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BUSINESS FAILURE AND ENTREPRENEURSHIP: THREE ESSAYS ON THE EFFECTS OF THE COST OF FAILURE

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ABSTRACT

When entrepreneurs encounter business failure, they have to bear the financial, emotional, and social cost of failure. Prior research on the effects of these costs has focused mainly on entrepreneurial exit context or on the quantity of new firms. Moreover, these studies suggest to policy makers to establish institutions to lower the costs of failure with the aim of increasing entrepreneurial activities. However, this dissertation seeks to improve our understanding by providing more extensive and fine-grained assessments of the effects of the cost of business failure in entrepreneurship contexts. The first essay in this dissertation conducts a systematic review regarding the role of institutions that are related to the cost of business failure in entrepreneurial decisions and behaviors. The review extensively takes stock of what has been studied on the effect of the costs of failure and provides future research questions to advance our knowledge. The second and third essay respond to the call of research questions from the review study of this dissertation while utilizing real options logic and multi-level analysis. In particular, the second essay shows that while high social costs of failure can negatively impact the quantity of entrepreneurs in society, there can also be a positive impact on the quality of the entrepreneurs who enter and persist in their careers. In particular, this study finds evidence of a positive relationship between high social costs of business failure and the entry of entrepreneurs with growth and export orientation. The third essay finds that the stigma of failure is positively associated with social entrepreneurship entry decisions. Further, the stigma of failure affects revenue-generating type social entrepreneurship, but not NGO-type social entrepreneurship.

BUSINESS FAILURE AND ENTREPRENEURSHIP: THREE ESSAYS ON THE EFFECTS OF THE COST OF FAILURE

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CHAPTER I :

DISSERTATION OVERVIEW

1. BACKGROUND

This dissertation consists of three essays exploring the cost of business failure and its impact on entrepreneurial decisions and behaviors. At the societal level, entrepreneurship has been recognized as an important source for job growth, accounting for about eighty percent of new jobs in the United States (Birch, 2000; Birley, 1986), and for technological innovation and productivity enhancement (Baumol, 1996; Low & MacMillan, 1988; Schumpeter, 1934). At the individual level, entrepreneurship has been considered as an important career option for people because it allows them to pursue their independence, financial rewards, or desire to help others (Douglas & Shepherd, 2000; Mair & Marti, 2006). Although all entrepreneurs are interested in creating successful ventures, most entrepreneurs fail because the outcome of a new venture is uncertain (Knight, 1921; Ucbasaran, Shepherd, Lockett, & Lyon, 2013). In particular, data from the U.S. Bureau of Labor Statistics reveals that about 650,000 businesses have been established annually during the period from 2005 to 2015 in the United States; however, about 50% of new businesses survive for five years and only about 35% of them survive after ten years (Bureau of Labor Statistics, 2016). The study by Dunne, Roberts, and Samuelson (1988) indicates a similar result in that 62% percent of newly established businesses in manufacturing industry exit the market within five years. Further, Knaup (2005) states that the exit rate in the manufacturing industry does not vary in other industries. At the same time, family businesses that account for about 90% of all business in the United States are no exception; 70% of them fail to succeed to the second generation, and 90% of them fail to succeed to the third generation (de Vries, 1993).

However, business failure has been conceptualized in a number of ways from the broad perspective to the narrow perspective in the entrepreneurship literature. For example, the broad definition considers business failure as the discontinuity of ownership, which includes the business

exit reasons due to poor economic performance, difficulty to find resource providers, personal reasons including retirement and selling a business for profit. However, the narrow definition considers business failure only as the discontinuity of the business due to bankruptcy or insolvency (Singh et al., 2007; Ucbasaran et al., 2013). In particular, Shepherd (2003) defines business failure by stating, "Business failure occurs when a fall in revenues and/or a rise in expenses are of such a magnitude that the firm becomes insolvent and is unable to attract new debt or equity funding; consequently, it cannot continue to operate under the current ownership and management" (p. 318). Since the broad definition of business failure includes the business exit with success (Wennberg, Wiklund, DeTienne, & Cardon, 2010), this dissertation takes the narrow definition of business failure that only addresses the discontinuity of the business due to bankruptcy or insolvency. The motivation is because the entrepreneurs who exit from their business for profit often do not bear the cost of business failure.

When entrepreneurs encounter business failure, there are both positive and negative consequences that they experience. For example, business failure can be a learning opportunity for subsequent success (Coelho & McClure, 2005; Cope, 2011; Shepherd, 2003). However, failed entrepreneurs also incur costs associated with business failure. These costs are not just financial in nature, but extend to social and emotional costs as well (Shepherd & Patzelt, 2017). First, business failure is likely to impose a financial cost of failure on entrepreneurs. In particular, failed entrepreneurs face the loss of or reduction in personal income, and are often responsible for personal debt after failure, which takes a long period to repay (Cope, 2011). As such, failed entrepreneurs without sufficient savings or financial aid from acquaintances or government would face the issue of survival for themselves or their family. Second, business failure is associated with the emotional cost of failure. Specifically, failure brings several negative emotions such as grief,

pain, guilt, shame, humiliation, anger, and fear (Harris & Sutton, 1986; Shepherd, 2003). In particular, Shepherd (2003) highlights that business failure is like losing someone whom he/she loves, inducing the emotion of grief. Third, a business failure can lead to the social cost of failure, which negatively influences an entrepreneur's personal and professional relationships. For example, failed entrepreneurs often experience the breakdown of marriage and close relationships (Cope, 2011; Singh, Corner, & Pavlovich, 2007). At the same time, business failure may harm the quality of the professional relationships in that a failed business's stakeholders including investors, suppliers, employees and other stakeholders jettison support from the failed entrepreneurs (Singh, Corner, & Pavlovich, 2015; Sutton & Callahan, 1987).

It is widely accepted that the costs of failure significantly influence entrepreneurial decisions and behaviors (Shepherd & Patzelt, 2017). However, the magnitude of the costs of business failure is determined by institutional factors (Lee, Peng, & Barney, 2007; Simmons, Wiklund, & Levie, 2014; Sutton & Callahan, 1987; Ucbasaran et al., 2013). There is also a general belief that the higher the cost of business failure, the more it hinders entrepreneurial activities. This has led policy makers to establish institutions aimed at reducing the cost of business failure (Baldwin, 1997). Thus, considerable attention from academia and practice has been given to the study exploring the role of institutions that influence the magnitude of the cost of failure in entrepreneurship contexts. Despite the importance of institutional factors, the current literature lacks a consensus on the role of the institutions in the entrepreneurship context and our knowledge is still limited. Therefore, this dissertation aims to advance our understanding of the cost of business failure in entrepreneurship by providing more extensive and fine-grained assessments.

2. OVERVIEW OF THREE ESSAYS

The first essay in the second chapter conducts a systematic review on the relationship between institutions and the cost of failure in entrepreneurship contexts. Although a large body of research has examined the institutional factors that influence the cost of business failure, it has mainly focused on bankruptcy laws that determine the financial cost of failure. Moreover, previous studies have mainly focused on the role of the institutions related to the cost of failure at the entrepreneurial exit stage. Accordingly, there is a need of a literature review taking a holistic view by looking at the impact of the institutions more systematically in entrepreneurship from the beginning (i.e., entrepreneurial entry stage) to development (i.e., entrepreneurial development and growth stage) to the end (i.e., entrepreneurial exit stage). The lack of an extensive review paper on this important topic limits the validity of current findings and the future direction of entrepreneurship literature. Therefore, the purpose of this systematic review is to delineate the state of development of the current literature. Specifically, asking how the institutional factors related to the cost of failure influence entrepreneurial decisions and behaviors and to suggest future research questions advance our understanding the impact of institutional factors in the entrepreneurship context.

The second essay in the third chapter conducts an empirical study to explore the role of social cost of failure in commercial entrepreneurship contexts with real options theory. The central tenet of real options theory is that investment decisions can be treated as the exercising of options with the cost of the investment being the strike price of the option (Dixit, 1989, p. 621) and the option price is determined by uncertainty (Dixit, & Pindyck. 1994). Because the outcome of entrepreneurial entry decision is uncertain (Knight, 1921), real options logic can be an appropriate lens to examine entrepreneurial entry decisions by exploring the relationship between the level of

uncertainty influenced by the cost of failure and the option price of entrepreneurial entry. Drawing on real options logic, I argue that while high social costs of failure can negatively impact the quantity of entrepreneurial activities in society, there can also be a positive impact on the quality of the entrepreneurs who enter and persist in their careers. Using a sample of 264,620 individuals from 35 GEM countries, this study finds evidence of a positive relationship between high social costs of business failure and the entry of entrepreneurs with a growth aspiration or export orientation. This study also finds that the level of education can increase the real options of entrepreneurs in societies where the social costs of business failure are high.

The third essay in the fourth chapter conducts an empirical study to explore the role of the stigma of failure in social entrepreneurship contexts. It is widely accepted that the stigma of failure is negatively associated with commercial entrepreneurship entry decisions. However, we know little about the role of the stigma of failure on social entrepreneurship entry decisions. Informed by a real options logic, I hypothesize that the stigma of failure decreases the value of the option to defer social entrepreneurship entry. Results of a multi-level analysis of 51,022 individuals from 23 countries suggest that the stigma of failure is positively associated with social entrepreneurship entry decisions. Further, the stigma of failure affects revenue-generating type social entrepreneurship, but not NGO-type social entrepreneurship. Lastly, the level of education negatively moderates the effect of the stigma of failure on both social entrepreneurship and revenue-generating type social entrepreneurship entry decisions. This study is the first to examine the impact of the stigma of failure on social entrepreneurship contexts.

3. CONTRIBUTION

This dissertation seeks to improve our understanding of the impact of the cost of failure by providing a more extensive and fine-grained assessment of the implications of the cost of failure in entrepreneurship contexts. In particular, the systematic review essay in the second chapter provides an extensive assessment of the current literature that has explored the role of the cost of failure in entrepreneurship contexts, and suggests future research questions. Moreover, the empirical papers in the third and fourth chapter provide fine-grained assessments regarding the impact of the cost of failure on entrepreneurial entry decisions both in commercial and social entrepreneurship.

First, this dissertation offers an extensive assessment of the current literature by conducting a systematic review and suggesting future research questions, which can advance our understanding of the role of the costs of business failure in entrepreneurship contexts. Although there have been numerous studies looking at the role of the cost of failure in the entrepreneurship context, there is only one review paper focused specifically on the process (i.e., learning and sense-making) and the consequences of business failure (i.e., recovery, cognitive, and behavioral outcome) (Ucbasaran et al., 2013). However, the potential cost of business failure influences entrepreneurial decisions and behaviors at the entry and development/growth stage (Lee et al., 2007; McGrath, 1999; Vanacker, Heughebaert, & Manigart, 2014). Considering that there is a large number of studies exploring the important role of the cost of failure, the absence of a review paper focusing on the early stage and operating stage of entrepreneurship is surprising. Moreover, the fragmentation of the current literature makes it difficult to take stock of what we currently know about the impact of the cost of failure in entrepreneurship contexts and to identify future research questions. Thus, the systematic review in the second chapter contributes to the

entrepreneurship literature in multiple ways. It takes stock of current literature with an extensive view while looking at the role of the cost of failure from birth to death in the entrepreneurial process. In addition, Chapter II suggests potential research questions to advance our knowledge of this important topic.

Second, this dissertation contributes to the entrepreneurship literature by exploring the positive role of the cost of failure in entrepreneurship contexts. The field of entrepreneurship has been focused on the negative consequences of the cost of failure while emphasizing the quantity of entrepreneurship (Damaraju, Barney, & Dess, 2010; Lee, Yamakawa, Peng, & Barney, 2011). Because entrepreneurial activity bears risk-taking and uncertainty, the cost of failure can function as a positive role while reducing the undesirable entrepreneurial activities. However, there is relatively little known about the positive consequences of the cost of failure. The essays in the third and fourth chapter address this gap by showing that the cost of failure increases the quality of entrepreneurial activities such as entry with growth aspiration, international orientation, and social value creation, while it decreases the quantity of entrepreneurial activities. This dissertation demonstrates that there is more to learn about how these costs influence the composition of entrepreneurial activity in societies (Baumol, 1996).

Third, the two empirical essays in this dissertation contribute to the entrepreneurship literature by exploring the impact of the social cost of failure in entrepreneurship contexts. The current literature in entrepreneurship research has largely focused on the role of the financial cost of failure. Thus, we have little understanding about how the social cost of failure influences entrepreneurial decisions and behaviors. In particular, Damaraju et al. (2010) argue that the social cost of failure caused by the stigma of failure may influence entrepreneurial entry decisions even to individuals who are considering entrepreneurship as a career choice. Although Landier (2005)

shows that the stigma of failure is negatively associated with entrepreneurial activity using a mathematical model, there is a lack of empirical studies to show the relationship between the social cost of failure and entrepreneurial entry decisions. The empirical essays in this dissertation speak to this discrepancy by exploring the relationship between the social cost of failure and the entrepreneurial entry decisions of prospective entrepreneurs.

Fourth, this dissertation offers a fine-grained assessment by exploring the role of institutions that determine the costs of failure while utilizing multi-level analysis. Most of the empirical studies on the topic have examined the variance of regional or country-level entrepreneurial activities without considering the individual characteristics of the entrepreneur. Because entrepreneurial decisions and behaviors are influenced by individual characteristics such as human, social, financial capital (Shepherd, Williams, & Patzelt, 2015), it is important to consider both individual characteristics and the institutional factors that influence the magnitude of the cost of failure. Particularly, Davidsson and Wiklund (2001) suggest that researchers' choice of the level of analysis is necessary to establish and retain academic credibility. The multi-level empirical approach can advance our understanding the role of institutional factors on entrepreneurial decisions and behaviors. In sum, the multi-level analysis extends our knowledge of how individual characteristics and institutional factors related to business failure can influence entrepreneurial decisions and behaviors.

