset and a fixed effects model and find that all four contexts do matter. Second, this paper contributes theoretically by extending Welter's (2011) four dimensions' framework by finding that while overall contexts do matter — different contexts are more important for different types of entrepreneurs. We extend Welter's (2011) framework theoretically by providing a prototype for each type of entrepreneur: the necessity entrepreneur, the opportunity entrepreneur, the formally registered entrepreneur, and the general profile for overall entrepreneur. Our study also contributes more broadly to sociology and economic theory by shedding light on the conventional definition of economic freedom within market societies and illustrating the ways in which economic freedom is essentially subordinate to the social relations and the institutional enviroment.

Our paper is structured as follows. First, we review the literature on context in entrepreneurship to identify the different definitions and different frameworks of context presented in the extant literatre. Second, we select one of the frameworks of context from the prior literature to hypothesize and test, namely Welter's (2011) framework of the four dimensions of where context for entreprenership. Welter's (2011) framework defines the context for entrepreneurship as the: institutional context, social context, business context, and spatial context. Third, we empirically analyze each of these four dimensions of context through a rich eight-year longitudinal dataset and a fixed effects regression, to understand whether different contexts are more important for certain types of entrepreneurs. Finally, we present the results and conclude with a set of recommendations for further research.

BACKGROUND: DEFINING CONTEXT

One way to define context is through Bourdieu's (1977, 1984, 1986) work in social economics and power relations, and more specifically his concept of fields to define context. Bourdieu's early work initially examined elites' skillfulness at creating and reinforcing strategies to accumulate capital and retain power within their fields. Bourdieu's (1977, 1984, 1986) concept of fields defines context relationally as "bounded social spaces compromising individual agents and the relationships that link them" (Lockett et. al. 2014). Bourdieu (1986) suggests that individuals take strategic actions to accumulate economic and social capital within fields (Pret, Shaw, and Drakopoulou Dodd 2015). The Bourdieuan theorization of fields defines context through relational ontology, taking "the basic units of social analysis to be neither individual entities (agent, actor, person, firm) nor structural wholes (society, order, social structure) but relational processes of interaction between and among identities" (Somers 1998).

Using Bourdieu's definition of context as a framework to examine small business creation relationally allows researchers to advance knowledge in the field of entrepreneurship by resolving differences between "agency and structure, positivism and social constructivism, and qualitative and quantitative approaches" through ontological and methodological pluralism (Özbilgin & Tatli 2005). One sub-branch of entrepreneurship which utilizes a Bourdieusian lens is international entrepreneurship (De Clercq & Voronov 2009; Drori Honig & Wright 2009; Terjesen and Elam 2009; Patel and Conklin 2009). Due to the global nature of the field of international entrepreneurship, it is more apparent for scholars that they are not only authoring themselves and giving a voice to their entrepreneurs' narratives, but are rather speaking for a global community of entrepreneurs

embedded in their contexts with distinct experiences (Welter & Gartner, 2016). This has stimulated the recent calls for contextualized entrepreneurship (Gartner 2004, Steyaert and Hjorth 2003; Steyaert and Katz 2004), to transform what is exclusively foreign and limited to a few, into the generally familiar, and approach universal fact or knowledge that is able to stand alone across different contexts. Figure 4-1 presents a stylized figure of Bourdieu's conceptual framework of context.

International entrepreneurship literature which focuses on emerging economies (Bruton, Ahlstrom, & Obloj, 2008) or ventures that are embedded in the home and host country differently (Terjesen and Elam 2009; Patel and Conklin 2009) offer examples of the application of the Bourdieusian framework. Terjesen and Elam (2009) use Bourdieu's theory of practice framework to examine transnational entrepreneurs' internationalization strategies. Patel and Conklin (2009) on the other hand draw on Bourdieu's theory of practice framework to examine the ways in which transnational entrepreneurs balance their network scope and size across multiple environments to operate most effectively in both environments.

Insert Figure 4-1 about here

Other researchers draw on the Global Entrepreneurship Monitor (GEM) conceptual framework to define context. This framework has been the base of GEM global reports since 1999 when researchers at Babson College (USA) and London Business School (UK) launched the Global Entrepreneurship Monitor (GEM) Consortium annual surveys (Reynolds et. al. 1999, 2005). Over the past twenty years, the GEM conceptual framework has undergone three stages of development to reflect the changes that have taken place in

the GEM project. In the latest and third version (2015-present), GEM's conceptual framework defines the context for entrepreneurship through the "social, cultural, political, and economic" contexts. While GEM does not ground this conceptual framework of the four contexts in theory (Levie & Autio 2007), it conceptualizes what context is through a set of empirical variables in two sub-frameworks: the national framework conditions and the entrepreneurial framework conditions.

The first sub-framework, national framework conditions, consists of 12 pillars that are collected from the World Economic Forum, also known as the 12 pillars of national competitiveness. The pillars include: institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, good market efficiency, labor market efficiency, financial market development, technological readiness, market size, business sophistication, and innovation. This is the first component of the social, cultural, political, and economic context as defined by GEM. The second sub-framework, the entrepreneurial framework conditions, consists of nine pillars that are collected by the GEM National Expert Survey. This includes: entrepreneurial finance, government policy, government entrepreneurship programs, entrepreneurship education, R&D transfer, internal market openness, physical infrastructure for entrepreneurship, commercial/legal infrastructure for entrepreneurship, and cultural/social norms. These two sub-frameworks and their components make up what GEM defines as the social, cultural, political, and economic context for entrepreneurship in their overarching conceptual framework. Although additional theoretical work is required to understand the intellectual foundations behind GEM's conceptual framework, it has already been empirically tested

in the literature (Levie & Autio 2007). Figure 4-2 presents a stylized figure of the GEM conceptual framework.

Insert Figure 4-2 about here

A third way to conceptualize context is through Welters four dimensions. Welter (2011) breaks down context into four dimensions: the spatial context, which refers to the geographical setting such as country, industrial cluster, community, or neighborhood, the institutional context, which refers to the cognitive, cultural, and regulative systems, the business context, which refers to the industry or market, and the social context, which refers to social networks and family unit. For Welter, context is an interwoven and multi-faceted phenomenon which cuts through different levels of analysis. Welter draws on these four dimensions to define context and emphasizes the linkages between business contexts, such as the market, and non-business contexts, such as the family unit. For Welter, contextualizing entrepreneurship is concerned with acknowledging and incorporating the richness and diversity of the different contexts in which the entrepreneur is embedded in at different levels (Welter, 2011).

Welter's framework offers a richer model for the context entrepreneurship. It is embedded in theory and elucidates the variables of interest in the "where" context for entrepreneurship distinctively - namely, the institutional, the social, the business, and the spatial - and their subcomponents, such as social networks and relational ties within families within the social context. It is formed from a number of theories that can be tested independently or simultaneously. The structure and unity amongst the different components of her framework, that can be applied to a wide range of circumstances (e.g. countries and types of entrepreneurs). This presents a unique opportunity, to further

explore and verify the relationship between each of these contexts and entrepreneurship activity. While this framework is well recognized in the field of entrepreneurship, to our best knowledge, there are no studies that have empirically tested these relationships comprehensively. Figure 4-3 presents a stylized figure of Welter's conceptual framework of context.

Insert Figure 4-3 about here

THEORY AND HYPOTHESES

Institutional Context

Over the past several decades, there has been an evolution in the manner entrepreneurial activity is examined and perceived. Scholars began to notice the heterogeneous context in which entrepreneurship occurs (Acs & Szerb 2007; Gartner 2004; Welter, 2011) and the variety in the magnitude and types of entrepreneurship activity across different countries and societies. One explanation for the differences in entrepreneurship activity across economies is the institutional framework that prevails in a certain economy. As opposed to examining the attributes of the individuals, researchers started to pay special attention to the institutional environment in which economic activity is embedded in and the role that institutions play in shaping entrepreneurship. It became more apparent the institutional context has a significant impact on new venture creation.

To examine the Welter's (2011) first dimension, institutional context, and its impact on entrepreneurship activity, we ground our theoretical framework in the pivotal work of North (1991, 1994, 1997, 2005) and Baumol (1990, 1993, 2005) on entrepreneurial activity and the institutions that form the foundations for economic activity. We define institutional

context as the formal regulatory systems, such as laws and regulations (North, 1991; Williamson, 1975; Scott, 1995) and informal regulatory systems, such as cultural norms and values (Scott, 1995; DiMaggio & Powell, 1983; Meyer & Rowan, 1977) that govern human behavior in a particular setting. Institutions can be regulative, normative, or cognitive social (Scott, 2008) structures and determine the empirical existence of an opportunity and the appropriate behavior of engaging with opportunity (Meyer & Rowan, 1991).

Regulative institutions, such as a national government policies and laws, play an important role in shaping a country's entrepreneurial environment (Busenitz et. al. 2000; Whitley, 1999; Johnson, McMillan, & Woodruff, 2002). Laws can support business infrastructure through protecting against corruption, assuring political stability, assisting in providing access to credit, or offering investors protection. Strong institutions decrease uncertainty by creating stable arrangements of interaction to structure economic activity, social order, and political relations (Leftwich, 2006 and 2007). Regulatory institutions can reduce transaction cost, improve the overall performance of an economy by managing individual uncertainty effectively (Williamson, 1975; Coase, 1937), and create a conductive business environment that facilitates startup activity. Thus, we hypothesize:

H1a: An increase in the strength of a conductive business environment will have a positive effect on the rate of total entrepreneurship activity.

H1b: An increase in the political stability will have a positive effect on the rate of total entrepreneurship activity.

H1c: An increase in corruption will have a negative effect on the rate of total entrepreneurship activity.

Social institutions, such as social norms and cultural beliefs (Scott 1995, 2008), guide action through specifying what is desirable, how things should be done, and by setting a standard as to what is expected (March 1981). Hofstede (2001) suggests that culture is a "collective programming of the mind." Similar to regulative institutions, culture and social norms can impose constraints on individual behavior. However, rather than relying on legal sanctions to constrain action, social institutions use morality and obligation to honor or shame appropriate and inappropriate behavior. Some value systems prioritize creativity and innovation more than others as well as have a more positive outlook towards risk and return. We consider the role of entrepreneur status in social norms and culture entrepreneurship and thus hypothesize:

H1d: An increase in entrepreneurship status will have a positive effect on the rate of total entrepreneurship activity.

Cognitive institutions refer to the taken for granted assumptions and shared understandings that construct our social reality (Goffman 1974; Meyer and Rowan 1977; DiMaggio 1997; Berger and Kellner 1981) and personal lens through which we interpret the outside world (Markus and Zajonc 1985; Stenhold et. al. 2013). Individuals and concepts that are deemed legitimate become unquestionable and are more likely to be abided by without conscious thought (Zucker 1988, 1989). Recent research on the human brain and cognitive function emphasizes the interdependence of cognition and emotion (Dolan 2003; LeDoux 1996). Specifically, in the context of entrepreneurship, we consider the cognitive concept of fear of failure, or the emotional reluctance to take action due to negative thoughts of the consequences of an unsuccessful attempt at business

venturing. We hypothesize that high a fear of failure is will lead to lower entrepreneurship activity rates. Drawing on this line of literature, we hypothesize:

H1e: An increase in the fear of failture will have a negative effect on the rate of total entrepreneurship activity.

Social Context

In addition to institutions, another contextual variable that is relevant for entrepreneurship activity is social capital (Aldrich, 1999; Aldrich & Zimmer, 1986; Davidsson & Honig, 2002; Welter, 2011). The role of social capital in new venture creation has been highlighted by the social networks (Aldrich, 1999) and embeddedness (Polanyi, 1957; Granovetter, 1985; Uzzi, 1997; Nohria and Ghoshal, 1997) literature. Embeddedness is defined as the nature, depth, and extent of a social tie into its surrounding context (Polanyi, 1957; Dacin et al., 1999; Uzzi 1997). It has been shown to be a key ingredient in business activity and a main element in the market process. Embeddedness and social networks are important for entrepreneurship because each distinctive patterns of social network linkage can lead to the accessibility of different knowledge, opportunities, and ideas. This allows the entrepreneur to particularly tap on knowledge and opportunities specific to their local context. These exchange relations are a valuable resource because they provide the entrepreneur with not only new knowledge, but also with legitimacy (Aldrich, 1999; Davidsson & Honig, 2002; Granovetter, 1985; Burt, 1992; Zucker, 1989) to overcome the liability of newness.