Lastly, this dissertation contributes the application of real options theory in entrepreneurship contexts. According to the systematic review paper in this dissertation, most of previous studies are mainly conceptual or explorative without theoretical arguments. Thus, it has been difficult to build a comprehensive understanding of how institutional factors would govern an individual's decision to be an entrepreneur. In order to move forward this important topic, it is

also important to examine the relationship through established theoretical lenses from different disciplines. Particularly, real options theory may advance our knowledge concerning the institutional factors related to business failure in entrepreneurial entry decision domain. Although real options theory has been a popular theoretical ground to examine investment decisions in the management discipline for several decades, it has not been widely applied in the entrepreneurship context. The key idea of real options theory is that investment decision can be treated as a decision to exercise an option and that the option price is determined by uncertainty and irreversibility of investments (Dixit & Pindyck, 1994). Accordingly, several authors emphasize the significance of real options theory in entrepreneurship research because of the shared characteristics such as uncertainty, investment irreversibility, and investor discretion (O'Brien, Folta, & Johnson, 2003). Moreover, McGrath (1999) states, “the essence of real options perspective is not avoiding failure but managing the cost of failure by limiting exposure to downside risk while preserving access to attractive opportunities.” However, there are relatively few studies utilizing real options theory to examine the impact of the cost of failure in entrepreneurship contexts. Moreover, the two empirical essays in this dissertation utilized several entrepreneurial options simultaneously rather than a using a single real option, contributing the application of real options theory in the entrepreneurship context.

While filled with these broad ambitions, my honest hope is that these efforts may shed some light on the impact of the cost of failure in entrepreneurship contexts and open the way for new research areas.

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CHAPTER II :

THE COST OF FAILURE AND INSTITUTIONS IN ENTREPRENEURSHIP:

REVIEW AND RESEARCH AGENDA

1. INTRODUCTION

Due to the high level of uncertainty regarding the outcome of entrepreneurial activities (Knight, 1921), business failure is a common outcome of the entrepreneurial process. When entrepreneurs fail, they experience both the positive and negative consequences of business failure. The positive side of business failure is that failed entrepreneurs can use their previous experience to build a foundation for future success for their subsequent ventures. For example, a business failure can be a learning opportunity for acquiring new knowledge and skills (Shepherd, 2003; Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005) and trigger failed entrepreneurs to look for other solutions that can be applied to subsequent ventures (Petroski, 1985). At the macro-level, the entrepreneurs' knowledge, skills, and new solutions earned from their business failures can move economies forward (Hayek, 1945; Hoetker & Agarwal, 2007).

However, business failure also induces various negative consequences to failed entrepreneurs, such as financial, emotional, and social costs of business failure (Shepherd & Patzelt, 2017; Ucbasaran, Shepherd, Lockett, & Lyon, 2013). Firstly, failed entrepreneurs bear the financial cost of failure by being responsible for personal debts to fund their businesses, and for the loss or reduction of personal income (Cope, 2011). Secondly, a failed entrepreneur bears the emotional cost of failure, such as grief, anger, shame, and other undesirable emotions (M. Cardon & McGrath, 1999; Singh, Corner, & Pavlovich, 2007). When entrepreneurs experience the failure of their businesses that are important to their life, they may have a greater level of negative emotion (Shepherd, 2003). Lastly, failed entrepreneurs face the social cost of failure by potentially losing personal and professional relationships, and are often subject to punishments by others, including former employees, suppliers, and other stakeholders (Sutton & Callahan, 1987). The three different costs of failure are often interrelated.

Due to both the positive and negative consequences of business failure, it is widely accepted that the cost of failure significantly influences entrepreneurial decisions and behaviors (Shepherd & Patzelt, 2017). Previously, scholars have explored the role of the institutions in entrepreneurship because institutional factors change the magnitude of the cost of business failure at the individual level (Ucbasaran et al., 2013). Moreover, there is a general belief that lowering the cost of failure may motivate more entrepreneurial activities. Thus, policy makers around the world have been attempting to create or change institutions with the purpose of reducing the magnitude of the cost of business failure. Although a large body of research has examined the institutional factors that influence the cost of business failure, it has mainly focused on bankruptcy laws that determine the financial cost of failure. Considering the importance of the institutional factors that influence the cost of business failure in entrepreneurship contexts, from both academic and practical perspective, the absence of a review paper is surprising. Moreover, there is a need for a review paper that takes a holistic view by looking at the impact of institutions more systematically in entrepreneurship - from the beginning (i.e., entrepreneurial entry stage) to the development (i.e., entrepreneurial development and growth stage) to the end (i.e., entrepreneurial exit stage). Accordingly, this systematic review takes stock of what we currently know about the institutional impact that influences the cost of failure on entrepreneurial decisions and behaviors, and identifies future research questions to advance our understanding of the role of the institutions in entrepreneurship.

In this paper, I provide an extensive review of the literature with the following questions:

(1) What is the state of development of the current literature asking how the institutional factors related to the cost of failure influence entrepreneurial decisions and behaviors?

(2) How can we advance our understanding of the impact of institutional factors in the business failure literature?

This systematic review develops a unique analytical framework that covers all three types of costs of failure by examining the three stages of the entrepreneurial process from the beginning to the end (i.e., entrepreneurial entry, growth, and exit stage). At the same time, this review inductively categorizes the identified studies into its analytical framework. The next section explains the method and the analytical framework that this review utilized. The review then summarizes the previous studies that have explored the role of institutions that influence the cost of failure in the entrepreneurial process. This review will help researchers and practitioners identify the previous findings on this topic. This review ends by suggesting future research questions to advance our understanding of the role of the institutions related to the business failure.

2. METHOD

When developing this extensive review, I followed the systematic literature review process that was outlined by Tranfield, Denyer, and Smart (2003). In order to minimize bias and to allow for future replication, this systematic review emphasizes (1) appropriate keywords, (2) coverage of all relevant sources, and (3) clear criteria for inclusion and exclusion.

As a first step, I clarified the definition of business failure used in this study, so that keywords could be easily identified for the literature search. It is important to have a clear definition, because business failure has been conceptualized in a number of ways. In particular, the broad perspective views business failure as the discontinuity of ownership regardless of the exit reason. The broad perspective includes both the discontinuity of the business due to poor

economic performance and the sale of the business, whether for retirement or profit; whereas, the narrow perspective views business failure as the discontinuity of a business due to bankruptcy, or insolvency (Singh et al., 2007; Ucbasaran et al., 2013). This study utilizes the narrow definition of business failure that only addresses the discontinuity of the business due to bankruptcy or insolvency, since the broad definition of business failure includes the business exit with success (Wennberg, Wiklund, DeTienne, & Cardon, 2010) where the entrepreneurs often bear a lower cost of business failure. For this reason, this study use the following search keywords for business failure such as "failure," "closure," "bankruptcy," "insolvency," "liquidation," and "death" in the title, abstract, and keywords for each article. Following Ucbasaran et al.'s (2013) example, this study does not include the search term "exit" because this study uses the narrow definition of business failure. At the same time, I include some keywords to limit the scope of the search to only include articles that address entrepreneurship, such as "entrepreneur*" representing entrepreneur(s), entrepreneurism, entrepreneurial, entrepreneurship and "ventur*" on behalf of venture(s) and venturing. Therefore, this systematic review results in 12 combinations of the search keywords from entrepreneurship and business failure.

As a second step, it is important to cover all relevant articles for the systematic literature review. Accordingly, I searched for studies related to this topic in the leading management/entrepreneurship electronic databases, such as ABI Inform, Business Source Elite, Web of Science, and Science Direct. These four databases include comprehensive collections of generalist and specialist journals that most frequently publish entrepreneurship studies, as well as conference proceedings where peer-reviewed work on this topic is likely to appear. In particular, these databases cover the important journals in entrepreneurship (e.g., Academy of Management Journal, Academy of Management Review, Organization Science, Administrative Science

Quarterly, Management Science, Strategic Management Journal, Journal of Management, Journal of International Management Studies, Strategic Entrepreneurship Journal, Entrepreneurship Theory & Practice, Journal of Business Venturing, Small Business Economics and Journal of Small Business Management) and the conference proceedings from major entrepreneurship conferences (e.g., Academy of Management Annual Meeting Proceedings and Babson College Entrepreneurship Research Conference Proceedings). Moreover, this review did not restrict the time of publication because this review has a relatively narrow scope of the topic, but wants to cast a wide net. This study satisfies the condition of a systematic literature review regarding the coverage of all relevant sources, by examining a broad spectrum of databases covering the management/entrepreneurship related journals and conference proceedings without limiting the period of publication. The initial two steps resulted in 781 articles.

As a third step, I developed a set of screening criteria for deciding which articles should be included in this review. The identified articles were excluded if an article met at least one of the following characteristics: (1) an article focuses solely on the differences of individuals to examine the impact of the cost of failure rather than the differences of institutional factors (e.g., the role of human capital in learning from failure); (2) the search keywords are not discussed in sufficient detail (the keywords were mentioned only in passing); (3) the focus is on the causes of business failure and does not consider the effect of the cost of failure (e.g., projecting the likelihood of business failure); (4) the failure is about project failure in existing organization, rather than business failure; (5) the article is not written in English or only the abstract is available. After implementing the above screening step, 719 articles were excluded.

In all, this extensive review selects 62 articles for the final sample of this comprehensive review. The 62 studies had to fulfill the following criteria to be included in our review: offer some

insight into the effect of institutions that are related to the business failure in entrepreneurial contexts (including entrepreneurial decisions and behaviors).

3. APPROACH TO REVIEW

This literature review develops an analytical framework to comprehensively and systematically understand the impact of institutions that are related to the cost of business failure in entrepreneurship. The analytical framework examines the role of institutions in the entrepreneurial process, while grouping entrepreneurial decisions and behaviors into three stages: entrepreneurial entry, development and growth, and exit. This review constructs the entrepreneurial entry stage as an outcome of the Shane and Venkataraman's (2000) model of entrepreneurship consisting of opportunity discovery, evaluation, and exploitation. To completely cover the full entrepreneurship cycle, this review adds the development & growth and exit stages of entrepreneurship. While it can be argued that both growth and exit are part of opportunity exploitation, issues pertinent to these stages are distinct from those that are typical of early opportunity exploitation, such as initial resource acquisition. The 62 articles identified through the systematic review were inductively categorized into the analytical framework. By categorizing the previous studies, I am able to comprehensively and systematically assess the status of research. The analytical framework of this review paper is shown in figure II-1.

INSERT FIGURE II-1 ABOUT HERE

The 62 articles that have been identified were coded on a number of critical issues. Particularly, I coded each paper for the domain that an article covers (i.e., entrepreneurial entry,

development & growth, and exit), the type of cost of business failure discussed (i.e., the financial, emotional, and social cost of failure), the institution related to the business failure (i.e., bankruptcy laws, the stigma of failure, and other institutions), the type of study conducted (conceptual, or empirical study with the sub-group of qualitative and quantitative study), the theory or literature an article uses, and the empirical setting (i.e., research method, research setting, sample size).

While most articles focus exclusively on a single entrepreneurial stage, some cover more than one stage and thus contribute to the literature of various stages. For example, if a study examines the impact of bankruptcy law on entrepreneurial entry decisions for would-be entrepreneur and reentry decisions for failed entrepreneurs, then the study is classified in both the entrepreneurial entry and the exit stage. Among the final sample of 62 articles in this review, 30 papers (46.8%) are classified in the entrepreneurial entry stage, 4 papers (6.3%) in the development and growth stage, and 28 studies (43.8%) in the entrepreneurial exit stage. When examining the type of the cost of failure present in the articles, 37 articles (59.6%) were concerned with the financial cost of failure, 18 studies (29%) were concerned with the social cost of failure, and only one paper (7.8%) was concerned with the emotional cost of failure. Also, this review identified 6 articles which concern general costs of business failure. It is interesting to note the relative paucity of studies looking at the impact of institutions on the entrepreneurial development and growth stage, and on the emotional and social costs of failure. Thus, this initial analysis points out that certain aspects regarding the institutional forces in entrepreneurship are less popular and potentially understudied.

INSERT TABLE II-1, II-2, & II-3 ABOUT HERE

Table II-1 shows the complete list of the articles that are mainly concerned with the impact of institutional factors on the decisions and behaviors within the entrepreneurial entry domain. Also, Table II-2 and Table II-3 show the articles related to entrepreneurial development & growth, and entrepreneurial exit respectively.

4. ASSESSING THE STATE OF CURRENT RESEARCH

In this section, this review begins with a brief introduction of the institutions that were identified as factors that influence the cost of business failure in entrepreneurship. This review then summarizes and separates the identified articles that explore the relationship between the institutions and entrepreneurial decisions and behaviors into three stages: entrepreneurial entry, development & growth, and exit.

4.1 Institutions that influence the cost of business failure

This review finds that bankruptcy law is widely known as a formal institution that influences the magnitude of the financial cost of failure (Armour & Cumming, 2008; Lee, Peng, & Barney, 2007). Bankruptcy laws that are more entrepreneur-friendly reduce the financial cost of failure by reducing or eliminating personal liability and lead to a fresh start more quickly (Van Auken, Kaufmann, & Herrmann, 2009). In particular, when entrepreneurs file bankruptcy, the entrepreneurs can protect their assets at a fixed exemption level, which is determined by the bankruptcy law and varies from country to country. Also, homestead exemption, as a part of bankruptcy laws, has been a subject of previous studies (Garrett & Wall, 2006; Rohlin & Ross, 2016). Homestead exemption protects the value of the homes of entrepreneurs from creditors when

entrepreneurs encounter business failure (Rohlin & Ross, 2016). Moreover, the insolvency law as a formal institution in the United Kingdom has attracted scholars' attentions (Verduyn, Caroline Essers, Timothy McCarthy, O'Riordan, & Griffin, 2014). While bankruptcy laws are concerned with the rules for individuals, insolvency laws address the rules for individuals or companies when they are unable to pay their debt on time, and how individuals or companies can resolve their debt before they file bankruptcy (Gladstone & Lee, 1995). Lastly, a few researchers paid attention to unemployment insurance policy, because it determines the financial cost of failure when entrepreneurs fail to operate their ventures (Ejrnæs & Hochguertel, 2013).