Some examples of resources which social networks can aid in providing access to are financial capital, trust, brand recognition, production techniques, and distribution channels, amongst a variety of others. Resources which are obtained through exchange

relations can be inimitable and non-substitutable (Gulati, 1999; Gulati et al., 2000), especially if the entrepreneurs social network is strategically constructed. However, being deeply embedded in a particular environment or social network can also be a liability. Entrepreneurs can face constraints, such as limitations in sovereignty from social control or a cognitive block from thinking and acting outside the social norm to innovate. In the same way that embeddedness and strong social ties can be a resource, they can also hold back entrepreneurs, by restraining the process of creative destruction (Schumpeter, 1934; 1942) which gives birth to innovation. Zukin and DiMaggio's (1990) explains this block as the mental processes that constraint economic rational, illustrated in cognitive psychology research or decision theory which result from cognitive embeddedness.

Buyer and seller exchange relations have been central to contractual relations research not only in sociology, but also in economics (Williamson, 1979). Extant economic and sociology literature describe exchange relations as a spectrum, with purely arm's length relationship at one end and a strongly embedded relationship at the other end. In arm's length relationship, transactions between the entrepreneur and others to build the startup are only based on economic manners. In this case, for example, the entrepreneur may be easily inclined to change a supplier if the supplier increases their price. The farther the exchange relations digress from purely arm's length, the higher the extent of embeddedness (Uzzi, 1997). Strongly embedded relations at the other end are based on long lasting mutual commitment and trust. They are typically between actors who have transacted over a long period of time, have adapted their business routines to each other, and are more easily in a position to access each other's capabilities. Changing partners is

less likely due to the investment made in this type of exchange relations (Dyer and Singh, 1998).

A wide range of studies have shown that a firm's performance is dependent on its ability to garner resources from its environment (Lawrence and Lorsch, 1967; Salancik and Pfeffer, 1978), with some more directly attributing these resources from social network relationships (Powell, Koput, and Smith-Doerr, 1996). Strong ties (Manolova, Carter, Manev, and Gyoshev, 2007) and family support (Edelman et. al., 2016) have been identified as a vital element in entrepreneurial startup activity, survival, growth, and success. Trevelen (1987) and Landeros & Monenczka (1989) show that close exchange relations with customers and suppliers create less uncertainty which lead to both a better control and lower cost of inventory. Saxenian (1990) suggests that that a significant amount of the success in Silicon Valley was a result of extensive social networking.

Drawing on this line of literature, our examination of the social context dimension of Welter's framework will investigate the impact of two measures for the social context on the rate of total entrepreneurial activity at the country level, namely social networks and social capital. Social capital is a wider measure that includes the strength of personal relationships such as family, the level of social networking in society in general, and the participation in society and community. On the other hand, social networks is a more specific measure which captures only social networking with entrepreneurs in the past several years. Thus, we hypothesize:

H2a: An increase in social networks will have a positive effect on the rate of total entrepreneurship activity.

H2b: An increase in social capital will have a positive effect on the rate of total entrepreneurship activity.

Insert Figure 4-4 about here

Business Context

In addition to institutional and social context, another context that is important for entrepreneurship activity is the business context (Welter, 2011; Klapper, Lewin, & Delgado, 2009; Minniti, 2003). The business context refers to the nature of the market and industry in which the entrepreneur is operating in. Examples of the business context include barriers to enter the market, price stability, the number of competitors in the industry, or the "stage of life cycle of industries and markets" (Welter, 2011). A number of studies have noted the impact of entrepreneurial decisions on the conditions of the market (Gromb and Scharfstein, 2002; Hamilton, 2000), unemployment (Audretsch et al. 2001; Cowling & Bygrave 2002) and level of development (Wennekers et al. 2005). In this study of the business context, we focus primarily on unemployment (Audretsch et al. 2001; Cowling & Bygrave 2002), volatility of prices in the market (Aizenman and Pinto 2005; Ramey and Ramey 1995; Acemoglu et al. 2003; Loayza, Ranciere, Servén & Ventura 2007; Galí, 2015) sound currency (Mises 1912, 1998; Fisher 1929 Salerno, 1998) and level of development (Wennekers et al. 2005) to examine the business context.

Prior studies show that unemployment is an important determinant of entrepreneurship activity, however, whether unemployment impacts entrepreneurship positively or negatively is still contestable. Some studied claim that individuals are pushed into business startup due to a shortage of opportunities, finding a positive relationship

between unemployment and entrepreneurship activity (Staber and Bögenhold 1993). Other studies find a negative relationship between unemployment and entrepreneurship, claiming that high unemployment is leads to a prosperity pull, or lower levels of demand for the output (Blanchflower 2000). We hypothesize:

H3a: An increase unemployement will have a positive effect on the rate of total entrepreneurship activity.

H3b: An increase the level of economic development will have a positive effect on the rate of total entrepreneurship activity.

Prior studies also show that sound currency and price stability are especially important for investment because they provide a stable value and reliable means for trade that ensures reaping the fruits of investors' capital (Mises 1912, 1998; Fisher 1929 Salerno, 1998; Aizenman and Pinto 2005; Ramey and Ramey 1995; Acemoglu et al. 2003; Loayza, Ranciere, Servén & Ventura 2007; Galí, 2015). Limiting money supply at the central bank, to a create a boundary on the expansion of money is one example of how entrepreneurship can be promoted through sound currency. "The centrality of monetary calculation to Mises and Hayek is the unique contribution of the Austrian school of economics…monetary calculation emerges as not just an aspect of the market process, but the crucial element which allows for the social cooperation under the division of labor" (Boettke, 2001). According to Mises (1912) "the sound-money principle has two aspects. It is affirmative in approving the market's choice of a commonly used medium of exchange. It is negative in obstructing the government's propensity to meddle with the currency system."

Fisher (1929) similarly recognizes the significance of sound currency, stating "irredeemable paper money has almost invariably proved a curse to the country employing

it." This is especially crucial to entrepreneurial planning, because monetary calculations are the "guiding star of action under the social system of division of labor" that are required for an entrepreneur "to distinguish remunerative lines of production from the unprofitable" (Mises, 1998). Entrepreneurs are required to set prices and make judgments about costs and revenues early in the planning phase, in order to conclude whether their arbitrage is an opportunity worth pursuing. "In the absence of money, there are no economic quantities and no economic calculation" (Salerno, 1998). Drawing on this line of literature, one part of our examination of the business context dimension of Welter's framework will investigate the impact of sound currency, on the rate of total entrepreneurial activity at the country level. Thus, we hypothesize:

H3c: An increase in sound currency will have a positive effect on the rate of total entrepreneurship activity.

Another factor that is important for entrepreneurship in the business context is price stability. Having price stability and minimizing inflation is a primary objective of all markets (Aizenman and Pinto 2005; Ramey and Ramey 1995; Acemoglu et al. 2003; Loayza, Ranciere, Servén & Ventura 2007; Galí, 2015) and has been shown to significantly reduces nascent entrepreneurship (Ovaska and Sobel 2005). Price stability indicates that the average prices for goods and services either remains the same or does not fluctuate significantly. One of the most common measures of price stability and inflation is the consumer price index, also known as CPI (Boskin et al. 1998; Bryan & Cecchetti, 1993). This index assesses stability of prices in the market and inflation by measuring price changes in a hypothetical basket of goods. A hypothetical basket of goods includes food, medical care, and housing, amongst other items which are commonly purchased by a

household. One reason price stability in the market is critical to entrepreneurship is because an increase in prices in the short run can lead to higher costs for business that they are not able to pass on to consumers. This is especially critical for small businesses because they do not have the same bargaining power to obtain better prices from vendors, or the deep pockets that can help them absorb a perhaps temporary rise in costs (Everett & Watson 1998; Ovaska and Sobel 2005). Furthermore, new ventures are less likely to have a strong established brand that allows them to be able to raise prices and still guarantee a continued consumer base because they are still trying to overcome liability of newness and obtain legitimacy in the market (Stinchcombe, 1968; Singh, Tucker, & House 1986). The second part of our examination of the business context dimension of Welter's framework will investigate the impact of price stability, on the rate of total entrepreneurial activity at the country level. Thus, we hypothesize:

H3d: An increase in price stability, as measured by CPI, will have a positive causal effect on the rate of total entrepreneurship activity.

Spatial Context

In addition to the institutional, social, and business context, another context that is important for entrepreneurship activity is the spatial context. The spatial context refers to the geographic distribution of populations across space. Welter (2011) defines the spatial context as "geographical environments, such as countries, communities and neighborhoods and industrial clusters." Analyzing spatial context allows us to understand how entrepreneurs relate to their environment, or more precisely, the relationship between the entrepreneur and being a part of a particular space and its elements. Entrepreneur can

operate in urban or rural areas, and locate near a coast, a mountain, a road, or a railway. Whichever the entrepreneurs selected location may be, they will obtain different benefits or restrictions from their relationships with the elements in their space.

Johannisson (1983) interprets spatial context through a Törnqvistian (1981) lens as a "spatially restricting material structure" that defines the action field for the individual. Entrepreneurs in a particular space have the same starting point for "situation" or what is possible and what is beyond control (Johannisson, 1983). Hägerstrand defines spatial context more narrowly and precisely through cartographic coordinate systems as points on a map. Hägerstrand's seminal work in the dispersion of innovation across space and time paved the way for the emergence of the field of economic geography (Hägerstrand, 1962, 1967, 1970, 1976, 1983, 1985). Over the past several decades, there has been a resurgence in new economic geography with its emphasis on agglomeration and the economics of firm clustering (Porter, 1990; Audretsch and Feldman, 1996; Glaeser et al. 1992; Saxenian, 1994).

There are two types of economies of scale that firms can benefit from through agglomerating in a particular area: localization (Marshall, 1890, 1920) and urbanization (Jacobs, 1969, 1984). Firms benefit from localization economies through labor sharing, input pooling, and knowledge spillovers (Marshall, 1890, 1920). Localization economies refers to cost savings resulting from the clustering of firms in the same industry. This includes cost savings from input sharing, labor pooling, and knowledge spillover (Marshall 1890; Arrow 1962; Romer 1986). Urbanization economies refers to cost savings resting from the clustering in the same an urban area across industries. This includes cost savings

from sharing infrastructure, population clusters, diversity of labor pooling, and similarly knowledge spillover (Jacobs, 1969, 1984).

Both localization and urbanization economies are linked to an increase in productivity, although a common problem of reverse causality between agglomeration and productivity makes the estimation a difficult task. The agglomeration of tech industry in Silicon Valley exemplifies localization economies (Saxenian, 1994). An example of urbanization is the emergence of the auto industry in Detroit 50 years after the initial establishment of Detroit's shipbuilding industry (Jacobs, 1969, 1984). Detroit's shipbuilding industry was a critical antecedent to the automobile industry established later because the gasoline engines built initially for ships easily transitioned into automobile gasoline engines. Other examples of urbanization include the emergence of large cities such as London or New York, characterized by an urban diversity rather one single dominant industry (Jacobs, 1969, 1984). While both types of the economies of scale, localization and urbanization, note knowledge spillover as a cost savings of agglomeration, their theory behind how knowledge transfers and by which means spillovers take place varies.

Marshall (1890), Arrow (1962), and Romer (1986) claim that agglomeration facilitates knowledge spillover within the same or similar industries. Jacob's (1969, 1984), on the other hand, suggest that knowledge spillovers can occur across industries. She suggests that the diversity of knowledge sources in cities are the greatest sources of innovations. Jacob's (1969, 1984) theory sheds light on the industrial fabric within a geographic region. She suggests that the variety of industries is linked to the knowledge externalities and innovation of a region. Examples include science research institutions or

foreign direct investment, which give birth to new knowledge as well as promote the exchange of existing knowledge across distinct industries.

Previous research shows that knowledge spillover from foreign direct investment and scientific research institutions or universities play a significant role in the agglomeration of firms (Feldman 1999). Cross-fertilization among technologies and industries, a key element in innovation and productivity, is most likely to be present in urban areas (Henderson 1999). Knowledge can spill over either from a firm's research and development or a university research institutions (Baptista, 1997). "Spillover of knowledge from the firm or university creating that knowledge to a third-party firm is essential to innovative activity" (Audretsch 1998). Existing firms have significant productivity increases from foreign direct investment locating nearby (Chung 2001). The distribution of university research institutions and foreign direct investment can act as a major competitive advantage for firms that have the capability to absorb these technologies and benefit from this externality.

It is important to note that agglomeration does not always lead to cost saving benefits for firms. There are disadvantages of agglomeration, and in some cases, the negative externalities of spatial clustering will outweigh the positive externalities. This applies to both types of agglomeration, localization and urbanization economies. The diseconomies of agglomeration includes higher costs for land, property, and labor, pollution, congestion, overcrowding, a decrease in public service quality, an increase public service cost, and crime. In this case, agglomeration leads to an inefficiency and additional costs for firms. To empirically examine the Welter's (2011) fourth dimension, the spatial context, and its impact on entrepreneurship activity, we hypothesize:

H4a: An increase in state of geographic clustering will have a positive effect on the rate of total entrepreneurship activity.

H4b: An increase in the extent that FDI brings new technology in a country will have a positive effect on the rate of total entrepreneurship activity.

H4c: An increase in the extent of local firms' ability to absorb technology will have a positive effect on the rate of total entrepreneurship activity.

H4d: An increase in the quality of scientific research institutions will have a positive effect on the rate of total entrepreneurship activity.

DATA & METHODOLOGY

Data collection

The data for our study was collected from several sources. Our main dependent variable was collected from the Global Entrepreneurship Monitor (GEM). GEM Consortium annual surveys was launched in 1999 by researchers at Babson College (USA) and London Business School (UK) to examine the multi-varied dimensions of national entrepreneurial activity and provide researchers with internationally comparable empirical data (Reynolds *et. al.* 2005; Minniti, Bygrave, & Autio, 2006). GEM has been credited with developing the fledgling subfield of cross-national research on entrepreneurial activity. The GEM Adult Population Survey is conducted in each country based on a sample of at least 2,000 adults (18-64) through a standardized questionnaire to assess business startup activities worldwide. Our eleven independent variables were collected from The International Monetary Fund (IMF), The Fraser Institute, and The Heritage Foundation, The Legatum Index and GEM. Our three control variables were collected

from The World Bank (WB). The data were collected from 2008 to 2015 for 78 countries. It is an unbalanced panel, with some countries including more years of data than others.

Dependent Variables

The first dependent variable used in this study, *Total Entrepreneurial Activity (TEA)* is a well-established measure of county level entrepreneurial activity (Reynolds et. al., 1999, 2005). Total Entrepreneurship Activity (TEA) was collected from The GEM Adult Population Survey. GEM provides harmonized data on entrepreneurship activity in over than 75 economies around the world. While GEM surveys provide a wide array of measures, the most common single index which reports have largely relied on is TEA. TEA measures the "proportion of a country's population who are between 18-64 that are either nascent entrepreneurs or new business owner-manager of a firm less than 42 months old" (Reynolds et. al. 2005). This index defines entrepreneurship as a process, combining individuals from different stages of entrepreneurship: those who are in the in the process of setting up a new firm, *nascent entrepreneurs*, and those who are running a new startup, *new business owning-manager* of a new firm. Entrepreneurs who are engaged in both activities are only counted once. Thus, the Total Entrepreneurial Activity index is more of a measure of firm transition rather than strictly a measure of firm birth event. Moreover, the Total Entrepreneurial Activity index does not include firms that have paid salaries and wages for more than 3.5 years, because it considers these businesses to be *established firms* which have overcome the liability of newness.

The second and third dependent variable, Opportunity Total Entrepreneurial Activity and Necessity Total Entrepreneurial Activity, are two subsets of our first dependent variable TEA. Opportunity TEA is the subset of "a country's population who

are between 18-64 that are either nascent entrepreneurs or new business owner-manager of a firm less than 42 months old," which chose to engage in entrepreneurship based on recognizing an opportunity in the market that they were interested in pursuing. Necessity TEA, on the other hand, is the subset of "a country's population who are between 18-64 that are either nascent entrepreneurs or new business owner-manager of a firm less than 42 months old," which chose to engage in entrepreneurship because they are pushed by unemployment or lack other means of generating income. Opportunity entrepreneurs can vary across a number of dimensions, such as growth aspirations (Wennekers et al., 2005), from entrepreneurs who chose to startup a new venture because of a lack of better options for work. The fourth dependent variable, *New Business Entry Density* (NBED), is another main indicator measure of county level entrepreneurial activity. In 2006, seven years after the inception of GEM, The World Bank launched the entrepreneurship survey database. Similar to GEM, The World Bank Group Entrepreneurship Survey (WBGES) offers cross country data on new business startups across the world in 143 countries. The variable NBED, defined as the number of newly registered firms with limited liability per 1,000 working-age people (ages 15-64) per calendar year, is the main indicator of business startups in the World Bank Group Entrepreneurship Survey (WBGES). However, while TEA from GEM includes both nascent entrepreneurs (those who have taken steps to start a new business but have not yet paid salaries or wages for more than three months) and new business owners (those who have paid salaries and wages for more than 3 months and less than 3.5 years) in their measure (Reynolds et. al., 2005), NBED only includes startups strictly according to firm registration with the national business registries.

This means that nascent entrepreneurs who intend to startup but have not officially begun operations, or informal entrepreneurs who are operating but not registered officially, are not included in this measure of country level entrepreneurship. Thus, NBED tends to report higher rates of entrepreneurship in developed economies than TEA, and lower rates of entrepreneurship in emerging economies than its counterpart TEA (Acs, Desai, & Klapper 2008). NBED is rooted in each countries' legal system which requires that "any business with a legal entity or corporate personhood separate from its owners must be duly registered" (Klapper, Amit & Guillén 2010), while TEA is rooted in the market system. NBED includes all private, formal sector firms with limited liability, regardless of size. Table 4-1 presents a description of the variables and their sources.

Insert Table 4-1 about here

Independent Variables

Institutional Context

Business environment index is the first independent variable that is used to represent the institutional context. It is obtained from the Legatum Prosperity Index. This index is used to measure the degree to which a country's regulations support "a country's entrepreneurial environment, its business infrastructure, access to credit, investor protections and labor market flexibility." According to Legatum Prosperity Index Methodology Report (2018), the business environment index is generated "based on research into how entrepreneurship drives innovation and generates economic growth" and is a combinative measures of "access (to infrastructure such as the Internet and transport, and to credit), business flexibility (the costs of starting a business and of hiring and ring),

clear and fair regulation (e.g., intellectual property rights), and perceptions of meritocracy and opportunity." It is composed of a total of 12 indicators. It is ranges from zero to one hundred, with higher scores indicating stronger and healthier business environments. A stronger business environment provides an entrepreneurial climate that facilitates opportunities and innovation, generating more wealth and improving overall welfare of society.

Corruption is our second independent variable that is used to represent the institutional context. It is obtained from the World Bank. Corruption is a measure of the "perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests" (Kaufmann et. al., 2009). It is an index which ranges between -2.5 (weak) to 2.5 (strong). Corruption can have a negative impact on entrepreneurship activity by increasing transaction costs for entrepreneurs (Coase 1960) and creating an additional layer of burden which benefits only elites (Tonoyan et. al. 2010). On the other hand, corruption may increase the rate of entrepreneurship by "greasing the wheels" of inefficient regulatory systems through bribery.

Political Stability is our third independent variable that is used to represent the institutional context. It is obtained from the World Bank. Political stability is a measures four elements within a country: internal conflict, which assesses political violence that threatens government or business, external conflict which assesses geopolitical disputes and trade restrictions, ethnic tensions, which assesses race, nationality, and language divisions, and government stability which assesses government policy approval and ability to carry out its declared programs (Kaufmann et. al., 2009). Similar to corruption, it is an

index which ranges between -2.5 (weak) to 2.5 (strong). The relationship between political instability and small business is not well developed relative to other macroeconomic variables (Brück et al. 2011), partially because underlying the majority of entrepreneurship research is the implicit assumption of peace. Brück, Naudé, & Verwimp (2013) suggest that persistent conflict has an adverse effect on a country's long-run economic environment. We predict a negative impact of political instability on entrepreneurship rates.

Entrepreneurship status is the fourth independent variable that is used to represent the institutional context. It is obtained from The GEM Adult Population Survey. This variable measures "the percent of the adult population between 18-64 who believe that high status is afforded to successful entrepreneurs." This variable used to capture societal values and norms towards entrepreneurship, such as the entrepreneurs' emergence as a "new cultural hero of the Western world" (Carr and Beaver, 2002; Ogbor, 2000). The ways in which the entrepreneur is viewed in the public, represented in the media, and valued in societal norms can impact the regard that individuals place for this capability and their actions towards creating new businesses.

Fear of failure is the fifth independent variable that is used to represent the institutional context. It is obtained from The GEM Adult Population Survey. This variable measures "the percent of the adult population between 18-64 who perceive good opportunities but indicate that fear of failure would prevent them from starting up a business." Fear of failure is used to capture one aspect of the cognitive processes towards entrepreneurship, that is the emotional reluctance to take action due to intense worry or negative thought of the consequences of an unsuccessful attempt at business venturing.

Fear of failure can impact potential entrepreneurs by preventing them from putting their ideas and into action, or taking steps forward to operationalize their creative innovations.

Social Context

Social Networks is the first independent variable that is used to represent the social context in this study. It is obtained from The GEM Adult Population Survey. This variable measures the percent of entrepreneurs who "personally know someone who started a business in the past two years." Personally, knowing other entrepreneurs not only stimulates interest and provide moral support, but can also advance entrepreneurs startup activity by providing resources, knowledge about business operations, and recognizing the existence of an opportunity. Strong ties (Manolova, Carter, Manev, and Gyoshev, 2007) and family support (Edelman et. al., 2016) are a vital element in entrepreneurial startup activity, growth and success.

Social capital is the second independent variable that is used to represent the social context in this study. It is obtained from the Legatum Prosperity Index. This variable measures "the strength of social relationships, social network support, social norms, and civic participation in a country." Exchange relations are can be a major asset. They not only provide the entrepreneur with new knowledge and resources, but also with legitimacy (Aldrich, 1999; Davidsson & Honig, 2002; Granovetter, 1985; Burt, 1992; Zucker, 1989). Some examples of resources which social networks can aid in providing access to are financial capital, trust, brand recognition, production techniques, and distribution channels, amongst a variety of others.

Business Context

Gross domestic product valued at purchasing power parity (GDP(PPP)) is the second independent variable in the business context. It is obtained from the World Bank. This variable represents the number of countries where "an international dollar has the same purchasing power over GDP(PPP) as a U.S. dollar has in the United States." Country comparisons using purchasing power parity are sometimes regarded to be more useful than nominal GDP because it takes into account the differences in prices of goods and services and countries inflation rates, and thus the ultimate differences in per capita income to assess individual welfare. GDP(PPP) is defined as "the rate at which the currency of one country would have to be converted into that of another country to buy the same amount of goods and services in each country." In line with previous research, we expect the relationship between entrepreneurship activity and GDP to be curvilinear (Wennekers, Van Stel, Thurik, & Reynolds 2005; Acs et. al., 1994; Carree et al., 2002).