Second, this review examines several informal institutions such as the stigma of failure, the culture of shame, and Toll Poppy Syndrome[1] in New Zealand. First, the stigma of failure has attracted researchers' attention because it determines the magnitude of the social cost of failure. Stigma refers the social devaluation of a person who deviates from a social norm (Goffman, 1963). Since some cultures consider business failure as an undesirable outcome that breaks their expected social norm, there is a stigma on business failure. Moreover, business failure sometimes leads to a negative impact on personal and professional relationships. For example, several researchers have found that failed entrepreneurs face a breakdown in their marriages and their close relationships with their friends and stakeholders - including suppliers, employees, and investors (Sutton & Callahan, 1987). The negative impact on the social relationships of failed entrepreneurs is reinforced by the stigma of failure, thus increasing the social cost of failure. Second, a few scholars have examined the role of the culture of shame as a determinant that influences the cost of business failure (Begley & Tan, 2001). For example, individuals in some cultures consider a business failure

[1] Tall poppy syndrome (TPS) is a social phenomenon in Anglosphere nations, which discriminates against people distinguished from their peers (Kirkwood, 2007).

as a shameful matter. Third, while not present in every country, some countries have a social phenomenon called Tall Poppy Syndrome where people are devaluated when they are distinguished from their peers (Kirkwood, 2007). Similarly, failed entrepreneurs are considered separate from other entrepreneurs, becoming the target of devaluation in society. This syndrome also functions like the stigma of business failure.

4.2 The Impact of Institutional Factors on Entrepreneurial Entry

In this section, this review focuses on articles that explore the role of institutional factors on entrepreneurs' decisions and behaviors at the entrepreneurial entry stage. This review identified 30 articles that fit within this domain: 21 papers (70%) are mainly concerned with the financial cost of failure that is influenced by bankruptcy laws and insolvency laws; one paper (3.3%) focuses on the emotional cost of failure that is the result of a cultural factor of shame; and four studies (13.3%) address the impact of the social cost of failure caused by the stigma of failure and Tall Poppy Syndrome. Also, this review identified four articles (13.3%) that cannot be categorized into one of the three costs of failure, because they address a general fear of failure that is caused by cultural factors. It is interesting to note that most of the previous studies have explored the impact of formal institutions (i.e., bankruptcy laws), but very few studies have examined the role of informal institutions (i.e., the stigma of failure) at the entrepreneurial entry stage.

The decision to pursue an entrepreneurial career is influenced by a number of factors (Amit, MacCrimmon, Zietsma, & Oesch, 2001; Shepherd, Williams, & Patzelt, 2015). As one of the factors that influence entrepreneurial entry decisions, bankruptcy laws have attracted researchers' attention. This is because bankruptcy laws can reduce the financial cost of failure, and when

entrepreneurs face failure it diminishes the fear of business failure (Lee et al., 2007). Moreover, bankruptcy laws provide a form of wealth insurance when failed entrepreneurs declare bankruptcy and they limit the maximum downside risk. For example, McGrath (1999) argues that prospective entrepreneurs consider how to minimize the downside risk while maintaining the attractive entrepreneurial opportunities when they make entrepreneurial entry decisions. Moreover, several researchers have explored the relationship between bankruptcy laws and general entrepreneurial entry (e.g., the rate of self-employment, and general nascent entrepreneurial activities). For example, Lee et al. (2007) argue that entrepreneur-friendly bankruptcy laws may encourage entrepreneurial activities based on the logic of real options theory. At the same time, Armour and Cumming (2008) find that bankruptcy laws have a positive effect on the rate of self-employment based on observations from 15 countries over 16 years. Also, several empirical studies find a similar positive relationship between bankruptcy laws and general entrepreneurial entry decisions (Di Martino, 2012; Fan & White, 2003; Garrett & Wall, 2006; Lee, Yamakawa, Peng, & Barney, 2011; Peng, Yamakawa, & Lee, 2010). Although there have been numerous studies exploring the impact of bankruptcy laws on entrepreneurial entry decisions, there are few studies that explore the cultural forces that are related to business failure in entrepreneurship. One of the cultural factors, the stigma of business failure, has attracted attention from entrepreneurship researchers (Damaraju, Barney, & Dess, 2010; Landier, 2005). Several researchers argue and show that the individual belief in the existence of a social stigma of business failure hinders entrepreneurial entry (Gerosa & Tirapani, 2013; Vaillant & Lafuente, 2007). In addition, a few scholars have found that the entrepreneurial entry decision is negatively associated with the cultural factor of shame from business failure and the Tall Poppy Syndrome (Begley & Tan, 2001; Kirkwood, 2007).

Although there are several studies showing the positive role of entrepreneur-friendly bankruptcy laws on the level of general entrepreneurship entry, several researchers have shown a conflicting result. For example, Lee and Yamakawa (2012) take an opposing view and claim that some bankruptcy laws actually provide a disincentive to financial institutions such as banks and venture capitalists. This is because when an entrepreneur files for bankruptcy, financial institutions cannot recover their loan at the maximum level due to the entrepreneur-friendly bankruptcy laws. Thus, owing to a higher rate of uncollectible loans, financial institutions increase their interest rate when entrepreneurs ask for a loan from them. Accordingly, the higher interest rate for financial resource acquisition that is needed for starting a venture reduces access to financial resources, thus leading to a lower level of entrepreneurial entry. Moreover, Francis, Hasan, and Wang (2009) show that the relationship between bankruptcy laws and the level of general entrepreneurial entry is not linear, but curvilinear. In other words, bankruptcy laws have a positive association with entry due to a wealth insurance effect up to a certain point of protection for failed entrepreneurs, but has a negative association due to the higher interest's effect caused by financial institutions. In contrast to the positive or negative effect of bankruptcy laws in the level of general entrepreneurial entry, Kaufmann, Herrmann, and Van Auken (2007) show that bankruptcy laws have no effect on entrepreneurial entry because most prospective entrepreneurs are not aware of bankruptcy laws when they start ventures.

Although many early studies focused on the relationship between bankruptcy laws and the general entrepreneurial entry, several researchers have explored research questions of how bankruptcy laws influence entrepreneurial entry decisions based on the different types of entrepreneurship. In particular, Di Martino (2012) shows that bankruptcy laws decrease rent-seeking entrepreneurship because it provides wealth protection on riskier entrepreneurial activities.

However, Primo and Green (2011) found that a more forgiving bankruptcy law increases innovative entrepreneurship. Accordingly, several authors argue that policymakers need to consider how bankruptcy laws can encourage high growth entrepreneurship rather than survival, or lifestyle entrepreneurship (Morris, Neumeyer, & Kuratko, 2015).

Moreover, several researchers find that the impact of bankruptcy laws differs by an individual's characteristics, such as human capital or financial capital. For example, Jia (2015) and Fossen (2014) show that entrepreneur-friendly bankruptcy laws influence the entrepreneurial entry decisions of lower ability individuals, but do not have any impact on higher ability individuals. Further, Banerji and Van Long (2007) show that bankruptcy laws have a different effect on entrepreneurial entry decisions based on the level of an individual's financial capital. They argue that individuals with the higher levels of wealth are not likely to be influenced by bankruptcy laws, because they are indifferent about the wealth insurance effect provided by bankruptcy laws due to their sufficient wealth. Furthermore, they argue that individuals with lower levels of wealth will not be influenced by bankruptcy laws due to the interest effect, which makes it more difficult for them to access financial capital. Interestingly, Fossen (2014) refutes the previous argument by claiming bankruptcy laws encourage less wealthy individuals to become entrepreneurs.

The initial analysis of the identified articles within the entrepreneurial entry domain identifies three major issues. First, previous studies have mainly been concerned with the role of bankruptcy laws and their findings are mixed; therefore, it is hard to determine the true relationship between bankruptcy laws and entrepreneurial entry decisions. Second, this review shows that there is a paucity of studies exploring the other institutional factors that influence the emotional and social costs of failure (Gerosa & Tirapani, 2013). Third, few studies have paid attention to the interaction between formal institutions (i.e., bankruptcy laws) and informal institutions (i.e.,

cultural factors) in the context of entrepreneurial entry. This is an important topic because society has both formal and informal institutions that simultaneously influence entrepreneurial entry decisions.

4.3 The Impact of Institutional Factors on Entrepreneurial Development & Growth

In this section, I focus on the articles that explore the impact of institutional factors on an entrepreneur's decision and behavior during the entrepreneurial development and growth stage. This review identified a total of four articles within this domain, and these papers are mainly concerned with the financial cost of failure influenced by bankruptcy laws. It is interesting that despite a large number of studies that focus on the entrepreneurial entry and exit stage, researchers have not paid considerable attention to the impact of institutions that determine the magnitude of the cost of failure on the entrepreneurial decisions and behaviors at the growth stage.

New venture growth differs from the growth of established firms because new ventures are subject to a liability of newness and smallness and the variance of growth rates is wider for new ventures compared to that of established firms (Gilbert, McDougall, & Audretsch, 2006). An important issue for entrepreneurs, in order to achieve new venture growth, is financial acquisitions from external stakeholders - including venture capital (Cooper, Gimeno-Gascon, & Woo, 1994). This review identified a few studies looking at the role of bankruptcy laws on entrepreneurs' financial acquisition. In particular, Hasan and Wang (2008) empirically show that the amount of venture financing received decreased when the bankruptcy exemption level is increased, because venture capital firms have a disadvantage in collecting their investment due to entrepreneur-friendly bankruptcy laws. Moreover, Vanacker, Heughebaert, and Manigart (2014) find that

entrepreneur-friendly bankruptcy laws increase the probability that entrepreneurs prefer debt financing over equity financing. However, Van Auken et al. (2009) show that the amount or the type of capital acquisition by entrepreneurs is not associated with the entrepreneur's familiarity with bankruptcy regulations.

The initial analysis of the identified articles at the entrepreneurial growth stage identifies a major issue. First, previous studies have been mainly concerned with the role of bankruptcy laws on entrepreneurs' decisions and behaviors in financial acquisitions. However, the entrepreneurial growth stage contains several important entrepreneurial decisions and behaviors such as how much to grow, how to grow (internal vs. external growth), or where to grow (domestic vs. international). In particular, McKelvie and Wiklund (2010) suggest that firm growth research needs to focus on both "how much" questions and "how to" questions (i.e., organic, acquisition, and hybrid growth). This extensive review identifies that the current literature has not paid attention to these important questions.

4.4 The Impact of Institutional Factors on Entrepreneurial Exit

In this section, this study focuses on the articles exploring the impact of institutional factors on entrepreneurs' decisions and behaviors during the entrepreneurial exit stage. This review identified a total of 28 articles that fall within this domain: 12 papers (42.9%) are mainly concerned with the financial cost of failure governed by bankruptcy laws, insolvency laws, and unemployment insurance policy; and 14 studies (50%) address the impact of the social cost of failure influenced by the stigma of failure and Tall Poppy Syndrome. Moreover, this review identified two articles (7.1%) that cannot be categorized into one of the three costs of failure. It is interesting to note that

although there is a substantial number of studies exploring the individual responses at the entrepreneurial exit stage (i.e., learning after failure, sense-making, and recovery) researchers have not paid sufficient attention to the relationship between the role of the institutions which influence the cost of failure and entrepreneurial decisions and behaviors at the entrepreneurial exit stage.

First, several researchers examined the role of institutional forces on entrepreneurs' reentry decisions into entrepreneurship after business failure. In particular, Gladstone and Lee (1995) examine the insolvency laws, a formal institution, in the UK and show that the laws protect creditors while discouraging failed entrepreneurs to reenter into entrepreneurship. Moreover, a few researchers explored the role of informal institutions, such as the stigma of failure and Tall Poppy Syndrome, on reentry decisions of failed entrepreneurs. For example, Mitsuhashi and Bird (2011) examine failed entrepreneurs in Japan and show that the stigma of failure hinders their reentry into entrepreneurship. Moreover, Mathur (2013) finds that failed entrepreneurs in the US are more likely to be denied for a loan and have a higher interest rate, thus hindering reentry decisions. Further, Simmons, Wiklund, and Levie (2014) examine the impact of the stigma of failure on the career choice of failed entrepreneurs. They show that entrepreneurs under the stigma of failure are less likely to become entrepreneurs again. Further, Kirkwood (2007) finds that a cultural factor like Tall Poppy Syndrome in New Zealand reduces the likelihood of failed entrepreneurs to become entrepreneurs again, because of the public's reaction to their previous failure. Despite the findings that entrepreneur-friendly bankruptcy laws have a positive impact on entrepreneurial reentry decisions, Baird and Morrison (2005) show that bankruptcy laws actually induce a lock-in effect to failed entrepreneurs (entrepreneurs stay with a failing business for a longer period rather than starting a subsequent business). A few studies have looked at how institutions influence entrepreneurial decisions and behaviors differently based on the type of entrepreneurship. For

example, Shepherd and Patzelt (2015) show that there is a different level of punishment based on the attributes of the observers. For example, entrepreneurs who are homosexual or use less-environmentally friendly technology are punished more harshly, thus facing more difficulty when attempting to reenter in entrepreneurship. In addition, Gnanakumar (2015) claims that building trust with society (e.g., corporate social responsibility) can reduce the social stigma of business failure.

Second, several studies have looked at the likelihood of entrepreneurs to file for bankruptcy. For example, M. S. Cardon, Stevens, and Potter (2011) explained the regional variation of tolerance for business failure across the U.S., based on the cultural sense-making literature, and showed that a region with high levels of tolerance for business failure has a higher rate of bankruptcy. They explained that the variance comes from the attribution for venture failure made by mass media in each region. Also, Campos, Carrasco, and Requejo (2003) explored the relationship between the legal form of a venture and the probability of entrepreneurs to file bankruptcy and find that limited liability firms have a higher bankruptcy probability than unlimited liability firms. Moreover, Efrat (2008) examined bankruptcy laws' effects on immigrant entrepreneurs. He found that immigrant entrepreneurs are less likely to file for bankruptcy because they are not familiar with the bankruptcy laws of the country that they have moved to and have limited access to counsel. In addition, Ejrnæs and Hochguertel (2013) studied the role of unemployment insurance policy on entrepreneurs' behavioral responses on the effort to avoid business failure. They found that entrepreneurs with unemployment insurance are more likely to be out of business, but by a very slim margin. Further, Bernhardt and Nosal (2004) argue that mistake-prone bankruptcy courts can cause an issue where bad entrepreneurs more actively pursue bankruptcy for liquidation, while good entrepreneurs are discouraged from entering the bankruptcy

process due to the raised cost of bankruptcy. At the same time, several studies have focused on the interaction effect between formal and informal institutions at the entrepreneurial exit stage. For example, Ekanem (2014) shows that failed African entrepreneurs resist starting the bankruptcy process due to religious and cultural reasons, meaning that the formal institution cannot function properly without aid from the informal institutions.

Third, some studies examined how the cultural factors that determine the cost of failure are shaped in society. In particular, Efrat (2006) examined the source of the stigma of failure by looking at newspapers over the past 140 years. He found that the stigma of failure in the United States has been lessened due to cultural change in which business failure has been viewed as a result of external factors rather than internal factors. Also, Bouckaert, DeVreese, and Smolders (2010) examined the view of the public opinion on bankrupt entrepreneurs as a source of public sanctions on failed entrepreneurs and found that the public overestimates the proportion of fraudulent bankruptcies. They claimed that bankruptcy laws can function properly only if the negative view of bankrupt entrepreneurs is changed.

The initial analysis of the identified articles at the entrepreneurial exit stage identifies a major issue in the current literature. For example, previous studies have mainly been concerned with how institutions influence reentry decisions in entrepreneurship - who is more willing to file bankruptcy, and how the negative view of cultures on entrepreneurial failure is shaped. However, Ucbasaran et al. (2013) suggest that the entrepreneurship literature needs to explore the social and psychological process of business failures, such as learning and sensemaking, and to examine cognitive and behavioral outcomes, such as recovery. Our analysis shows that there is a paucity of research to advance our knowledge regarding the role of institutions at the entrepreneurial exit stage.

5. RESEARCH AGENDA

5.1 Research Agenda for the Entrepreneurial Entry Stage

First, future contributions are likely to come from research exploring the positive role of the institutions, such as bankruptcy laws and the stigma of failure, on entrepreneurial entry decisions. Because bankruptcy laws determine the financial cost of failure in a case of insolvency, higher financial costs may cause potential entrepreneurs to have a greater amount of fear of failure. For example, Cacciotti and Hayton (2015) argue that the fear of failure is an unexplored avenue for understanding entrepreneurial motivation and is worthy of examination. It is a worthy topic, because the fear of failure can influence the quality of the engagement, the goals that are chosen, and how they are pursued (Cacciotti, Hayton, Mitchell, & Giazitzoglu, 2016; Martin & Marsh, 2003). Although many studies show that less forgiving bankruptcy laws may decrease the rate of general entrepreneurial activities (Armour & Cumming, 2008; Lee et al., 2011), researchers have paid less attention on how the cost of failure influences the type of entrepreneurial activities. For example, Primo and Green (2011) argue that a higher financial cost of failure increases the selection effect and innovative opportunities are more likely to be pursued by entrepreneurs. At the same time, Damaraju et al. (2010) argue that the stigma of failure may reduce risk-taking entrepreneurial activities and induce more prepared individuals to become entrepreneurs. For instance, if there is a higher stigma for being a criminal, then there are typically fewer criminals in a society (Rasmusen, 1996). Accordingly, a higher cost of failure, due to less entrepreneur-friendly bankruptcy laws and the stigma of failure, may discourage less-prepared individuals and encourage relatively highly skilled and knowledgeable individuals to become entrepreneurs. Thus, it is important for future research to explore the different types of entrepreneuership and ask whether the cost of failure has a positive role of in entrepreneurial entry decisions. Despite of a negative

connotation about the cost of failure in entrepreneurial entry decisions, a more nuanced view of the role of the cost of failure would advance our understanding.

Second, when there is a high risk of failure a risk diversification strategy is commonly used in the business world (Patel, Criaco, & Naldi, 2016; Solnik, 1995). Accordingly, it is important to know how the institutional factors related to the cost of failure influence market choice decisions (e.g., domestic vs. international market) or career choice decisions (e.g., full-time entrepreneurship vs. hybrid entrepreneurship, solo entrepreneurship vs. team entrepreneurship, or single business entrepreneurship vs. portfolio entrepreneurship). For example, in a society with a high cost of failure, potential entrepreneurs may choose an entrepreneurial entry with an international orientation because it can provide an additional source of sales and be a form of risk management for entrepreneurs (Lu & Beamish, 2001; Oviatt & McDougall, 1994). Moreover, in a condition with the high cost of potential failure, prospective entrepreneurs are more likely to enter into hybrid entrepreneurship rather than full-time entrepreneurship. This is because hybrid entrepreneurship allows individuals to test their entrepreneurial opportunities in the market while maintaining their income from the formal job market (Folta, Delmar, & Wennberg, 2010).

Third, future contributions are likely to come from research exploring the influence that stigma of failure has on the social cost of failure and on entrepreneurial entry decisions. This review shows that there are relatively few studies that look at the social cost of failure. Although Vaillant and Lafuente (2007) indicate that the individual perception of the stigma of failure is negatively associated with the entrepreneurial entry rate, the study is based on a single country. Thus, a cross-country analysis may advance our understanding of the impact that the stigma of failure has on entrepreneurial entry decisions in different countries. Moreover, the stigma of failure does not apply equally to all types of business failure because there is a different level of

punishment based on the type of entrepreneurial activities that were pursued. In particular, entrepreneurial activities utilizing environmentally friendly technology or corporate social responsibility are punished less by the stigma of failure (Gnanakumar, 2015; Shepherd & Patzelt, 2015). Therefore, future contributions are likely to come from exploring how the stigma of failure encourages or discourages what type of entrepreneurial activities are pursued.

Lastly, future contributions are likely to come from studies examine the interactions between institutional factors. For example, Lee et al. (2007) argue that the stigma of failure has a moderating role on the relationship between bankruptcy law and entrepreneurial activities. However, there is a lack of empirical studies that examine the moderating role of the stigma of failure on the relationship between bankruptcy laws and entrepreneurial entry decisions. For example, Mitsuhashi and Bird (2011) point out that Japan has world-leading entrepreneur-friendly bankruptcy laws and a higher level of the stigma of failure. Considering coexistence of formal and informal institutions in a soceity, it is important to discuss how both bankruptcy laws and the stigma of failure influence entrepreneurial entry decisions. Furthermore, personal bankruptcy laws may reduce the financial burden of business failure by allowing failed entrepreneurs to recover assets from their insolvent firms, but it may lead to an increase in the interest rate for financial resources because lenders cannot collect their credit as much as the failed entrepreneur as a direct result of the bankruptcy laws (Yamakawa, 2012). For example, Fossen (2014) examined both the wealth insurance effect and high-interest effect caused by bankruptcy laws and found that the interest effect has a greater effect than the wealth insurance effect. However, Jia (2015) shows an opposite finding and suggests that personal bankruptcy law influence entrepreneurs' decisions through the insurance effect rather than through the interest rate. These two studies provide mixed results and both studies limit their analysis to a single country. Scholars can advance our

understanding of the seemingly paradoxical role of bankruptcy laws in entrepreneurial entry decisions through studies that utilize a larger number of countries and observations.

5.2 Research Agenda for the Entrepreneurial Development and Growth Stage

First, future contributions may come from research that explores the impact of institutions that influence the cost of failure and how it changes entrepreneurial decisions and behaviors regarding resource acquisitions for a venture's development and growth. For entrepreneurs to grow their venture, it is necessary for them to acquire appropriate resources, such as human and financial capital (Cooper et al., 1994). Previous studies have shown conflicting results on the impact of bankruptcy laws on loan aquisitions. For example, Hasan and Wang (2008) found that more forgiving bankruptcy laws lead to an increased amount of financing, whereas Van Auken et al (2009) show that an entreprneuer's familiarity of bankruptcy laws does not change the rate of financial capital acquisition. Accordingly, it is important to know whether bankruptcy laws encourage more financial acquisition during the development and growth stage because of a wealth insurance effect or discourages financial acquisition due to a higher interest effect.

Second, numerous studies have considered the importance of a ventures' strategy for its growth (Gilbert et al., 2006). Entrepreneurs can choose either an internal, external, or hybrid growth strategy (McKelvie & Wiklund, 2010). Failure-related institutions may influence an entrepreneur's decision for which growth strategy to pursue. For example, external growth requires more resources and bears a greater variance of outcome uncertainty when compared to internal growth. As a result, more entrepreneur-friendly institutions at business failure may encourage entrepreneurs to pursue external growth strategy. Similarly, institutions that determine

the cost of failure may influence entrepreneurs' decisions about where to grow. For example, a hostile environment toward business failure may cause entrepreneurs to choose to enter an international market rather than staying in their domestic market when determining or altering their growth strategy (D'souza & McDougall, 1989; Oviatt & McDougall, 1994). This is because entrepreneurs may want to diversify their risk by entering multiple markets. Thus, there is much to be learned about how institutions that influence the cost of failure can influence an entrepreneur's decisions and behaviors.

Third, future contributions are likely to come from research that investigates how institutions influence growth intentions and the performance of ventures. Wiklund, Davidsson, and Delmar (2003) claim that venture performance is positively associated with the growth intention of entrepreneurs. The institutions that influence the cost of failure may also influence venture growth intentions. For example, if entrepreneurs are not afraid of the negative consequences of failure caused by institutions, then they are likely to have growth intentions even though it requires substantial resources. At the same time, the institutions may induce entrepreneurs with moral hazard. For instance, entrepreneurs might invest more resources with their growth intention even though they perceive that their business opportunities do not have potential to grow. This is because entrepreneurs who acquired external funding can more easily escape from the financial burden of failure with the aid of entrepreneur-friendly institutions. Thus, it is worthwhile for future research to explore the actual performance of the ventures and to identify whether the growth intention been influenced institutions lead to venture growth.

5.3 Research Agenda at Entrepreneurial Exit Stage

First, future contributions may come from research exploring the impact of institutions that influence the cost of failure, learning from business failure, and in the cognitive and psychological outcomes of business failure. The relationship between business failure and learning has attracted significant scholarly attention among entrepreneurship researchers (Cope, 2011; Shepherd, 2003). Scholars emphasize that entrepreneurs can learn from business failure by collecting information about why their business failed and reflecting on their relationship with stakeholders, managing strategies, and understanding of the market and their competitors (Shepherd, 2003; Singh et al., 2007). However, a higher level of learning from business failure does not occur immediately because it takes the time for the entrepreneur to recover from the grief of his/her business failure (Cope, 2011). Institutions such as bankruptcy laws and the stigma of failure can determine the time of recovery from business failure. For example, Baird and Morrison (2005) show that bankruptcy laws have a lock-in effect that forces failed entrepreneurs to stay longer with their failing firms. Moreover, the stigma of failure increases the time of recovery from business failure because the stigma of failure starts before the failure occurs (Singh, Corner, & Pavlovich, 2015). A faster recovery can help entrepreneurs to enhance their emotional and physical well-being and allows them to learn more from their failure (Shepherd, 2009), while an easier exit from business failure may eliminate the opportunity for entrepreneurs to learn from their failure. Thus, future research should explore the impact of the institutions that influence the magnitude of the cost of failure and in turn impact an entrepreneur's ability to learn from business failure to help scholars better understand the role of institutions.

Second, future contributions may come from research that examines the impact of failure-related institutions on behavioral outcomes including the exit intention of failed entrepreneurs (e.g., exit vs. persist). Entrepreneurial exit rather than persisting with the failing firm may become an

easier option when entrepreneurs face failure, because entrepreneur-friendly bankruptcy laws allow failed entrepreneurs reduce the burden of the financial cost of failure. In contrast, cultural factors, such as the stigma of failure and the culture of shame, may decrease an entrepreneur's intention to exit (Simmons et al., 2014). Accordingly, an easier exit option, due to bankruptcy laws, may induce a moral hazard because entrepreneurs can easily give up putting effort into their ventures' survival. Moreover, Wennberg et al. (2010) claim that entrepreneurial exit is a divergent and complex choice rather than a simple choice between termination or persistence. At the same time, some entrepreneurs delay their entrepreneurial exit as a way to buy time for emotional recovery even though it increases the financial cost of failure (Shepherd, Wiklund, & Haynie, 2009). Considering the state of the current literature, it is important for future research to examine the role of institutions on entrepreneurial exit decisions - including what type of exit entrepreneurs pursue when they face failure and the timing of their decision to exit from failing ventures.