Unemployment is the second independent variable in the business context. It is obtained from the World Bank. Unemployment is a measure of total labor force unemployed. It is a percentage that ranges between one to one hundred. Studies examining the link between unemployment and entrepreneurship activity have been inconclusive, with some claiming that individuals are pushed into business startup due to a shortage of opportunities, finding a positive relationship between unemployment and entrepreneurship activity (Staber and Bögenhold 1993), and others finding a negative relationship between unemployment and entrepreneurship, and claiming that high unemployment is leads to a prosperity pull (Blanchflower 2000).

Price stability, as measures by consumer price index is the third independent variable that is used to represent the business context. It is obtained from The International Monetary Fund. This variable assesses the fluctuation in the prices for goods and services. It measures price changes in a hypothetical basket of goods, which includes food, medical care, and housing, amongst other items which are commonly purchased by a household. Price stability is a common goal in all markets. It is especially important for entrepreneurship because an increase in price in the short run leads to higher costs for business that they are not able to pass on to consumers.

Sound money is the fourth independent variable that is used to represent the business context. It is obtained from The Fraser Institute measures of economic freedom. The sound money index measures the degree of abrupt and volatile appreciation and depreciation of currency. This index ranges from zero to ten. Obtaining a high score on this index means having a reliable currency the country level or at least access to other reliable currencies through bank accounts. Austrian theorists Mises (1912) and Hayek (1925) were some of the first scholars to shed light on the importance of sound money. The absence of sound money threatens earned profits from trade. "The centrality of monetary calculation to Mises and Hayek is the unique contribution of the Austrian school of economics. Combined with the additional Austrian assumptions and theoretical propositions—irreversibility of time, uncertainty, time structure of production, heterogeneity and multiple specificity of capital goods, non-neutrality of money, and so on— monetary calculation emerges as not just an aspect of the market process, but the crucial element which allows for the social cooperation under the division of labor" (Boettke 2001).

In countries where money supply is increased by printing money rather than by adopting an "easy money policy" to expand the money supply, a business's ability to reap the benefits of trade is threatened. Allowing banks to offer savings and checking accounts in other currencies, or allowing citizens to open foreign bank accounts, is one way to provide more accessibility to sound money, especially in areas where sound money is not locally accessible. In addition to a maintaining a credible currency and allowing banks to offer these services, low and stable inflation rates are crucial for maintaining steady prices and terms of long term contracts. This index measures the all of these aspects combined to assess the degree of reliability for different currencies across countries.

Spatial Context

State of geographic cluster development is the first independent variable that is used to represent the spatial context. It is obtained from through the World Economic Forum from the Global Competitiveness Index. This variable is used to assess the extent to which well developed and deep clusters are spread across countries. More specifically, this variable measures the "geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions." It ranges from one to seven, with one indicating nonexistent concentrations and seven indicating widespread concentrations in many fields. State of geographic clustering is used to capture agglomeration. Agglomeration is important for entrepreneurs operating in a particular geographic area because it can have positive externalities that lead to cost savings or negative externalities that lead to inefficiencies and additional costs. Previous research suggests that entrepreneurs start their ventures in the same markets where established businesses start new businesses (Reynolds and White, 1997)

Foreign direct investment and technology transfer is the second independent variable that is used to represent the spatial context. It is obtained through the World Economic Forum from the Global Competitiveness Index. This variable is used to measure the extent that a country's foreign direct investment brings in new technology. It ranges from one to seven, with seven indicating that foreign direct investment brings in new technology to the greatest extent. The diffusion of knowledge spillovers from foreign direct investment are important for entrepreneurs because they can increase the technological level in a region and the level of competitiveness (Shaver & Flyer 2000). This can be positive and negative for nascent entrepreneurs operating in that region depending on their business type and intentions (Shaver & Flyer 2000; Thompson 2002).

Firm-level Technology absorption, which measures the local firms' ability to absorb technology is the third independent variable that is used to capture the spatial context. It is obtained through the World Economic Forum from the Global Competitiveness Index. This variable is used to measure the extent that local firms adopt technology. It ranges from one to seven, with seven indicating that firms adopt technology extensively. The spread of technology allows firms to move up and down the value chain cutting out suppliers and producers (Pananond 2013). It can also alter the composition of an existing industry or lead to the birth of a new markets and innovation within an industry (Utterback 1974). Similar to foreign direct investment, this increases the development and competitive level of the region. Whether that means positive or negative gains for the individual entrepreneur will depend on their type of business and intentions (Shaver & Flyer 2000; Thompson 2002).

Quality of scientific research institutions is the fourth independent variable that is used to capture the spatial context. It is obtained through the World Economic Forum from the Global Competitiveness Index. This variable is used to measure the extent of quality scientific research institutions spread across the world. It ranges from one to seven, with seven indicating the highest quality. Geographic proximity has been shown to be a significant component in the diffusion of knowledge (Gallaud & Torre 2005). Localized knowledge spillovers from scientific institutions and universities are diffused through labor mobility and interactions (Singh 2005). This can help firms to overcome barriers to innovation (Fukugawa 2006) and improve the overall quality and competitiveness of an industry (Laursen Reichstein & Salter 2011).

Estimation Technique

To empirically test the link between the four dimensions of context specified by Welter (2011) and entrepreneurial activity, we use a fixed effects regression. Fixed effects models are used for causal inferences with longitudinal data to control for omitted (unobserved or mis-measured) variables (Angrist and Pischke, 2009). The advantage of this model is that it allows us to get closer to the virtues of a randomized experiment with nonexperimental data in the fields of business and social science. More specifically, this model allows us to control for all characteristics of countries that do not change over time without specifically including each in the data, thereby eliminating significant sources of bias. We then run a full set of robustness checks to test for strict exogeneity. These tests are used to illustrates the level of endogeneity that our fixed effects has eliminated and informs us on the level of confidence in our causal inferences.

By including time specific fixed effects through using year dummies, we are controlling for unobserved heterogeneity across time. Year fixed effects captures endogeneity related to an omitted variable bias from unobserved time characteristics. It allows us to absorb the influence of aggregate time series trends, such as year by year shocks, that are not related to the causal relationship between context and entrepreneurship. We cluster our standard errors by country in order to correct for autocorrelation or heteroskedasticity within errors. We use two measures of robustness. First, we estimate the first difference of each model and we compare our model with the estimates from the first difference model. Second, we estimate the lagged y of each model to check whether our dependent variable is large and significant. This validates the strict exogeniety assumption of our model. Our analysis examines the impact of each context across 78 countries for the time period 2007-2014. Table 2-4 presents the correlation matrix.

Insert Table 4-2 about here

We estimate our model with the following equations:

$$Y_{it} = \beta_0 + \beta_1 Businessenviroments_{it} + \beta_2 Entrepreneurshipstatus_{it} + \beta_3 Fearfailure_{it} + \beta_4 SocialNetwork_{it} + \beta_5 Socialcapital_{it} + \beta_6 SoundMoneyit + \beta_7 Pricestability_{it} + \beta_8 Geographicluster_{it} + \beta_9 FDITechit + \beta_{10} Firmtechabsorb_{it} + \beta_{11} Scientresearchinstitutions_{it} + \beta_{12} GDPPPPPln_{it} + \beta_{13} Unemployment_{it} + \beta_{14} Corruption_{it} + \beta_{15} PoliticalStablity_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

RESULTS

The results of our panel regression models are presented in Table 4-3. Each specification tests the impact of the four dimensions of context on a certain type of country level entrepreneurship activity, with the exception of specification (1), which only introduces the control variables and year dummies. Specification (2) tests the impact of context on the dependent variable total entrepreneurship activity (TEA), which includes both formal and informal entrepreneurship activity. Specification (3) tests the impact of context on a subset of TEA, opportunity TEA. Specification (4) tests the impact of context on another subset of TEA, necessity TEA. Finally, specification (5) tests the impact of context on the dependent variable new business entry density, which includes only formal entrepreneurship activity.

For our first dependent variable, total entrepreneurship activity, results from specification (2) show that business environment and fear of failure are significant at the $p<0.05$ level and $p<0.01$ level respectively. More specifically, we find that a one unit increase in business environment regulations leads to a 0.361 decrease in total entrepreneurship activity ($\beta=-0.361$; $p<0.05$). A one unit increase in fear of failure leads to a 0.0886 decrease in total entrepreneurship activity ($\beta=-0.0886$; $p<0.01$). Thus, we find evidence in support of the impact of the intuitional context, more specifically regulatory and cognitive institutions, on total entrepreneurship activity. We find no evidence in support of social institutions.

Within the social context, we find evidence in support of the impact of the social networks on total entrepreneurship activity. A one unit increase in social networks leads to a 0.0847 increase in total entrepreneurship activity ($\beta= 0.0847$; $p<0.05$). Within the

business context, we find evidence in support of sound money on total entrepreneurship activity at the $p<0.05$ level. A one unit increase in sound money leads to a 0.802 increase in total entrepreneurship activity ($\beta= 0.802$; $p<0.05$). Finally, within the spatial context we find evidence for the impact of geographic clustering and firm technology absorption at the $p<0.05$ level. A one unit increase in state of cluster leads to a 1.551 decrease in total entrepreneurship activity ($\beta= -1.551$; $p<0.05$). A one unit increase in firm absorption technology leads to a 4.431 increase in total entrepreneurship activity ($\beta= 4.431$; $p<0.05$).

For our second dependent variable, opportunity TEA, results from specification (3) show that with the exception of business environment, the exact same variables that were significant for overall total entrepreneurship activity are significant for its subset opportunity TEA. In addition, their magnitudes only slightly vary. A one unit increase in fear of failure leads to a 0.0886 decrease in opportunity TEA ($\beta= -0.0886$; $p<0.01$). A one unit increase in social networks leads to a 0.0720 increase in opportunity TEA ($\beta= 0.0720$; $p<0.01$). A one unit increase in state of cluster leads to a 1.324 decrease in opportunity TEA ($\beta= -1.324$; $p<0.05$). A one unit increase in firm absorption technology leads to a 3.085 increase in opportunity TEA ($\beta= 3.085$; $p<0.05$). This confirms that all contexts are important for opportunity TEA, with the exception of regulatory institutions within the institutional context.

For our third dependent variable, necessity TEA, results from specification (4) show a somewhat different pattern. Price stability from the business context, that was not significant for total entrepreneurship activity or opportunity TEA, becomes significant at the $p<0.01$ level in this model. A one unit increase in price stability leads to a 0.00984 increase in necessity TEA ($\beta= 0.00984$; $p<0.05$). However, in contrast to the previous two

specifications (2) and (3), neither sound money from the business context, nor social networks from the social context, nor firm technology absorption from the spatial context are significant in this model. Similar to specification (2) which uses total entrepreneurship activity, both business environment and fear of failure are significant from the institutional context. However, they are both smaller in magnitude. A one unit increase in business environment regulations leads to a 0.168 decrease in necessity TEA (β= -0.168; p<0.0a). A one unit increase in fear of failure leads to a 0.0379 decrease in necessity TEA (β= -0.0379; p<0.01). Similar to the previous two specifications, geographic clustering is significant within the spatial context. A one unit increase in state of cluster leads to a 0.582 decrease in opportunity TEA (β= -0.582; p<0.05). Only three of the four dimensions of context are important for necessity entrepreneurship.

For our fourth dependent variable, new business entry density rate, results from specification (5) show that only the business environment is important from the institutional context. A one unit increase in business environment regulations leads to a 0.0207 decrease in new business entry density rate (β= -0.0207; p<0.1). Similar to both total entrepreneurship activity from specification (2) and opportunity TEA from specification (3), social networks is significant within the social context. A one unit increase in social networks leads to a 0.00544 increase in new business entry density rate (β= 0.00544; p<0.01). Similar to necessity TEA from specification (4), price stability from the business context emerges as significant in this model as well. However, the sign in this model is different. A one unit increase in price stability leads to a 0.00779 decrease in new business entry density rate (β= 0.00779; p<0.05). From the spatial context, similar to both total entrepreneurship activity from specification (2) and opportunity TEA from

specification (3), firm technology absorption is significant. A one unit increase in firm absorption technology leads to a 0.226 increase in opportunity TEA (β= 0.226; $p<0.05$).