Third, future contributions are likely to come from research that investigates the role of individual characteristics, such as human, social, and financial capital, on the relationship between failure-related institutions and behavioral/psychological/cognitive outcomes. While this review suggests that the role of the institutions that influence the cost of failure need to be explored, it is important to also examine how institutions influence on the outcomes of business failure changes based on an individual's characteristics. For example, individuals with higher levels of human capital in an environment with entrepreneur-friendly bankruptcy laws are more likely to exit from entrepreneurship than individuals with lower levels of human capital, because of the difference in their career opportunities after business failure. Similarly, individuals with higher levels of social capital are more likely to use a sense making strategy and attribute their failure to external factors in order to avoid the stigma of failure. Moreover, individual characteristics may influence the depth

of learning from business failure. At the same time, the relationship between the institutions and failure outcomes can be influenced by the type of entrepreneurship (commercial vs. social entrepreneurship, general vs. growth entrepreneurship). This review hopes future research explores these important relationships.

6. DISCUSSION

This review shows that most studies are mainly conceptual or exploratory papers that lack theoretical arguments. Accordingly, it has been difficult to build a comprehensive understanding of how institutional factors govern an individual's decision to become an entrepreneur. In order for this important topic to move forward, it is important to examine the relationships using established theoretical lenses from different disciplines. Particularly, real options theory may advance our knowledge on the institutional factors related to business failure and entrepreneurial entry decisions. Real options theory has been a popular theoretical ground to examine investment decisions in the management fields for several decades, but it has not been widely applied in the entrepreneurship context. Particularly, O'Brien, Folta, and Johnson (2003) highlight the significance of real options theory in entrepreneurship contexts by stating that, "it is hard to imagine a context where uncertainty, investment irreversibility, and investor discretion are rifer than entrepreneurship" (O'Brien et al., 2003: 515). A real options logic may help explain entrepreneurial decisions and behaviors during the entry, development and growth, and exit stages. For example, real options theory predicts that when outcome uncertainty is greater, individuals will not exercise the option in order to learn more about the future outcome. Because future outcomes are influenced by the cost of failure, which is also determined by institutional factors,

real options theory can be an appropriate theoretical lens to examine the impact of institutions on entrepreneurial entry.

This review identifies that the previous literature focuses primarily on formal institutional factors, such as bankruptcy laws, and there is a lack of attention on informal institutional factors that influence the cost of failure. While bankruptcy laws decrease the financial burden for failed entrepreneurs (Lee et al., 2007; Lee et al., 2011), informal institutions, such as the stigma of failure, are directly related to the social cost of failure and indirectly influence subsequent financial and emotional costs of failure. At the same time, the interrelations among the institutional factors related to business failure have not been studied sufficiently. Many policymakers have attempted to establish entrepreneurship-friendly bankruptcy laws, but they are not sufficient because we lack an understanding of the impact of other institutional factors and their interrelationship with bankruptcy laws.

It is known that the cost of failure is negatively associated with entrepreneurial activities because the higher cost of failure induces the greater level of fear of failure. For this reason, this review suggests that future contributions can be made by examining the positive role of the cost of failure. Policymakers believe that minimizing the cost of failure is the best solution to encourage and stimulate entrepreneurial activities; however, encouraging productive entrepreneurial activities is more important in society rather than the quantity of entrepreneurship (Baumol, 1996). However, extreme punishment to business failure can discourage all the different types of entrepreneurial activities (including productive and unproductive type). Thus, it is important for future researchers to examine how institutional factors related to business failure may encourage productive entrepreneurial activities while discouraging unproductive or destructive entrepreneurial activities.

This review finds that there is a lack of studies that examine the cost of failure and its impact within the context of social entrepreneurship. Social entrepreneurship literature ignores the rational assumption of human by emphasizing the compassion as a driver of entrepreneurial entry motivation (Grimes, McMullen, Vogus, & Miller, 2013; Miller, Grimes, McMullen, & Vogus, 2012). However, it is still possible for individuals to consider the cost of failure even if they would like to engage in social entrepreneurship. An entrepreneurial opportunity can be pursued through either commercial entrepreneurship or social entrepreneurship (Austin, Stevenson, & Wei-Skillern, 2006). Thus, the rational assumption can be a part of explaining social entrepreneurship entry decisions; in particular, this can be done by examining the relationship between the impact of the cost of failure and social entrepreneurship entry decisions.

Lastly, future contributions are likely to come from studies that utilize a multi-level analysis. Most of the empirical papers study relationship between the institutional factors and entrepreneurial decisions and behaviors have examined the variance at the regional or country level without considering the individual characteristics. Davidsson and Wiklund (2001) suggest that a researcher's choice over the level of analysis is necessary to establish and retain academic credibility. Since institutional factors may influence individuals differently, based on their human capital, financial capital, and social capital, scholars should use multi-level analysis when researching this important topic. This approach can advance our understanding of the impact of institutional factors on entrepreneurial decisions and behaviors based on the different characteristics of individuals. In sum, the multi-level analysis may offer an extension to prior research by extending our understanding of how individual characteristics and institutional factors related to business failure can influence entrepreneurial decisions and behaviors.

7. CONCLUSION

The cost of business failure plays an important role in entrepreneurship (Cacciotti & Hayton, 2015). The cost of failure is determined by institutional factors related to business failure, such as bankruptcy laws, the stigma of failure and other country-level factors. This study contributes to the entrepreneurship literature in multiple ways. First, to the best of my knowledge, this is the first systematical review that looks at how institutional factors related to the cost of failure influence decisions and behaviors in the context of entrepreneurship. Thus, researchers, practitioners and policy makers can find out our current understanding of the role of the instructional factors related to the business failure. Second, by identifying research gaps in the existing literature, this review suggests potential research questions to advance our knowledge of this important topic. Lastly, the review provides practical implications for policy makers by highlighting the importance of the institutional factors that are associated with business failure. I hope that this review serves as a source of inspiration for researchers to identify the nature of the institutional factors related to business failure and pursue further studies exploring this important topic.

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FIGURES AND TABLES FOR CHAPTER II

Figure II-1: Conceptual Framework for Review

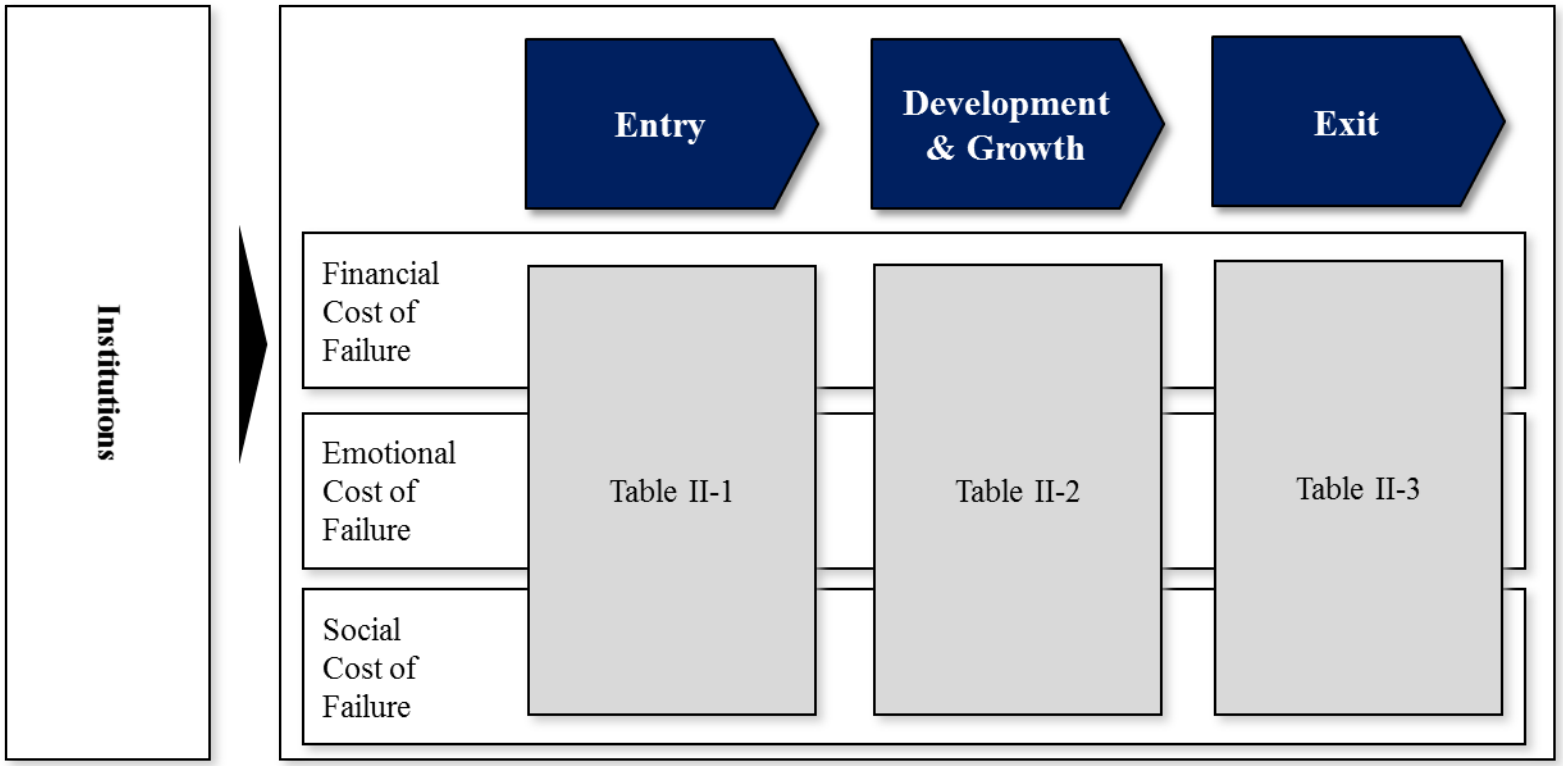

Table II-1: Institutions that influence the cost of failure at Entrepreneurial Entry Stage

Author(s) & Year	Institution	Type of Cost	Theory / Literature	Method	Key findings
Armour and Cumming (2008)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, self-employment for 15 countries over 16 years (1990-2005)	Entrepreneur-friendly bankruptcy laws have a positive effect on self-employment
Banerji and Van Long (2007)	Bankruptcy laws	The financial cost	Moral Hazard & Bankruptcy laws	Quantitative, mathematical model	Highlights that bankruptcy laws have the selection effect on entrepreneurial entry, where it does not influence the rich and the poor, but only those with intermediate wealth.
Begley and Tan (2001)	Culture of shame	The emotional cost	Theory of face	Qualitative, 6 Asian countries & 4 Anglo-Saxon heritage countries	Cultural factor of shame about business failure decreases individual interest in entrepreneurship.
Bosma and Schutjens (2011)	Culture of fear of failure	The financial/ emotional/ social cost	Institutional Theory	Quantitative, GEM data for 127 regions in 17 European countries.	Fear of failure as an institutional factor attributes to variations in regional entrepreneurial attitude and activity.
Dehghanpour Farashah (2015)	Culture of fear of failure	The financial/ emotional/ social cost	Social Cognitive Career Theory	Quantitative, GEM Data with 183,049 individuals of 54 countries.	Fear of failure is significant source for entrepreneurship self-efficacy, leading the positively association with entrepreneurial intention.
Di Martino (2005)	Bankruptcy laws	The financial/ social cost	Bankruptcy laws	Quantitative, Historical data in Italy and England	Less strict bankruptcy laws and tolerance on business failure promote general entrepreneurship and reduce rent-seeking type of entrepreneurship.
Fan and White (2003)	Bankruptcy laws	The financial cost	Risk aversion and Bankruptcy laws	Quantitative, 98,000 sample size between 1993 and 1998 in US	Higher bankruptcy exemption levels benefit potential entrepreneurs who are risk averse by providing partial wealth insurance and increase the probability of owning a business increases.
Fossen (2014)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, Quasi-Experiment in Germany, 1999 with representative household data	The insurance effect of a more forgiving personal bankruptcy law exceeds the interest effect; it encourages less wealthy individuals to enter into entrepreneurship.

Francis et al. (2009)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, Panel of all 50 states from 1990 to 1999 in the USA.	The relationship between the rate of new business formation increases and exemptions level of bankruptcy laws is curvilinear. This result shows that bankruptcy exemptions tend to affect both demand for and supply of external financing to potential entrepreneurs.
Fuerlinger (2015)	Stigma of failure	The social cost	N/A	Qualitative, Meta-analysis and Interview	Highlights the need of policies that affect social values and attitudes towards entrepreneurship in order to reduce the stigma of failure for encouraging entrepreneurship.
Garnett and Wall (2006)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, State-level panel data in USA	Homestead exemption as a part of bankruptcy laws is positively associated with the rate of entrepreneurship.
Gerosa and Tirapani (2013)	Stigma of failure	The social cost	Cultural Theory	Conceptual	The stigma of failure is an important element to determine entrepreneurial activities among the younger generation in Europe.
Hahn (2006)	Bankruptcy laws	The financial cost	Bankruptcy laws	Conceptual	Considering the growth in the use of limited liability and bankruptcy laws, the creditors ask entrepreneurs to provide a personal guarantee. This hinders entrepreneurial activities.
Jia (2015)	Bankruptcy laws	The financial cost	Bankruptcy law	Quantitative, US, Canada, UK, Germany, and France	The tough bankruptcy punishments deter lower ability households from entering entrepreneurship, but it has negligible effect to higher ability in terms of occupational choice decisions. Bankruptcy laws have the insurance effect rather than the interest effect to lower ability households.
Kaufmann et al. (2007)	Bankruptcy laws	The financial cost	Bankruptcy law	Quantitative, Survey with 90 small business owners	Bankruptcy laws have no effect on entrepreneurial entry because entrepreneurs are unaware of the existence of bankruptcy laws when deciding whether to start a new venture.
Kirkwood (2007)	Tall poppy syndrome	The social cost	Tall poppy Literature	Qualitative, Interview with 40 entrepreneurs in New Zealand	Tall Poppy Syndrome discourages individuals from starting a business. Moreover, this also discourages serial entrepreneurs to establish another business.
Lee & Yamakawa (2012)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, 28 countries for 15 years	Entrepreneur-friendly bankruptcy laws provide financial institutions disincentives for collecting their investment; thus, the institutions charge a higher interest rate to entrepreneurs. Bankruptcy laws lower the rate of new firm entry.