Insert Table 4-3 about here

DISCUSSION

The objective of this paper was to empirically test Welters (2011) four dimensions of "where" framework. We drew on literature from international business, sociology, political governance and economics to test the impact of the multiplicity of contexts, namely the institutional, social, business, and spatial context, on four different types of entrepreneurship activity: total entrepreneurship activity, opportunity TEA, necessity TEA, and new business entry density. Using a rich eight-year longitudinal dataset, we developed a number of insights on the impact of context on the different types of entrepreneurship. We provide an empirical verification as well as an extension to Welter's (2011) original framework. Our findings suggest a number of contributions: first in validating the original framework, and second in extending the original framework to understand how different the combinative impact of the multiplicity of contexts effects the different types of entrepreneurship similarly or differently. These are discussed below.

Some expected and some interesting findings that emerge from our results follow. Starting with our first dependent variable, total entrepreneurship activity, which measures both formal and informal entrepreneurship activity, we find that all four contexts matter. These results are in line with the previous literature that test these contexts separately (Rocha & Sternberg 2005; Valdez & Richardson, 2013; Pinillos & Reyes, 2011;

González-Pernía et. al., 2012; Bowen & De Clercq 2008; De Clercq, Hessels, & Van Stel, 2008; Danis, De Clercq, & Petricevic, 2011; Aragon-Mendoza, Raposo, & Roig-Dobón, 2016; Baughn, Chua, & Neupert, 2006; Urbano & Alvarez 2014; Estrie & Mickiewicz 2011; De Clercq, Danis, & Dakhli 2010; Dheer 2017). Both regulatory and cognitive intuitions matter from the institutional context. Social network emerges as an important variable from the social context. Sound currency is shown to be important from the business context, and geographic clustering and firm absorption technology both emerge as important variables in explaining the variation in total entrepreneurship activity from the spatial context. Our results provide an empirical validation for the combinative impact of Welter's (2011) four dimensions of context for entrepreneurship.

For our second dependent variable, opportunity TEA, results follow the same pattern, with the exception of one variable: the business environment. Thus, we conclude that the same contexts and variables within that were important for overall total entrepreneurship activity are important for opportunity TEA, with the exception of regulatory institutions. This is an interesting finding. For those entrepreneurs that operate based on recognizing an interesting opportunity in the market, regulatory institutions are not significant in explaining their variation in startup activity. It would be interesting for future studies to extend this finding qualitatively to investigate why.

Findings from our third dependent variable, necessity TEA, are also interesting. Sound money, which was shown to be significant and thus important in the business context to explain total entrepreneurship activity and opportunity TEA, is no longer significant for necessity TEA. A new variable, price stability, emerges as significant in the business context. This suggests that necessity entrepreneurs are more sensitive to

inflation and price volatility. Neither social networks nor social capital is significant in explaining the variation in necessity TEA, deeming the social context as a whole insignificant. Again, there is an opportunity for future studies to extend this finding qualitatively to investigate why social networks are significant in explaining the variation of startups for all other types entrepreneurs, except those entrepreneurs that are operating due to a lack of other means of generating income or unemployment. The remaining results are relatively similar to previous types of entrepreneurship. Results for the institutional context are the same the results from our first dependent variable, total entrepreneurship activity. The business environment, representing regulative institutions, and fear of failure, representing cognitive institutions, are both shown to be important for necessity TEA. Only geographic clustering is important in explaining necessity TEA in the spatial context.

For our final dependent variable, new business entry density, which represents only formally registered startups, both sound money and price stability from the business context are significant. This suggests that for formal entrepreneurship, there is a strong emphasis for the importance of the business context in explaining new business entry. We also find that this is the only type of entrepreneurship amongst the four investigated where only regulatory institutions are important from the institutional context and only firm technology absorption is important from the spatial context. An opportunity to extend this finding further would be to investigate why for formally registered entrepreneurs, only these variables matter within their respective contexts. Our last findings for new business entry density resembles both total entrepreneurship activity and opportunity

entrepreneurship. Social network from the social context emerges as an important variable in explaining the variation in new business entry density.

In addition to our findings about each different type of entrepreneurship, two unexpected findings emerge across all models. First, geographic clustering within the spatial context is negative across all models in which it is significant. While agglomeration can lead to cost savings from input sharing, labor pooling, and knowledge spillover (Marshall 1890; Arrow 1962; Romer 1986), it is not always that case that it will result in an overall benefit for firms. There are disadvantages of agglomeration, and in some cases, the negative externalities of spatial clustering will outweigh the positive externalities. The diseconomies of agglomeration include higher costs for land, property, and labor, pollution, congestion, overcrowding, crime, and a decrease in public service quality. We find that across all types of entrepreneurship, agglomeration decreases entrepreneurship activity. There is an opportunity for future research to investigate whether why this occurs.

Our second unexpected finding is concerned with the intuitional context. We find that the business environment is negative across all models in which it is significant. Business environment, used to capture regulatory institutions, is measure of the entrepreneurial climate, business infrastructure, access to credit, and investor protection. While it could be the case that stronger regulatory institutions or business environments reduce both informal and necessity entrepreneurship because they offer better opportunities, this requires further investigation. Our third unexpected finding emerges from the control variables. We find that political stability leads to an increases opportunity TEA, but a decrease in necessity TEA. We find that GDP leads to an increase in formal entrepreneurship (new business entry density), but a decrease in necessity

TEA. There is an opportunity for future research to qualitatively investigate why this is the case.

Theory

We extend Welter's (2011) theoretical framework and contribute to theory in the following ways. First, we find that overall — contexts do matter, but different contexts matter for different types of entrepreneurs. Second, we delve deeper specifically by providing a profile of the typical prototype as follows.

Necessity entrepreneurs are most impacted (in terms of magnitude) by a country's level of development (GDP) and political stability. With regards to the specific contexts, they are most influenced by geographic clustering from the spatial context and regulatory institutions from the institutional context. An increase in any of these factors (GDP, political stability, geographic clustering, regulatory intuitions) *decreases* the amount of necessity entrepreneurship activity. Surprisingly, necessity entrepreneurs are the only type of entrepreneurs that are not effected by social networks or social capital.

Opportunity entrepreneurs are most impacted by the spatial context, namely geographic clustering and the technology absorption, as well as by political stability. In contrast to necessity entrepreneurship activity, political stability *increases* the amount of opportunity entrepreneurs. Surprisingly, opportunity entrepreneurs are the only type of entrepreneurs that are not effected by regulatory institutions.

Formally registered entrepreneurs, measured by new business entry density, are most impacted by a country's level of development (GDP). In contrast to necessity entrepreneurship, an increase in GDP *increases* the amount of formal entrepreneurship. With regards to the specific contexts, they are most influenced by the

business context. They are the only type of entrepreneurs to be impacted by both sound money and price stability in the business context. Of all the other types of entrepreneurs, they are the most sensitive to sound money.

CONCLUSION

Contrary to the common assumption that entrepreneurship is solely a product of the actions of the lone individual agent, this study illustrates that entrepreneurship is a more complex phenomenon with multiple layers that each play an important role in shaping entrepreneurial behaviors. There is too often a "tendency to underestimate the influence of external factors and overestimate the influence of internal or personal factors" (Gartner, 1995). Much attention is paid to the individual entrepreneurs who capture these opportunities, and the individual entrepreneur is awarded a heroic status in modern society, but little attention is paid to the environmental environment forces which give birth to this opportunity and shapes its existence (Aldrich, 1994). Our study examines the different layers within the external environment which have commonly been assumed away.

The objective of this paper was to strengthen the evidentiary basis for the impact of context on entrepreneurial activity. We achieve this by using Welter's (2011) four "where" dimensions of context as a theoretical framework to test the effects of the institutional context, the social context, the business context, and the social context on the rate of entrepreneurship activity. Our study fits in with the growing body of literature on the contextualization of entrepreneurship (Gartner 1995; Steyaert and Katz 2004; Aldrich 2009; Gartner 2008; Welter, Baker, & Wirsching 2008; Low & MacMillan, 1988) to show whether there are *similarities* in the *types* of context that impact entrepreneurship activity globally. Although contextualization emphasizes recognizing *differences*, we identify

similarities across space and time because it allows us to claim generalizability with greater confidence and make more accurate claims of universal theory. Understanding context is understanding both how contexts are similar and how they are unique.

All around the world, entrepreneurs are faced multiple contexts: the social and ethical at the individual level, the organizational or business at the meso level, and the economic, political, geographic, and institutional at the macro level (Schegloff 1991). Does that mean that "you need to contextualize everything from A to Z before you can make such claims" (Welter, Baker, & Wirsching 2008)? Welter emphasizes that this argument is "counterproductive" because although "everything can be contextualized, [and] everything can become context for something else - context is not everything" (Welter, Baker, & Wirsching 2008). Healthy contextualization entails "sensible approaches to contextualization that provide guidance" (Welter, Baker, & Wirsching 2008). In the absence of practical rigorous evidence based research that examines the impact of contexts, this study provides one of the first longitudinal investigations across countries to understand the effects of the multiple layers of context on entrepreneurship activity. To our best knowledge, this is the first study that examines the impact of the multiplicity of contexts on the different types of entrepreneurs.

BOUNDARIES AND LIMITATIONS

This paper has several limitations that present opportunities for future research. First, although we find the combinative impact of what contexts impact which type of entrepreneurship activity, we do not explore why it is the case that this particular context impacts this type of entrepreneur. For example, we find that for those

entrepreneurs that operate based on recognizing an interesting opportunity in the market (opportunity TEA), regulatory institutions are not significant in explaining their variation in startup activity. There is an opportunity for future studies to extend this finding qualitatively to investigate why. We are cognizant that the empirical methods used to verify Welter's (2011) framework in this study are limited to identifying what specific contexts are impactful for what type of entrepreneurship activity, but not how nor why.

Second, between our four dependent variables, one measures of entrepreneurship activity include includes the combined measure of formal and informal entrepreneurship activity (total entrepreneurship activity) and another is an individual measure of formal entrepreneurship activity (new business entry density). Because we do not use an individual measure of only informal entrepreneurship activity at the country level, our conclusions about the impact of context on specifically informal entrepreneurship activity are limited. There is an opportunity for future studies to investigate the impact of the four dimensions of context on solely informal entrepreneurship activity alone to understand what contexts are important for unregistered entrepreneurs that are not protected or monitored by the legal system. We invite scholars to continue in this growing line of research in the field of entrepreneurship to provide answers on the impact of context on entrepreneurship activity.