Lee et al. (2007)	Bankruptcy laws / Stigma of failure	The financial cost /	Real options theory	Conceptual	Entrepreneur-friendly bankruptcy law can encourage more active and vibrant entrepreneurship development. The positive impact of bankruptcy laws on entrepreneurial entry would be less in a society with the higher stigma of failure.
Lee et al. (2011)	Bankruptcy laws	The financial cost	Real options theory	Quantitative, 29 countries over 19 years	This study finds that entrepreneur-friendly bankruptcy laws increase the rate of new firm entry.
Lee et al. (2013)	Bankruptcy laws	The financial cost	Real options theory	Conceptual	Entrepreneur-friendly bankruptcy legislations, which ease the exit process for bankrupt firms, may encourage entrepreneurship development by curtailing the downside risk of entrepreneurs.
Litan et al. (2006)	Bankruptcy laws	The financial cost	Bankruptcy laws	Conceptual	Entrepreneur-friendly bankruptcy laws can foster the level of entrepreneurship.
Mankart and Rodano (2015)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, Small business economy, the survey of consumer finance, PSID in the US	A lenient bankruptcy law worsens credit conditions for poor entrepreneurs. In other words, if secured credit is not available, poor individuals are discouraged from becoming entrepreneurs.
Morris et al. (2015)	Bankruptcy laws	The financial cost	Bankruptcy laws	Conceptual	The authors argue that policies that related the bankruptcy laws need to consider the nature of entrepreneurial activities such as survival, lifestyle, managed growth, and high growth type entrepreneurship. Bankruptcy laws need to focus on fostering high-growth entrepreneurship.
Noguera et al. (2013)	Culture of fear of failure	The financial/ emotional/ social cost	Institutional economics	Quantitative, GEM data for 4,000 individuals in the Catalonia for the year 2009 and 2010.	This study highlights that 'fear of failure,' a socio-cultural factor, hinders the probability of women becoming entrepreneurs.
Paik (2013)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, US small firms between 2002 and 2008	Bankruptcy reform act of 2005 induces the chance for individuals to choose limited liability type corporation.
Peng et al. (2010)	Bankruptcy laws	The financial cost	Institutional theory	Quantitative, 25 countries	This study explores the bankruptcy laws across countries with six dimensions finds that entrepreneur-friendly bankruptcy laws have a positive effect on general entrepreneurship entry.

Primo and Green (2011)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, entrepreneurship data from 1980 to 1996 in the U.S.	Entrepreneur-friendly bankruptcy law increase levels of self-employment, but is more associated with lower levels of innovative entrepreneurship.
Rohlin and Ross (2016)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, Panel data at the local level within 10 miles from the state border in the US	Increasing the homestead exemption attracts new business. Moreover, it also has a positive impact on existing business, suggesting that asset protection through homestead exemption encourages operating entrepreneurs to incur more risks.
Urbano and Alvarez (2014)	Culture of fear of failure	The financial/ emotional / social cost	Institutional Theory	Quantitative, GEM data 36,525 individuals in 30 countries.	The cultural-cognitive dimension, fear of business failure, is positively associated with the probability of being an entrepreneur.
Vaillant and Lafuente (2007)	Stigma of failure	The social cost	Institutional theory	Quantitative, 4,877 individuals in Spain from GEM data 2003	The belief in the existence of a social stigma to entrepreneurial failure is a significant constraint for entrepreneurial activity in Spain, although this effect does not manifest any significantly differentiated impact in rural areas.

Table II-2: Institutions that influence the cost of failure at Entrepreneurial Growth Stage

Author(s) & Year	Institution	Type of Cost	Theory / Literature	Method	Key findings
Hasan and Wang (2008)	Bankruptcy laws	The financial cost	Agency theory	Quantitative, 2,753 venture-backed companies in the US.	This study explores the impact of bankruptcy law on the supply side of venture capital investment. The amount of venture financing received is reduced when bankruptcy exemption level increases. Also, the number of rounds of funding and the number of VC funds involved are negatively associated with bankruptcy exemptions.
Rohlin and Ross (2016)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, Panel data at the local level within 10 miles from the state border in the US	The homestead exemption has a positive impact on existing business, suggesting that asset protection through the homestead exemption encourages operating entrepreneurs to take more risk.
Van Auken et al. (2009)	Bankruptcy laws	The financial cost	Financial theory	Qualitative, Survey with 90 small firms in Iowa, US.	Entrepreneurial behaviors (i.e., capital acquisition) is not associated with the owner's familiarity with bankruptcy regulations.
Vanacker et al. (2014)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, 6,813 new technology-based firms from six European countries.	Entrepreneur-friendly bankruptcy laws increase the probability of raising debt financing and limit the amount of debt financing. However, better shareholder protection rights increase the probability of raising external equity financing and allow firms to raise larger amounts of equity financing.

Table II-3: Institutions that influence the cost of failure at Entrepreneurial Exit Stage

Author(s) & Year	Institution	Type of Cost	Theory / Literature	Method	Key findings
Balrd and Morrison (2005)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, the docket of one bankruptcy court in Illinois in 1998.	Bankruptcy laws induce the lock-in effect to failed entrepreneurs, staying the failing business for a longer period rather than finding new business.
Bernhardt and Nosal (2004)	Bankruptcy laws	The financial cost	Bankruptcy laws	Conceptual	Mistake-prone bankruptcy courts may discourage good entrepreneurs from taking actions that lower total firm value by raising the cost of entering bankruptcy. Also, it may encourage bad entrepreneurs to file bankruptcy.
Bouckaert	Bankruptcy laws / Stigma of failure	The financial/ social cost	Bankruptcy laws/ Stigma of failure	Quantitative, 2333 survey respondents in Flemish population.	This study examines the view of the public opinion on bankrupt entrepreneurs as a source of the stigma and finds that the public makes a wrong assessment of the proportion of fraudulent bankruptcies.
Campos et al. (2003)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, Panel data of 1,313 Spanish firms from 1990-1994.	This study explores the relationship between the legal form adopted by a firm and the bankruptcy probability. It shows that limited liability firms are more likely to file bankruptcy than unlimited liability firms.
Cardon et al. (2011)	Stigma of failure	The social cost	Sense-making / Attribution theory	Quantitative, 389 accounts of failure in the major US newspapers from 1999 to 2001	Cultural sense-making due to the attributions for venture failure is constructed by mass-media. Moreover, it influences the number of bankruptcy filing regionally.
Di Martino (2012)	Bankruptcy laws	The financial cost	Bankruptcy laws / Cultural theory	Quantitative, the period 1893–1935 using information on discharge hearings provided by the London	Despite the fact that formal features of the law had progressively become more technical in nature, social norms and cultural attitudes towards morality, class, and to a lesser extent gender still played a relevant role in judges' decisions for bankruptcy.
Efrat (2006)	Stigma of failure	The social cost	Stigma of failure	Conceptual, Newspapers in the New York Times over the past 140 years	This study examines the sources of the stigma of bankruptcy in the US. The stigma of failure has been lessened due to the cultural revolution in the States where financial failure became viewed as more the result of external factors rather

					than internal factors. At the same time, the stigma declined due to informal external sanctions became more ineffective.
Efrat (2008)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, 1,500 Survey completed by bankruptcy petitioners in California.	Immigrants are less likely to file bankruptcy because they have less access to financing, a greater reluctance to take on debt, the unfamiliarity of bankruptcy laws, and limited access to counsel. Immigrant entrepreneurs are inclined to confront financial distress themselves.
Ejrnæs and Hochguertel (2013)	Bankruptcy laws	The financial cost	Unemployment Insurance	Quantitative, More than half million individuals of Danish population	Unemployment insurance has more impact on failed entrepreneurs rather than bankruptcy laws. This study shows that those who are insured are more likely to become unemployed, but the moral hazard effect is very marginal.
Ekanem (2013)	Bankruptcy laws/ Religion/ Culture of Shame	The financial/ emotional/ social cost	Financial Literacy	Qualitative, Interview African entrepreneurs and individuals in the UK, who were engaged in bankruptcy proceedings.	The author finds that African entrepreneurs resist the bankruptcy process due to the religious and cultural reasons in contrast to entrepreneurs in the UK.
Fan and White (2003)	Bankruptcy laws	Bankruptcy laws	Risk aversion and Bankruptcy laws	Quantitative, 98,000 sample size between 1993 and 1998 in the US	A Higher level of bankruptcy exemption is positively associated with higher rates of business closure.
Gladstone and Lee (1995)	Insolvency law	The financial cost	Economic theory	Conceptual	The insolvency system in the UK moves forward the protection of creditors, not for small entrepreneurial firms. Thus, the insolvency system in the UK discourages failed entrepreneurs to reenter in entrepreneurship.
Gnanakumar (2012)	Stigma of failure	The social cost	Stigma of failure	Quantitative, 312 entrepreneurs with social responsibility programs	High escape velocity leads to the reduced stigma of failure. The success of social fluidity mapping depends upon the leveraging the social network that creates entrepreneurial structural relationship among the stakeholders. Trust among the society can reduce the social stigma related to business failures.

Keasey et al. (2015)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, SME manufacturing firms in Germany, France, Italy, Sweden, the UK for the period 1999-2006	This study finds that more creditor-oriented insolvency law decreases the period of bankruptcy procedure. This type of law provides incentives to creditors.
Kirkwood (2007)	Tall Poppy Syndrome	The social cost	Tall poppy Literature	Qualitative, Interview with 40 entrepreneurs in New Zealand	Tall Poppy Syndrome discourages failed entrepreneur to establish subsequent business because of the public's negative reaction to their previous failure.
Mann (2003)	Stigma of failure	The social cost	N/A	Conceptual	This study explores the perception of business failure in the US history. It shows that the eighteenth-century redefinition of insolvency from sin to risk changed its perception from moral failure to economic failure. However, it is still going concern.
Mathur (2013)	Bankruptcy laws	The financial cost	Bankruptcy laws	Quantitative, National survey of small business finance in 1993, 1998, 2003 in the US	Failed entrepreneurs in the US face a higher likelihood of rejection and higher interest rate for a loan, hindering the reentry decisions.
Verduyn et al. (2014)	Stigma of failure	The social cost	Narrative in social interaction	Qualitative, Interview with insolvency practitioners such as accountants or legal specialists in Ireland.	Insolvency practitioners often blame entrepreneurs for business failure to legitimize the practitioners' roles. This means that the perceived resistance to the second chance for failed entrepreneurs may not derive from a passive societal stigma, but might emerge from the insolvency practitioners.
Mitsuhashi and Bird (2011)	Stigma of failure	The social cost	Cultural theory	Quantitative, Ex-failed entrepreneurs in Japan	The stigma of failure prevents the second chance for ex-failed entrepreneurs based on the analysis in Japan.
Sellerberg and Leppänen (2012)	Stigma of failure	The social cost	Narrative in social interaction	Qualitative, Interview with 22 bankrupt entrepreneurs in Sweden	Bankrupt entrepreneurs are temporarily excluded from the market. Thus, some of them find a way to be an entrepreneur again, but others find other means of living that may result in drainage of knowledge and experience from markets.

Shepherd and Haynie (2011)	Stigma of failure	The emotional cost / The social cost	Self-Verification and Self-Determination Theory	Conceptual	Entrepreneurs under an environment with the stigma of failure often use the impression management by adopting a negative self-view. This behavior may have a positive effect on psychological well-being.
Shepherd and Patzelt (2015)	Stigma	The social cost	Attribution theory / Literature on prejudice	Quantitative, 6,784 Assessments by 212 observers.	Some observers evaluate stigmatized people who are homosexual more harshly for business failure, but entrepreneurs who use environment-friendly technology are punished less harshly.
Simmons, Wiklund, and Levie (2014)	Stigma of failure	The financial cost / The social cost	Stigma of failure	Empirical, GEM data for 2,707 individuals from 23 countries	Failed entrepreneurs in a society with the stigma of failure and regulatory conveyance of stigma are less likely to reenter in entrepreneurship. Moreover, failed entrepreneurs employ strategic response regarding career choice to manage stigma and lost legitimacy.
Singh, Corner, and Pavlovich (2015)	Stigma of failure	The social cost	Stigma of failure	Qualitative, 12 entrepreneurs	The stigmatization is viewed as a process over time rather than a label. The process starts before, not after, failure. The stigmatization triggers deep personal insights, generating a view of a positive life experience.
Sutton and Callahan (1987)	Stigma of failure	The social cost	Stigma Management	Qualitative, Observation and Interview	Top managers use the stigma management such as disengagement, reduction in the quality of participation, and bargaining for more favorable exchange relationship to avoid the stigma of bankruptcy.
Wakkee and Sleebos (2015)	Stigma of failure	The social cost	Stigma	Quantitative, 1,586 bankers in 50 local branches of a Dutch bank	This study explores a banker's attitude on a willingness to approve credit application from renascent entrepreneurs. This study shows that bankers with entrepreneurial attitude are more willing to give second chances to failed entrepreneurs even though they recognize the stigma of failure.

CHAPTER III :

THE EFFECT OF SOCIAL COSTS OF FAILURE ON ENTREPRENEURIAL ENTRY: AN APPLICATION OF REAL OPTIONS LOGIC

1. INTRODUCTION

The potential upside of entry has received extensive attention, while far less attention has been paid to the potential downside (see Zachary, Gianiodis, Payne, & Markman, 2015 for a recent review reaching this conclusion). This appears to be an imbalance because entry into entrepreneurship is rife with uncertainty. Potential rewards in case of success can be enormous. But potential losses in case of failure may also be large, including financial as well as social costs in the form of stigma of failure. Importantly, differences in legal frameworks and cultural values influence upside potential as well as downside risk of entrepreneurial entry, and these differences influence the behavior of individuals. For example, national differences in the severity of bankruptcy law (Armour & Cumming, 2008) or stigma of failure (Simons et al., 2014) influences the willingness of people to entry entrepreneurship.

To date, research has revealed that more forgiving legal frameworks and cultures can positively influence the propensity of people to assume the uncertainty of entrepreneurship and find the courage to enter (e.g., Armour & Cumming, 2008; Landier, 2005; Lee, Yamakawa, Peng, & Barney, 2011). With a lower cost of failure, more people are willing to try. However, I believe that this provides an overly simplistic view of the relationship between the cost of failure and entrepreneurial entry. Drawing on real options theory and focusing specifically on the social costs of failure, I hypothesize that while high social costs of failure can negatively impact the propensity of people to enter entrepreneurship, it can positively influence the quality of the selection into entrepreneurship so that those with higher potential are *more* likely to enter in contexts where the social costs of failure are higher because the value of the option to enter entrepreneurship is higher. Moreover, not all prospective entrepreneurs are affected equally by the cost of failure. Viewed as

an investment, entry into entrepreneurship is more reversible for those with greater education and they are thus less sensitive to the social costs of failure.

Drawing from several data sources this study builds a unique database including the entry decisions of over 26,000 individuals from 35 countries to test the hypotheses. By and large they were supported. While people are less likely to enter in contexts where the social costs of failure are high, as suggested by prior research, this study also finds these contexts are more likely to entice individuals to exercise the option to be entrepreneurs if they have growth or export orientation. This study also finds that highly educated entrepreneurs are less sensitive to social costs of failure.

In carrying out this research, this study makes several contributions to the literature. First, although prior studies have contributed to our understanding of the impact of the social costs of failure on the number of new firm startups (Damaraju, Barney, & Dess, 2010; Lee et al., 2007; Lee et al., 2011), this study demonstrates that there is more to learn about how these social costs influence the composition of entrepreneurial activity in societies (Baumol, 1996). The results demonstrate selection effects that increase the prevalence of new firms started by entrepreneurs with growth ambitions and that have export orientations. These firms are important sources for economic and job growth (Autio, 2011; Estrin, Korosteleva, & Mickiewicz, 2013; Jones, Coviello, & Tang, 2011; Oviatt & McDougall, 1994). As such, the potential negative impact that policies to reduce the social costs of business failure can have on these high value entrepreneurial entry decisions should be acknowledged and deserves further scrutiny.

Second, this study contributes to the application of real options theory in entrepreneurship research. Specifically, rather than focusing on a single option for entrepreneurship activity, this study uses a comprehensive approach to examining how institutions influence different

entrepreneurship activities simultaneously. This allows us to examine the sometimes complimentary and at other times contradictory impact on entrepreneurial options. Thus, it provides novel insight into entrepreneurial decisions over and above previous research using this approach in entrepreneurship (cf. e.g., McGrath, 1996; O'Brien, Folta, & Johnson, 2003; Venkataraman & Sarasvathy, 2001)

2. THEORETICAL DEVELOPMENT

Market entry decisions including the timing of entry remain important to management research, in particular understanding the mechanisms underlying these decisions (Zachary et al., 2015). Entrepreneurship entry decisions involve outcome uncertainty (Knight, 1921) and the investments into starting a venture are largely irreversible (Campbell, 1992). Thus, in order to shed light on the dynamics of the entrepreneurial entry decisions and entry timing, this study relies on real options theory. The central tenet of real options theory is that investment decisions can be treated as the exercising of options with the cost of the investment being the strike price of the option (Dixit, 1989, p. 621) and the option price is determined by uncertainty (Dixit, & Pindyck. 1994). Real options theory has been a popular lens to examine investment decisions in the management discipline including international subsidiary decision (Reuer & Leiblien, 2000), joint venture decision (Kogut, 1991; Reuer & Leiblien, 2000), and governance structure decision (Folta, 1998). However, it has not been widely applied in the entrepreneurship context. O'Brien and his colleagues (2003) emphasize the significance of real options theory in entrepreneurship contexts by stating that "it is hard to imagine a context where uncertainty, investment irreversibility, and investor discretion are rifer than entrepreneurship" (p. 515).

An individual standing at the threshold of founding a new firm may simultaneously hold several different real options, such as the option to defer, the option to abandon, or the option to stage the investment (Kester, 1984). Among these options, the option to defer is widely used in exploring entrepreneurship entry decisions (O'Brien et al., 2003). For example, real options theory predicts that when there is considerable uncertainty, the value of the option to defer increases because an investment decision maker can spend time on gathering more information, thus reducing uncertainty. In this way, prospective entrepreneurs can limit the exposure to downside risk while preserving access to potential gains by choosing the option to defer their entry (McGrath, 1999). The conceptual model is shown in Figure III-1 below.

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2.1 Entrepreneurial Entry

The downside risk of the entrepreneurial entry decision is influenced by the costs of business failure. These costs consist of financial costs as well as social costs. Both these costs vary across countries depending on formal and informal institutional frameworks. For example, the formal bankruptcy laws in a country determine the maximum downside financial costs of risky firm investments and have a significant influence on reentry from business failures (Lee et al. 2007). Along these lines, empirical evidence support that entrepreneurship-friendly bankruptcy law has a positive impact on the rate of new firm entry, because of reduced downside risk (Armour & Cumming, 2008; Lee et al., 2011). In real options terms, the bankruptcy laws of a country influence the option price of entrepreneurial entry.

This study focuses on the social costs of failure. In terms of the social costs of entry, stigma of failure can be a salient factor influencing entrepreneurial entry decisions. The informal social costs of business failure are associated with stigma sanctions that are normative but not as well defined as in formal bankruptcy laws. Goffman (1963) suggests that individuals in a society compare each other against the expectation of what persons should be like in particular situations (Paetzold, Dipboye, & Elsbach, 2008). In entrepreneurship contexts, there are societal expectations about entrepreneurs and the ventures they create (Lee et al., 2007). Institutional norms dictate what is seen as legitimate behavior of entrepreneurs (Aldrich & Fiol, 1994) and failure to meet these expectations is associated with stigmatization. Entrepreneurs are expected to be able to successfully managing their ventures, and a failure to do so is seen as a breach of social norms, which is stigmatized (Simmons et al., 2014). The amount of stigma associated with entrepreneurial failure depends on institutional norms and varies across countries (Simmons et al., 2014). For example, in some societies, entrepreneurial failure is so stigmatized that failed entrepreneurs can go as far as to commit suicide to avoid the social costs of failure (Tezuka, 1997). These social costs accrue for undefined periods after firm closure (Semadeni, Cannella Jr, Fraser, & Lee, 2008). They impair stakeholder relationships (Sutton & Callahan, 1987) and negatively impact the reentry decisions of experienced entrepreneurs in some contexts (Simmons et al. 2014). As direct outcomes, the social costs of the stigma of business failure pressure some entrepreneurs who fail to engage in self-imposed social exclusion (Singh, Corner, & Pavlovich, 2007). As indirect outcomes of social sanctions, it may be more difficult or costly to access capital (Lee et al, 2007) and to regain legitimacy with stakeholders (Mitsuhashi & Bird, 2011).

Because the social costs of failure influence the expected outcome[1] by increasing the downside risk and the outcome uncertainty, it may increase the value of the option to defer

entrepreneurial entry. Individuals vary in their willingness to bear risk (Busenitz & Barney, 1997; Low & MacMillan, 1988). The social costs of failure can dissuade individuals who are afraid of the unfavorable consequences. Absent social costs that arise from stigma, the cost of business failure can be predicted and calculated with some accuracy. For example, within many legal frameworks, financial losses are limited to initial investment into an incorporated business. Thus, unless individuals are certain about the expected gain to offset the expected cost of failure which is increased by the stigma of failure, they would not exercise the entry option and instead use the option to defer. In addition, the social costs of failure increase the opportunity cost to exercise the option to be entrepreneurs, because the option to be in the job market brings more certain outcome than the option to be entrepreneurs especially in an environment with the stigma of failure. In other words, individuals who are aware their job market value will require greater upside gain.

Moreover, the social costs of the stigma of business failure influences to the entrepreneurial entry decision of individuals who have failed previously in their entrepreneurial activities. In societies with large social costs of failure, it is hard for failed entrepreneurs to earn a second chance to resume a new venture (Simmons et al., 2014). Accordingly, for those individuals who already experienced entrepreneurial failure, it would be more difficult to exercise the option to invest on a risky project such as starting a venture under the stigma of failure, making the smaller pool of potential entrepreneurs. In a nutshell, the social cost of the stigma of failure increases the unfavorable outcome uncertainty, increasing the opportunity cost to exercise the option to be entrepreneurs, and providing a barrier for failed entrepreneurs to be entrepreneurs again. In contrast, prospective entrepreneurs in a nation with small social costs of failure can easily exercise the entry option to become entrepreneurs because the option to defer is less valuable. Accordingly, this study hypothesizes that:

Hypothesis 1: The social costs of business failure have a negative influence on entrepreneurial entry.

2.2 Entrepreneurial Entry with Growth Aspirations

Although the social costs of failure decrease total entrepreneurial activity, this study argues that there will be a selection effect that may have positive economic implications. Specifically, this study argues that the social costs of business failure will increase the value of the entry option for entrepreneurs with growth aspirations. First, in a country with higher stigma, individuals already acknowledge that entrepreneurship is a high risk option. However, if individuals also believe that they can achieve high growth with their ventures the option to defer entrepreneurial entry would be less valuable because the strong confidence in their success outweighs the potential downside risk. In other words, the expected gain from entrepreneurial activities can offset the social costs of failure. The upside gain from entrepreneurial activities is largely influenced by entrepreneurial beliefs and intentions for venture growth (Wiklund & Shepherd, 2003).

Firm growth results from the quality of opportunities available to firms, the abilities of its entrepreneurs, and their motivation to grow their businesses (Penrose, 1959). The growth motivation of entrepreneurs strongly influences subsequent growth (Delmar & Wiklund, 2008). Growth motivation is reflective of the belief of the potential a prospective entrepreneur holds about his or her opportunity. The greater the growth motivation, the greater the belief in upside potential. Thus, the opportunity cost of deferring entry would be higher for those with greater growth motivation. In a country where the social costs of failure are high, only those prospective entrepreneurs who believe that their opportunities have high value would be willing to take the

risk of entering. For them, the opportunity cost of deferring entry would be high. For entrepreneurs considering opportunities with lower potential, on the other hand, reducing uncertainty through the deferral of entry would be a more attractive alternative because they can gather more information so as to reduce uncertainty.

In addition, those in countries where the social cost of failure is high will require higher returns from entrepreneurship in order to consider it a viable alternative. Consequently, the higher opportunity cost due to the social cost of the stigma of failure would increase the probability that entrepreneurs demand a higher return. Thus, those entering in countries where the social costs of stigma are high would likely be more ambitious about their firm growth and invest more aggressively (Arora & Nandkumar, 2011). Even failed entrepreneurs would exercise the option to be entrepreneurs if they have high confidence about subsequent ventures' growth (Hayward, Forster, Sarasvathy, & Fredrickson, 2010). In a nutshell, in a country with a higher level of the social costs of failure due to the stigma of failure, individuals would be more likely to exercise the option to be entrepreneurs only if they believe a higher level of expected outcome as a consequence of their entrepreneurial activities. This is because the expected outcome from venture growth can countervail the negative effect from the social cost of failure.

> **Hypothesis 2:** The social costs of business failure have a positive influence on entrepreneurial entry of individuals with growth aspirations.

2.3 Entrepreneurial Entry with Export Orientation

As with growth aspirations, this study suggests that the option to enter in entrepreneurship will be more valuable for entrepreneurs with export orientation when there is a high social costs of failure.

Internationalization increases the upside potential of entrepreneurial activity because it allows the entrepreneur to address a wider market (Lu & Beamish, 2001; Zahra, Neubaum, & Huse, 1997) and it is positively associated with an opportunity with high potential value (Castaño, Méndez, & Galindo, 2015). Entrepreneurs with export orientation can use several entry modes to internationalize their firms, including exporting, licensing, acquisition, strategic alliance and foreign direct investments (Hitt, Ireland, Camp, & Sexton, 2001). Exporting, however, is the most common mode of international market entry (Kogut & Chang, 1996; Zahra et al., 1997). Exporting does not require entrepreneurs to make substantial capital investments (Root, 1998) and this form of internationalization involves less commercial and financial risk than other modes of internationalization (Jaffe & Pasternak, 1994).

In addition, the social cost of business failure should also encourage entrepreneurs to avoid competition in the domestic markets. Oviatt and McDougall (1997) state that domestic market conditions influence the exporting behaviors of ventures. Similarly, Zahra, Neubaum, and Huse (1997) and Ibeh (2003) argue that when the domestic environment is viewed as hostile, entrepreneurs search for ways to achieve higher performance by increasing exports to other countries. Moreover, Cavusgil (1980) shows that the initial international orientation of firms can be explained by management desires to overcome unfavorable conditions in the domestic market. Thus, export oriented entrepreneurial entry allows entrepreneurs to diversify the downside risk from potential business failures while at the same time increasing their potential upside. Accordingly, I predict that entrepreneurs are particularly likely to exercise the option to become entrepreneurs if they have export orientation in countries with a high social cost of failure. Accordingly, this study hypothesizes that:

Hypothesis 3: The social costs of business failure have a positive influence on entrepreneurial entry of individuals with export orientation.