Figures and Tables

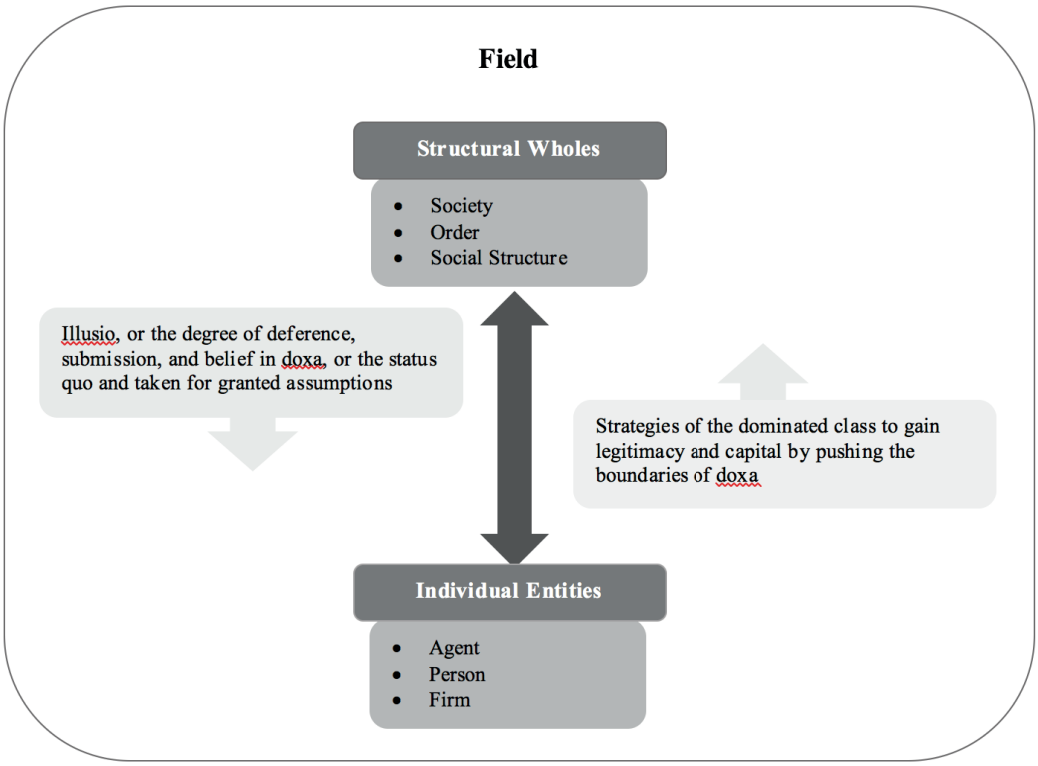


Figure 4-1: A stylized figure of Bourdieu's conceptual framework of context. For Bourdieu (1990), individual action is not a result of total conditioning, nor is it a result of unrestricted freedom and creativity

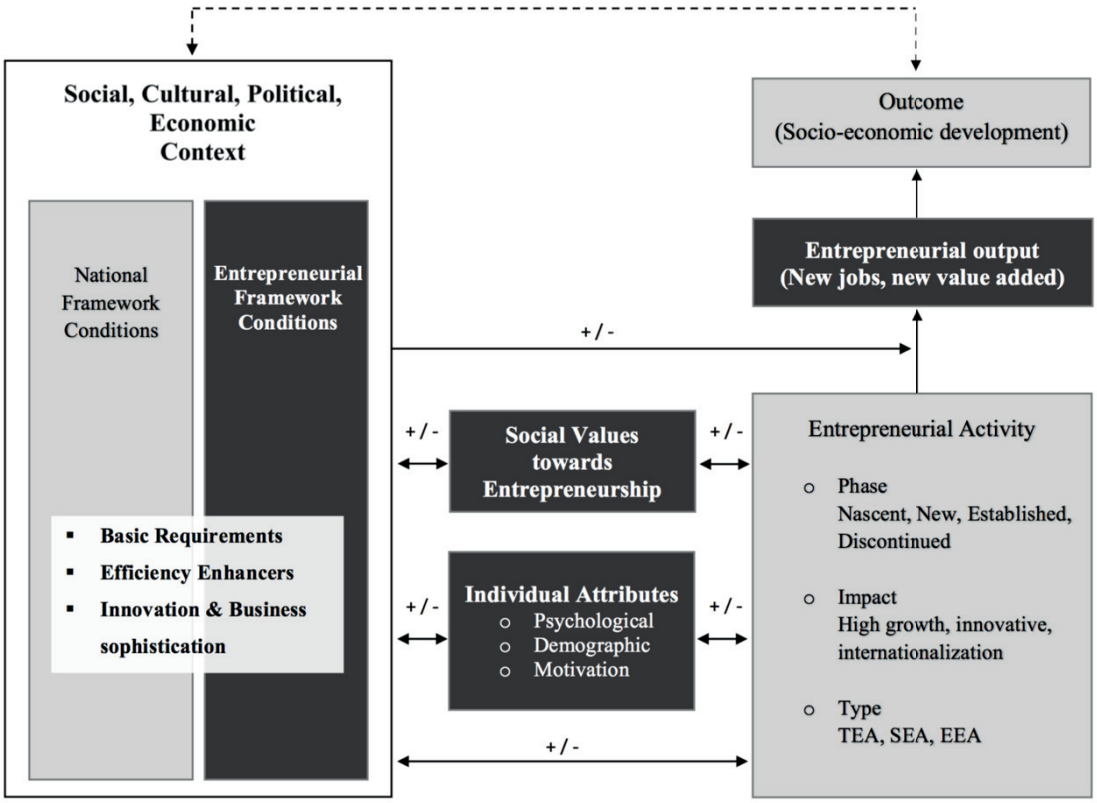


Figure 4-2: A stylized figure of the GEM conceptual framework of context

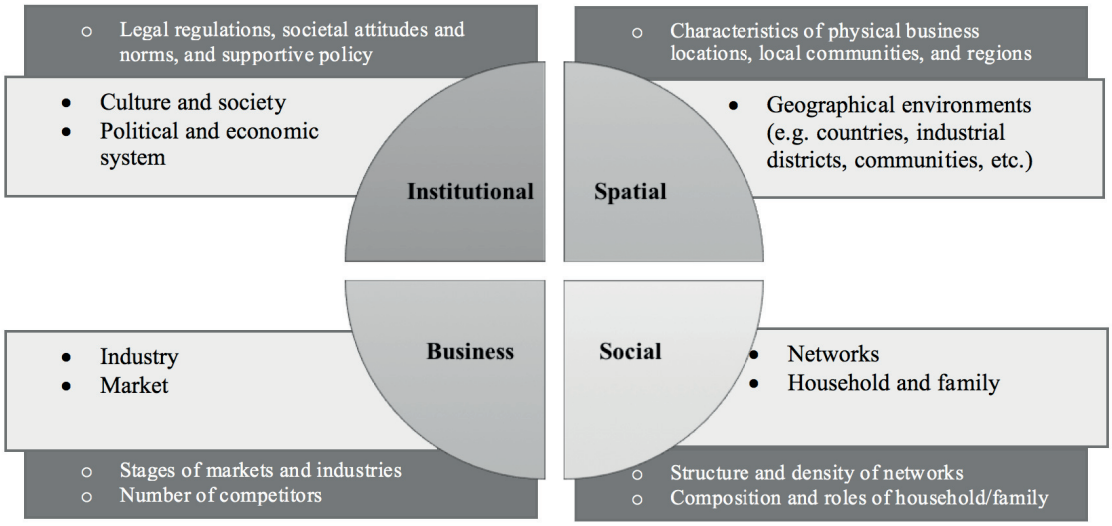


Figure 4-3: A stylized figure of Welters (2011) four "where" dimensions of context for entrepreneurship

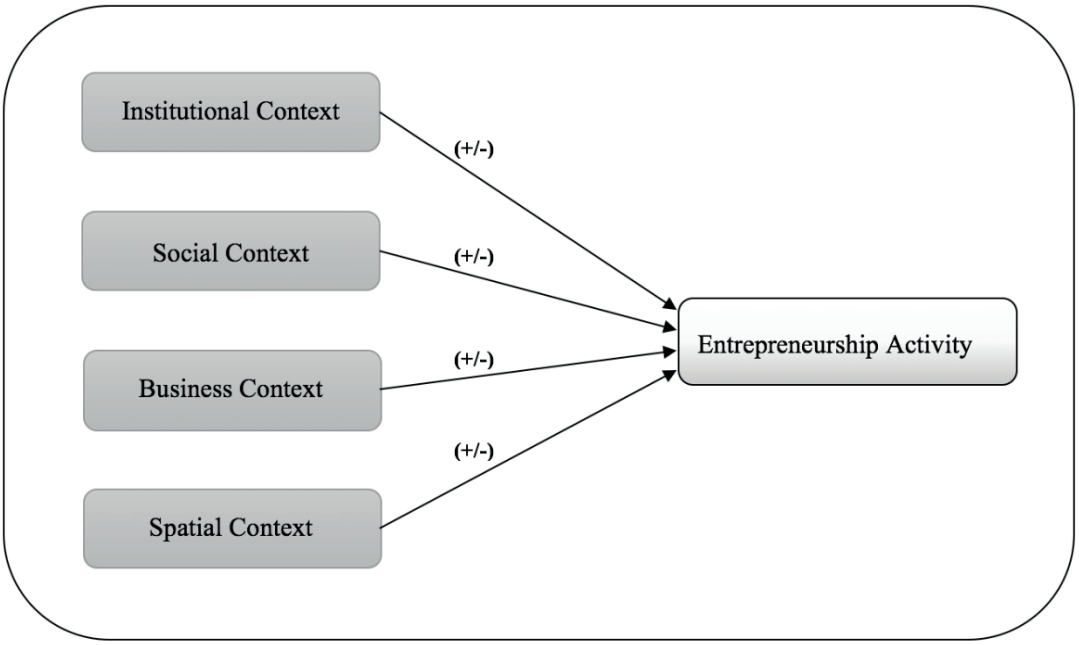


Figure 4-4 The impact of institutional context, social context, business context, and spatial context on entrepreneurship activity

Table 1 *Variables and sources (2007-2016)*

Variable Name	Variable description	Source
Total entrepreneurial activity (TEA)	The proportion of a country's population who are between 18-64 that are either nascent entrepreneurs or new business owner-manager of a firm less than 42 months' old	Global Entrepreneurship Monitor
Opportunity TEA	Opportunity TEA is the subset of "a country's population who are between 18-64 that are either nascent entrepreneurs or new business owner-manager of a firm less than 42 months old," which chose to engage in entrepreneurship based on recognizing an opportunity in the market that they were interested in pursuing	Global Entrepreneurship Monitor
Necessity TEA	Necessity TEA, on the other hand, is the subset of "a country's population who are between 18-64 that are either nascent entrepreneurs or new business owner-manager of a firm less than 42 months old," which chose to engage in entrepreneurship because they are pushed by unemployment or lack other means of generating income	Global Entrepreneurship Monitor
New entry business density (NBED)	The number of newly registered firms with limited liability per 1,000 working-age people (Ages 15-64) per calendar year	The World Bank
Business Environment	An index between 0 and 100 which measures the degree to which a country's regulations support a country's entrepreneurial environment, its business infrastructure, access to credit, investor protections and labor market flexibility	The Legatum Prosperity Index
Entrepreneurship Status	The percent of the adult population between 18-64 who believe that high status is afforded to successful entrepreneurs	Global Entrepreneurship Monitor
Fear of Failure	The percent of the adult population between 18-64 who believe that high status is afforded to successful entrepreneurs	Global Entrepreneurship Monitor
Social Networks	The percent of entrepreneurs that are between 18-64 who personally know someone who started a business in the past two years	Global Entrepreneurship Monitor
Social Capital	An index between 0 and 100 which measures the strength of personal relationships, social network support, social norms, and civic participation	The Legatum Prosperity Index
Price Stability (Consumer Price Index)	An index which calculates weighted averages of the percent changes in price for a hypothetical basket of goods to assess price stability and inflation in the market	The International Monetary Fund
Sound Money	An index between 0 and 10 which measures money growth, inflation, and the freedom to own foreign currency bank accounts	The Fraser Institute

Table 1 *Variables and sources (2007-2016)*

Variable Name	Variable description	Source
State of geographic clustering	An index between 0 and 7 which measures the extent of geographic clusters of firms, suppliers, producers, and specialized institutions.	World Economic Forum
Foreign direct investment & technology transfer	An index between 0 and 7 which measures the extent that foreign direct investment brings in new technology.	World Economic Forum
Firm-level Technology absorption	An index between 0 and 7 which measures the extent that local firms are able to adopt new technology.	World Economic Forum
Quality of scientific research institutions	An index between 0 and 7 which measures the quality of scientific research institutions.	World Economic Forum
GDP (PPP)	Gross domestic product valued at purchasing power parity, where as international dollar has the same purchasing power over GDP as a United States dollar has in the United States	The World Bank
Unemployment	The percentage between one and one hundred of total labor force unemployed	The World Bank
Corruption	An index from -2.5 (weak) to 2.5 (strong) to measure perceptions of the extent to which public power is exercised for private gain	World Governance Indicator
Political Stability	An index from -2.5 (weak) to 2.5 (strong) to measure perceptions of the extent of political instability or politically motivated violence.	World Governance Indicator

Source: Global Entrepreneurship Monitor, Fraser Institute, Heritage Foundation, International Monetary Fund, World Bank

Table 4-1: A description of the variables and their sources (2007-2016)

Table 4-2: Descriptive statistics and correlation matrix

	Mean	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
1. Total Entrepreneurship Activity	11.2	1																		
2. Opportunity TEA	7.7	0.969***	1																	
3. Necessity TEA	2.90	0.866***	0.741***	1																
4. NBED ln	.703	-0.181**	-0.110	-0.283***	1															
5. Business Environment	53.4	-0.379***	-0.275***	-0.516***	0.449***	1														
6. Entrepreneur Status	69.5	0.233***	0.208**	0.248***	0.00148	-0.0357	1													
7. Fear of Failure	33.9	-0.409***	-0.388***	-0.371***	-0.0522	0.136*	-0.188**	1												
8. Social Network	39.7	0.556***	0.518***	0.515***	-0.185**	-0.375***	0.320***	-0.395***	1											
9. Social capital	51.1	-0.149*	-0.0659	-0.288***	0.318***	0.698***	0.253***	-0.0861	-0.115	1										
10. Sound Money	8.29	-0.304***	-0.256***	-0.334***	0.382***	0.437***	-0.118	0.180**	-0.409***	0.307***	1									
11. Price Stability	93.9	0.212**	0.215***	0.157*	-0.0640	-0.151*	0.00427	-0.220***	-0.0123	-0.111	-0.0983	1								
12. State of cluster	3.86	-0.322***	-0.242***	-0.415***	0.0491	0.710***	0.0333	0.177**	-0.344***	0.614***	0.264***	-0.0890	1							
13. Firm Technology Absorption	4.92	-0.336***	-0.250***	-0.440***	0.237***	0.799***	0.0494	0.0804	-0.274***	0.627***	0.309***	-0.243***	0.748***	1						
14. Quality of Research Institutes	3.88	0.0785	0.0470	0.157*	-0.0670	-0.239***	-0.0909	0.0353	0.106	-0.281***	0.101	0.0359	-0.199**	-0.179**	1					
15. FDI & Technology Transfer	4.73	-0.00590	0.0342	-0.105	0.249***	0.476***	-0.0185	0.0533	-0.102	0.285***	0.149*	-0.156*	0.313***	0.532***	-0.0618	1				
16. PPPGDP ln	25.82	-0.350***	-0.317***	-0.336***	-0.265***	0.245***	-0.0390	0.424***	-0.368***	0.0796	0.0972	-0.135*	0.442***	0.212**	-0.150*	0.0644	1			
14. Unemployment	8.99	-0.122	-0.196**	0.0637	0.205**	-0.176**	-0.0297	-0.0981	-0.119	-0.185**	0.0785	0.0766	-0.306***	-0.221***	-0.0270	-0.109	-0.242***	1		
17. Corruption	.284	-0.430***	-0.343***	-0.539***	0.458***	0.866***	-0.00413	0.0988	-0.402***	0.712***	0.538***	-0.184**	0.633***	0.789***	-0.182**	0.353***	0.0960	-0.127	1	
18. Political stability	.042	-0.453***	-0.378***	-0.525***	0.535***	0.654***	-0.139*	0.112	-0.401***	0.496***	0.619***	-0.0901	0.394***	0.568***	-0.0205	0.296***	-0.107	-0.00676	0.790***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3 Fixed effects regression results

Variables	(1) Controls	(2) Total Entrepreneurship Activity	(3) Opportunity TEA	(4) Necessity TEA	(5) New Entry Business Density
Business Environment		-0.361**	-0.147	-0.168***	-0.0207*
		(0.142)	(0.139)	(0.0525)	(0.0113)
Entrepreneur Status		-0.0289	-0.0202	0.00851	0.00384
		(0.0398)	(0.0333)	(0.0149)	(0.00244)
Fear of Failure		-0.0886***	-0.0758***	-0.0379***	0.00208
		(0.0291)	(0.0278)	(0.00887)	(0.00280)
Social Network		0.0847**	0.0720***	0.000470	0.00544***
		(0.0346)	(0.0271)	(0.0141)	(0.00196)
Social Capital		-0.0713	-0.0212	-0.0400	-0.00179
		(0.110)	(0.0958)	(0.0423)	(0.0109)
Sound Money		0.802**	0.561**	-0.0551	-0.113*
		(0.401)	(0.279)	(0.178)	(0.0663)
Price Stability		0.0133	0.00582	0.00984*	-0.00779**
		(0.0137)	(0.0134)	(0.00578)	(0.00328)
State of cluster		-1.551**	-1.324**	-0.582**	-0.00297
		(0.704)	(0.519)	(0.232)	(0.0802)
Firm Tech. Absorption		4.431**	3.085**	0.600	0.226**
		(1.837)	(1.302)	(0.602)	(0.106)
Quality of Scientific Research Institutions		0.604	0.243	0.580*	-0.0451
		(0.673)	(0.539)	(0.304)	(0.0675)
FDI & Tech. Transfer		0.118	-0.419	0.353	-0.120
		(1.457)	(1.248)	(0.402)	(0.0949)
GDP (PPP) ln	-2.488	-1.057	0.750	-3.128**	1.297***
	(2.578)	(3.083)	(2.067)	(1.450)	(0.426)
Unemployment	-0.117	-0.163*	-0.145*	-0.0458	0.00205
	(0.0757)	(0.0858)	(0.0729)	(0.0496)	(0.0153)
Corruption	0.147	-1.342	-0.969	-0.273	0.164
	(1.024)	(1.577)	(1.259)	(0.594)	(0.185)
Political stability	-0.355	0.806	1.776*	-2.020***	0.182
	(0.841)	(1.585)	(1.041)	(0.633)	(0.121)
Constant	77.34	37.85	-16.46	94.10**	-31.92***
	(68.03)	(87.93)	(57.26)	(38.10)	(10.80)
R-squared	0.074	0.227	0.233	0.230	0.285
Prob > F	0.006	0.000	0.001	0.000	0.000
F stat	2.29	3.14	2.70	3.84	5.07
Year FE	YES	YES	YES	YES	YES

Standard errors are in parenthesis and clustered by country for robustness and heteroscedasticity.
Year dummies are included and suppressed to save space.
*** p<0.01, ** p<0.05, * p<0.1

Table 4-3: Results for fixed effects regression: The impact of the four dimensions' context on the different types of entrepreneurship activity: Total Entrepreneurship Activity (TEA), Opportunity TEA, Necessity TEA, and New Entry Business Density

CHAPTER 5

CONCLUSION AND MOVING FORWARD

The overall goal of this dissertation was to investigate the role of context in entrepreneurship activity. All around the world, entrepreneurs are faced multiple contexts: the social and ethical at the individual level, the organizational or business at the meso level, and the economic, political, geographic, and institutional at the macro level (Schegloff 1991). Country level entrepreneurship activity can be directly impacted by the multiple contexts in which it is embedded in, especially contexts that creates a conductive environment for entrepreneurship through particular social and institutional arrangements. Country level entrepreneurship activity can also directly impact the context in which it is embedded in, by stimulating economic development, improving standards of living, and raising the level of social wealth. The specific questions that I examine in the three papers in this dissertation are: (1) What are the primary antecedents and outcomes associated with country level entrepreneurship? (2) What is the effect of government entrepreneurship accelerator programs on the rate of country level entrepreneurial activity and standards of living within the country in which they are started, in comparison to other countries which have not adopted the government entrepreneurship accelerator program? (3) What is the effect of the institutional, social, business, and spatial context on overall entrepreneurship, opportunity entrepreneurship, necessity entrepreneurship, and formal entrepreneurship?

OVERVIEW OF THE RESULTS

The main results of my first paper in this dissertation are as follows. My second chapter systematically review the literature on the two most common measures of country

level entrepreneurship, Total Entrepreneurial Activity from The Global Entrepreneurship Monitor (GEM) and New Business Entry Density Rate from The World Bank Group Entrepreneurship Survey (WBGES), to understand the primary precedents and antecedents of country level entrepreneurship. I find seven main themes, some of which are precedents, some of which are antecedents, and some of which are both: institutions, culture, economic growth, knowledge and innovation, social networks, foreign direct investment, and individual level characteristics. The themes found are important in explaining entrepreneurship activity across a wide variety of economies and contexts, illustrating that some elements of entrepreneurship transcend boarders. I find a number of gaps, some of which are across themes and some of which are specific to a particular theme. I provide paths forward to unify the conceptual and empirical work forward. The results go beyond the annual GEM reports, by organizing the empirical evidence from studies in top journals that use either TEA or NBED and showing how empirical evidence converges or diverges in the literature. Rather than simply list country level variables for each economy to create a country profile, I identify how these country level variables have been tested in the entrepreneurship literature and the evidence that has been found across studies.

The main results of my second paper in this dissertation are as follows. My third chapter investigates the impact of Chile's new government initiatives Start-Up Chile, on the rate of startups as measured by total entrepreneurship activity (TEA) and on the standard of living in Chile, as measured by GDP per capita (PPP). The findings suggest that the 2010 Start-Up Chile government entrepreneurship accelerator program increased the number of startups by about 8.65 percent more in Chile than it did in Argentina-Brazil and increased the standards of living, as measured by GDP per capita (PPP), by 3,813

international dollars more in Chile than it did in Argentina-Brazil. These findings can serve as an illustrative precedent for other countries in this region aiming to promote entrepreneurship and improve standards of living in their own economy.

The main results of my third paper in this dissertation are as follows. My fourth chapter examines the impact of multiple contexts, more specifically the institutional, social, business, and spatial context, on the different types of entrepreneurship activity, namely: Total Entrepreneurship Activity, New Entry Business Density, Opportunity Entrepreneurship, and Necessity entrepreneurship. Findings suggest that all four contexts matter for total entrepreneurship activity, which captures all types of entrepreneurs (formal/informal/opportunity/necessity). Within the institutional context, regulative and cognitive institutions are significant. Within the business context, sound money is significant. Within the spatial context, clustering and firm technology absorption is significant. Within the social context, social networks is significant. We conclude that generally, these contexts important for all types of entrepreneurs. However, more specifically when we focus more closely on opportunity entrepreneurs, we find one small but important difference. The same contexts and variables within that were important for overall TEA are important for opportunity entrepreneurs, with the exception of regulative institutions. We conclude that more specifically for those entrepreneurs that operate based on recognizing an interesting opportunity in the market, regulatory institutions are not important in explaining their variation in startup activity.

As for necessity entrepreneurs, one measure of the business context, sound money, which was shown to be significant and important in the business context to explain total entrepreneurship activity and opportunity entrepreneurship, is no longer significant for

necessity entrepreneurship. A new variable in the business context, price stability, emerges as significant in the business context. This suggests that necessity entrepreneurs are more sensitive to inflation and price volatility from their economies consumer price index than other types of entrepreneurs. In addition, neither social networks nor social capital is significant in explaining the variation in necessity entrepreneurship, deeming the social context as a whole insignificant.

As for formally registered entrepreneurs, which is captured by new entry business density, we find that both measure of the business context are significant, sound money and price stability. This suggests that for formal entrepreneurship, there is a strong emphasis for the importance of the business context in explaining new business entry. We also find that this is the only type of entrepreneurship amongst the four investigated where only regulatory institutions are important from the institutional context and only firm technology absorption is important from the spatial context.

Two unexpected and interesting findings emerge overall from this study. First, geographic clustering within the spatial context is negative across all types of entrepreneurs in which it is significant. There are disadvantages of agglomeration, and in some cases, the negative externalities of spatial clustering will outweigh the positive externalities, which seems to be the case for all types of entrepreneurs in this study. Second, we find that some contexts will promote a certain type of entrepreneur but demote another type of entrepreneur. For example, political stability leads to an increases opportunity entrepreneurship, but a decrease in necessity entrepreneurship. GDP leads to an increase in formal entrepreneurship, but a decrease in necessity entrepreneurship. Table 5-1

presents a summarized overview of the three papers research questions, data, methods, and findings.

RESEARCH STREAM MOVING FORWARD

The findings from this dissertation present new opportunities for future research. This section provides direction and recommendations for future advances in the field of international entrepreneurship.

Gaps from examining the outcomes and antecedents of country level entrepreneurship

The systematic literature review of the two country level measures of entrepreneurship, TEA and NBED, show that a number of gaps exist across all outcomes and antecedents of country level entrepreneurship. First, there is a dearth of studies which focus to examine a particular region. This is especially important in the area of international entrepreneurship in order to

Table 5-1: An Overview Summary of the Three Dissertation Papers

	Chapter 2 Country-Level Entrepreneurial Activity: A Critical Review and Research Agenda	**Chapter 3** Government Intervention to Bolster Entrepreneurship: The Case of Start-Up Chile	**Chapter 4** The Context for Entrepreneurial Activity: An Empirical Exploration
Research Question	What are the primary precedents and antecedents associated with country level entrepreneurship?	What is the effect of government entrepreneurship accelerator programs on the rate of country level entrepreneurial activity and standards of living within the country in which they are started, in comparison to other countries which have	What is the effect of the institutional, social, business, and spatial context on overall entrepreneurship, opportunity entrepreneurship, necessity entrepreneurship, and formal entrepreneurship?

		not adopted the program?	
Data	2005-2017	2001-2016 * The Global Entrepreneurship Monitor * The World Bank * The Fraser Institute	2007-2016 * The Global Entrepreneurship Monitor * The World Bank * The Fraser Institute * The Legatum Prosperity Index * The International Monetary Fund
Methodology	Systematic Literature Review	Difference in Difference Model	Fixed Effects Regression
Finding	Seven emerging antecedents and/or precedents: * Institutions * Culture * Economic Growth * Knowledge & Innovation * Social Networks * Foreign Direct Investment * Individual Level Characteristics	The 2010 Start-Up Chile government accelerator program increased the number of startups by about 8.65 percent more in Chile than it did in Argentina-Brazil and increased the standards of living, as measured by GDP per capita (PPP), by 3,813 international dollars more in Chile than it did in Argentina-Brazil.	All four contexts, the institutional, social, business, and spatial impact total entrepreneurship activity (which measures all types of entrepreneurs, formal/ informal/ opportunity/necessity). However, each specific type of entrepreneur (i.e. necessity entrepreneur) is impacted by a different context.

understand the differences that exist across economies and develop theory at regional level, and in order to challenge how current theory that is generalized for all regions is falls short. Regional studies not only offer a new and distinct playground for the researcher to investigate startup activity, but also allow the field to advance theoretically.

Second, although a variety of types of regressions were used to examine topics in country level entrepreneurship, these methodological techniques do not capture unobserved systematic differences across countries, unobserved systematic differences across time, nor do they account the different forms of endogeneity that can take place in questions of economic growth and knowledge spillover, such as reverse causality. Only

8% of the articles account for any form of endogeneity. Despite the public availability of over ten years of data for country level measures of entrepreneurship, the vast majority of studies in the literature review do not take advantage of this extended period and utilize the panel data sets, but rather employ either a cross sectional or two to three years' data to investigate their question of interest. These is large opportunity for re-examining what we already know about the field of international entrepreneurship using new and advanced methodological techniques in order to claim generalizability with greater confidence, or re-examine our current knowledge in the field.

Ways to move forward from examining the impact of a government program on entrepreneurship rates

The empirical findings from the examination of government policy on entrepreneurship rates present a number of opportunities for future research. First, there is an opportunity for future studies to examine whether the theory of government intervention for increasing entrepreneurship rates and revitalizing an economy through policy holds across different economies, both developed versus emerging, or only in the region in which it was examined. This opportunity is in line with our findings from the systematic literature review. Another path forward that is more specific to this paper rather than the general literature is testing whether the innovation, growth, and survival of businesses that were beneficiaries from the government intervention is similar to the innovation, growth, and survival of businesses that were not beneficiaries from the government intervention. This would give insight not only on the number of ventures that were started because of policy intervention, but also on the quality of their benefits to the overall economy and society.

Ways to move forward from examining the impact of multiple contexts of different types of entrepreneurs

The empirical findings from the examination of the impact of multiple contexts on different types of entrepreneurs also presents a number of opportunities for future research. First, there is an opportunity to investigate whether there are interactions between the contexts which could lead to a magnified or reduced effect. For example, do social networks produce more of an impact on entrepreneurship activity in settings where institutions are weak? Interaction terms can provide insight on whether weak as opposed to strong institutions magnify the impact of social networks on startup activity. Another path forward would be to examine the impact of the multiple contexts on formal, opportunity, necessity, and overall entrepreneurship activity by gender. We have already examined the effect of multiple contexts on these four different types of entrepreneurs, however, we have not examined whether these effects differ by gender. Building upon the current study to understand whether context impacts women's rates of entrepreneurship activity differently than men's rates of entrepreneurship activity provides a deeper insight on both startup activity and the embeddedness of men and women within their contexts.

Looking at Future Research Through a Kaleidoscope

Looking through a kaleidoscope, other future opportunities emerge through alternating between different phenomenas, methods, and theories. In paper two, this dissertation examined one phenomena, namely government program Start-Up Chile, using one method, a difference in difference model, using one theory, regulative institutional

theory. One way forward would be to examine this same phenomena, namely government program Start-Up Chile, but through a different method theory. For example, now that we have established that Start-Up Chile has increased total entrepreneurship activity at the country level and standards of living, investigating why at the micro level through interviews with Start-Up Chile entrepreneurs using an individual level theoretical lens provides a more comprehensive and complete understanding of the startup process. Therefore, one way forward would be to extend this study to a multi-method approach by incorporating the narratives of entrepreneurs who went through one of the Start-Up Chile cohorts in the past eight years. This would provide knowledge on the why and how the government program facilitated startup activity to complement the current findings.

A second way forward would be to examine a different phenomena, such as informal entrepreneurship activity in Africa, using the same method, a difference in difference model, and theory, regulative institutional theory to understand which country level policies decrease this type of entrepreneurship and assist in the transition to the formal economy. According to a global estimate of informal employment by the International Labour Organization/WIEGO (2018), 61 percent of the worlds workers are informal. The International Labour Organization/WIEGO (2013) estimates that the informal economy contributes about 30-50 percent of gross domestic product to economic activity in developing nations such as West Africa, India, and Colombia, and about 20 percent in developed economies. This sector, which is commonly neglected in economic analysis and policy (Hoyman 1987), is a significant portion of a country's employment, income, and social wealth. It can be a powerful instrument for creating inclusive growth. In the most

parts of the developing world, women make up a larger share of the informal economy (Chen 2005). For example, in Subsaharan Africa, women make up 84 percent of the informal economy, compared to 63 percent men (Chen 2005). Despite the higher rate of participation for women in the informal economy, women still face a striking gender gap in earning, which in some cases surpasses the gender gap faced in the formal economy (Chant & Pedwell 2008). This extension of the dissertation provides an impact in a variety of areas, such as: Macroeconomic policy, employment, and gender; regulatory institutions and labor laws; work, family, women and unpaid work; security and protection; women and access to finance; and strategies for countries and international organizations to develop the informal economy.

A third way forward would be to examine either of the phenomenas above, but use a different theory, namely gender theory. This extension would focus only on a subset of the population, the women in Start-Up Chile or the women in the informal economy, to understand the ways in which the startup process varies for women. Year by year, the Global Entrepreneurship Monitor reports show that on average, women start businesses at a smaller rate than men in most countries. This extension to the dissertation would contribute in understanding why this gap exists either in the formal economy, or why women make up a larger share of startups in the informal economy. It was concluded from paper 2 that Start-Up Chile was successful in raising the overall rate of entrepreneurship at the county level, however, the average estimate provided by the difference and difference model does not specify how much of those ventures were started up by women. Therefore, it cannot be concluded whether the government accelerator program Start-Up Chile has benefited both men or women in the same way. This extension would be useful in filling

that gap. Similarly, policies targeting informal entrepreneurship can be explored using gender theory to understand how the transition from the from the informal to the formal economy varies for women entrepreneurs.

In sum, alternating between different phenomenas, methods, and theories provides a breadth of possibilities forward for future research. We suggest three ways through this section. First, one way forward extends paper 2 to use a different method and different theory, namely qualitative interviews and individual level thoery, to understand the microlevel startup processes. A second way forward examines a different phenomena, specifically informal entrepreneurship activity in Africa, using the same method and theory, a difference in difference model and institutional theory, to explore country level policies that assist in the transition of informal entrepreneurship. A third way forward forward can can explore either of the phenomenons, but use a different theory, namely gender theory, to understand the formal or informal startup process for women entrepreneurs.

CONCLUSION

The purpose of this dissertation was to examine the role of context in entrepreneurship. Too often, context is "assumed away" (Peng Sun Pinkham 2009). I intend to shed light on the role of context in facilitating country level entrepreneurial activity through this dissertation. First, I review the literature which has investigated the precedents and antecedents of country-level entrepreneurial activity using the two most common country level measures of national entrepreneurial activity: Total Entrepreneurial Activity from The Global Entrepreneurship Monitor (GEM) and New Business Density from The World Bank Group Entrepreneurship Survey (WBGES). I find seven main

precedents and/or antecedents summarized above. The precedents of entrepreneurship activity essentially emerge from the context in which the entrepreneur is embedded in, while the antecedents of entrepreneurship is what entrepreneurs give back to their contexts through their venturing efforts.

Second, I dive deeper to focus on a particular region, South America, and more specifically Chile, Brazil, and Argentina, to investigate the direct impact of government policy on the rate of country level entrepreneurial activity and standards of living. I examine this phenomenon from a regulative institutional lens, and more precisely focus on the argument of government intervention versus the invisible hand in the context of South America. I provide an exhaustive fifteen-year analysis of a government program initiative, known as Start-Up Chile, which was incepted in 2010 to boost startup activity and stimulate the Chilean economy. I find two key antecedents to the government accelerator program, namely increasing entrepreneurship rates and higher standards of living.

Third, I follow up the focused empirical study which concentrates on the South America region, with a broad wide-ranging empirical study of multiple context and entrepreneurship activity at the country level. The choice to engage in entrepreneurial activity is shaped through a multiplicity of contexts which vary across different regions and countries around the world. As seen with the case of Chile, context can be either an asset and facilitate new venture creation or a liability and hinder new venture creation. In this final study, I use Welter's four "where" dimensions of the context for entrepreneurship (2011) as a framework to investigate the effect of the institutional, social, business, and spatial context on overall entrepreneurship, opportunity entrepreneurship, necessity entrepreneurship, and formal entrepreneurship. This study illustrates how the variety of

contexts impact the different of types of entrepreneurship differently. Taken together, while all three papers explore entrepreneurship activity at the country level, each paper focuses on a specific component of the role of context in entrepreneurship activity, offering one piece of a puzzle, to understand entrepreneurship across the world holistically.

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CHAPTER 2

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CHAPTER 4

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CHAPTER 5

Peng, M. W., Sun, S. L., Pinkham, B., & Chen, H. (2009). The institution-based view as a third leg for a strategy tripod. *Academy of Management Perspectives*, *23*(3), 63-81.
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VITA

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