2.4 The Moderating Effects of Human Capital Investments

Real options theory predicts that the reversibility of an investment influences the value of the option of delaying the investment (Dixit and Pindyck, 1994). If reversibility is high, deferring the investment has lower value. Human capital likely influences the extent to which entry into entrepreneurship is a reversible investment. People with greater general human capital will have greater outside options should their ventures fail because, by definition, general human capital is valuable across a variety of contexts (Becker, 2009). This study specifically examines general human capital in the form of formal education because this is the most common way of operationalizing human capital in the entrepreneurship context (Rauch & Frese, 2000). Investments into entrepreneurial entry are more reversible for individuals with higher education (O'Brien et al., 2003) because they have better outside options should their entrepreneurial attempts fail. As an aspect of general human capital, formal education has similar value in other occupational alternatives (Becker, 2009; Davidsson & Honig, 2003). As such, entrepreneurs can redeploy their human capital in other occupational contexts. People with less general human capital, however, will derive their human capital mainly through the experience of operating their business. This human capital is specific to entrepreneurship and likely has little value in other occupations (cf. Wiklund & Shepherd, 2008). Thus, their entrepreneurial entry would constitute a more irreversible investment.

Increased social costs of failure escalates the value of the option to delay entrepreneurial entry decisions. Thus, the reversibility of investments is higher in contexts where the social costs of failure are higher. From this follows that individuals with high levels of education will be less sensitive to the downside risk increased by the social costs of failure because of high levels of reversibility for their investments for entrepreneurial entry. Thus, the option to defer entrepreneurial entry is less valuable for individuals with high levels of education in an environment with high social costs of business failure. In other words, the entry option for entrepreneurs with growth aspiration or export orientation may be less valuable to individuals with high levels of education due to diminished sensitivity to the downside risk of social costs of failure. Accordingly, this study hypothesizes that:

> **Hypothesis 4:** Education moderates the relationship between social costs of business failure and entrepreneurial entry. The greater the education, the smaller the influence of social costs on all forms of entrepreneurial entry.

3. METHOD

3.1 Research Design and Sample

To test the hypotheses, this study uses multilevel modeling in which individuals are nested within countries. This study constructed a unique dataset that combines data from the Global Entrepreneurship Monitor (GEM); the World Bank Development Indicator (WDI); the World Bank Doing Business data (WBDB); and the European Flash Barometer (EUFB). For individual-level data, this study uses the GEM adult population survey (APS). Since 1999, the GEM project has been conducting an ongoing cross-national survey with the purpose of measuring

entrepreneurial activities across countries (Bosma, 2013). In 2012, 69 countries took part in GEM survey, and this group of countries represented 74% of the world population and 87% of the world's GDP (Xavier, Kelly, Kew, Herrington, & Vorderwülbecke, 2012). The GEM project randomly selects survey respondents from the general population of the participating countries. Although the survey method varies due to country-specific conditions[2], in each country at least 2,000 individuals are drawn from the working age population and interviewed about their entrepreneurial attitude, intentions, and activities and about information on individual characteristics such as gender, education, age and household income. To increase the stability of the measures, this study pooled the GEM data across the four-year period of 2009 – 2012 and included only the working population between the ages of 18 and 64.

Country-level variables are drawn from the European Flash Barometer (FB), World Bank Development Indicators (WDI) and World Bank Doing Business (WBDB) reports. In order to reduce potential endogeneity issue, this study lagged all country-level control variables for one year. The final dataset consists of 264,620 GEM respondents between the ages of 18 and 64 from the 35 countries[3].

3.2 Dependent Variables

To test the hypotheses, this study uses three dependent variables that reflect individual engagement in entrepreneurial activity at the early stage (*Entrepreneurial Entry*), the intentions of the entrepreneurs to increase employment over a five-year horizon (*Growth Aspiration*), and the export orientation of the entrepreneurs (*Export Orientation*). *Entrepreneurial Entry,* is constructed from the total early-stage activity (TEA) variable from GEM which measures whether an

individual engages in early-stage or new entrepreneurial activity. The TEA is a combination of nascent entrepreneurs currently involved in activities to start up a new business and owners of young businesses in operation less than 42 months old. The individuals in TEA are identified with three following screening questions: (1) whether the individual is currently involved in a start-up, (2) whether their current job involves a start-up, or (3) whether the individual is the owner/manager of a new business. The constructed variable therefore reflects whether an individual involved in activities to start up a new firm or owners of the young business which is less than 42 months old, measured as a binary variable; 1 indicates that an individual is engaged in TEA and otherwise the dependent variable is coded as 0.

The *Entry Option with Growth Aspiration* dependent variable measures individual engagement in TEA with high job growth aspiration (TEA HJG) of hiring more than 20 employees within five years. Consistent with prior studies (Autio & Acs, 2010; Estrin et al., 2013), this study considered entrepreneurs expecting to hire 20 or more employees within five years' time period to have growth aspirations (TEA HJG coded 1) and entrepreneurs not expecting to hire 20 employees to not have growth aspirations (TEA HJG coded 0).

The *Entry Option with Export Orientation* dependent variable measures whether the entrepreneurs engaged in TEA with export orientation (TEA EXP). Consistent with prior studies (Chen, Saarenketo, & Puumalainen, 2016; De Clercq, Hessels, & Van Stel, 2008), this study considered entrepreneurs with 25% or more of customers in foreign countries as export oriented (TEA EXP coded 1) and entrepreneurs with less than 25% of customers in foreign countries as not export oriented (TEA EXP coded 0).

3.3 Independent Variables

Social Costs of Business Failure. This study uses a multiple-item measure for the *Social Costs of Business Failure* that integrates perceptual stigma and regulatory conveyance of stigma. The perceptual stigma is based on survey data collected by the European Commission. The prior research uses the perceptual stigma associated bankruptcy to capture the stigma of entrepreneurial failure (Simmons, Wiklund, & Levie, 2014). This study utilized the European Flash Barometer #283 and #354 that measure attitude towards entrepreneurship in the European Union respectively in 2009 and 2012. Although its focus is on countries belong to the European Union, it also provides data from non-European countries such as South Korea, Japan, China, Brazil, India, Israel, Russia, Sweden, Norway, and the United States for comparative analysis. In particular, the European FB #283 covers 36 countries and the European FB #354 includes 40 countries. The variable measures the percentage of responses to the statement 'people who have started their own business and have failed should be given a second chance' with the following options: (1) strongly agree, (2) agree, (3) disagree, (4) strongly disagree, (5) don't know. By using (-2, 2) scale, this study weighted the responses and reversed negative value to a positive value, indicating that high value of perceptual stigma means more sanction on failed business in order to enhance easiness of interpreting results.

The regulatory conveyance of stigma is an institutional indicator from World Bank Doing Business (WBDB) database which collects data on regulations governing small and medium-sized business operating in 183 countries. The measurable explores two sets of issues – the strength of credit reporting system and the effectiveness of collateral and bankruptcy laws in facilitating lending. In the WBDB database, the total score of Getting Credit, accessibility of credit information, is reported from 0 to 100 scores, comprised of scores from sub-categories such as the

strength of legal rights, depth of credit information index, credit registry coverage and credit bureau coverage.

Education. The *Education* variable is constructed from GEM APS data with a five-stage categorical scale toward higher levels of education (4=graduate experience, 3=post-secondary degree, 2= secondary degree, 1= some secondary, and 0= none). To ease the interpretation of the moderating effect, this study created a dichotomous variable as 1 for more than the post-secondary degree, and 0 for less than the secondary degree.

3.4 Control Variables

It is important that this study includes individual and country-level control variables to examine the hypotheses. Individual differences can affect the opportunity cost of each individual, influencing entrepreneurial decisions (Shepherd et al., 2015). Particularly, this study controlled the participants' demographic characteristics such as gender, and age at the individual level. Because women tend to show lower rates of entrepreneurial entry than men, this study includes a *Gender* variable as 1 for male and 0 for female. Further, *Age* is a continuous variable between 18 and 64. *Age Squared* is also included in the model to control the curvilinear effect of age.

The prior literature also suggests that social capital and financial capital determines entrepreneurial decisions. *Social Capital* is measured by a dummy variable that assesses whether the respondents "personally know someone who had started a business in the past two years" (Minniti & Nardone, 2007). *Household Income* is constructed as a categorical variable which assesses whether a respondent belongs to the lower, middle, or higher tier of the country's

distribution of household income, a measurement approach similar to those used in prior research (Denning, 2014; Morduch, 1999).

This study also controls for the effects of country-level factors. First, the level of a country's development influences the rate of entrepreneurial entry (Acs, Desai, & Hessels, 2008). This study controls the economic development of a country by using *per capita GDP at purchasing power parity (GDP PPP)*. Second, it is also known that a country's market size can determine individuals' intention to be entrepreneurs (Stenholm, Acs, & Wuebker, 2013). Accordingly, this study includes *Population Size* because the population size of countries can generate the needed market size for entrepreneurs (Wennekers, Sander, Van Wennekers, Thurik, & Reynolds, 2005). Third, this study controls *Bankruptcy Law*, which determines the formal costs of failure. Previous studies show that bankruptcy laws of countries influence the rates of entrepreneurial entry (Armour & Cumming, 2008; Lee et al., 2011). In particular, this study uses the resolving insolvency data from the WBDB database (Lee et al., 2011). This index reflects the time, cost and outcome of insolvency proceedings as well as the strength of the legal framework for liquidation and reorganization process.

4. RESULTS

4.1 Main Tests

Table III-1 summarizes the study variables and Table III-2 presents descriptive statistics and correlations. To test the effect of the social costs of failure on entrepreneurial entry decisions, this study conducted a series of multilevel random effects regression analyses. This method is appropriate because clustered individuals within a country share common experiences that differ

from those of individuals living in other countries (Stephan, Uhlaner, & Stride, 2014). At the same time, this approach allows regression coefficients and intercepts to vary across countries, enabling more accurate tests of cross-level moderation effects (Autio & Acs, 2010).

INSERT TABLE III-1 & III-2 ABOUT HERE

Before examining the hypotheses, this study conducted the intra-class correlation (ICC) analysis to justify using multilevel regression analysis (Bliese, 2000). According to Bliese (2000), the multilevel techniques are recommended if the ICC estimates reside within the normal range (i.e., between 5% and 20%). The result shows that 5.3% of the total variance resided at the country level for general entrepreneurship entry, 13.6% for entrepreneurial entry with growth aspiration, and 17.3% for entrepreneurial entry with export orientation. These results justify the application of multilevel regression techniques for this study.

This study first tested the effect of control variables such as individual-level control variables and a country-level control variable with the dependent variables such as entrepreneurial entry, the entry with growth aspiration, and the entry with export orientation. Then, I add a country level independent variable, the social costs of failure. Lastly, I tested the interaction effect of the social costs of failure and education while I include all control variables and independent variables. In the multi-level regression models, this study also examine the Variance Inflation Factor (VIF) statistics to control the possibility of strong multicollinearity influencing the results. I find that all VIF scores are below 10, suggesting that multicollinearity is not a concern for the analysis (Hair Jr, Anderson, Tatham, & Black, 1998).

For the results, this study presents odds ratios (OR) rather than coefficients for easier interpretation. The baseline category is that an individual does not engage in start-up activity. Thus, an OR>1 means that a variable increases the likelihood of engagement in entrepreneurship. In addition to regression coefficients, this study reports pseudo-R^2 as suggested by Hox, Moerbeek, and van de Schoot (2010). The pseudo-R^2 compares the residual country-level variance of the base model with the model including independent variables.

Hypothesis 1 states that the social costs of business failure have a negative influence on entrepreneurial entry. As shown in Model 2 in Table III-3 this study finds a statistically significant negative association (Odds ratio 0.93, $p<0.1$) between the social costs of failure and the engagement in entrepreneurship. Moreover, a 1 SD increase in the social costs of failure decreases entrepreneurship by 0.7%. In addition, the predictor, the social costs of failure explain additional the country-level variation by 3.7%. The Likelihood-Ratio (LR) test also indicates significant between-group variance in slopes. This result shows that when individuals live in a society with a higher level of the social costs of failure, they are less likely to start entrepreneurship. Thus, these results support Hypothesis 1.

Hypothesis 2 states that the social costs of business failure have a positive influence on entrepreneurial entry of individuals with growth aspirations. As shown in Model 3 and 4 in Table III-3 this study finds a statistically significant association (Odds ratio 1.15, $p<0.05$) between the social costs of failure and the likelihood that entrepreneurs at the early stage have high growth aspirations. A 1 SD increase of the social costs of failure increases entrepreneurship by 0.15%. In addition, the predictor, the social costs of failure explain additional the country-level variation by 30%. This result indicates that when individuals live in a society with a higher level of the social

costs of failure, they are more likely to enter entrepreneurship with growth aspirations. Results of the hypothesis test support Hypothesis 2.

Hypothesis 3 states that the social costs of business failure have a positive influence on entrepreneurial entry of individuals with export orientation. Model 5 and 6 at Table III-3 shows the statistically significant effect of the social costs of failure on the likelihood that entrepreneurs at the early stage have the export orientation (Odds ratio 1.21, $p<0.01$). A 1 SD increase in the social costs of failure increases the probability of engagement in entrepreneurship by 0.3%. In addition, the predictor, the social costs of failure explain additional the country-level variation by 16.3%. This result indicates that when individuals live in a society with a higher level of the social costs of failure, they are more likely to enter entrepreneurship with export orientation. Results of this analysis support Hypothesis 3.

Hypothesis 4 states that education moderates the relationship between social costs of business failure and entrepreneurial entry. In other words, the greater the education, the smaller the influence of social costs on all forms of entrepreneurial entry. The results shown at Table III-4 show that Hypothesis 4 is partially supported. In particular, this study finds an interaction effect of education on the likelihood that individuals engage in the general entrepreneurial entry (Odds ratio 1.06, $p<0.001$) and entrepreneurial entry with growth aspiration (Odds ratio 0.90, $p<0.001$), as shown in Model 1 and 2 at Table III-4. This result indicates that individuals with high level of education are less sensitive to the social costs of failure for general entry and entry with growth aspirations. However, this study did not find a statistically significant effect of the social costs of failure on entrepreneurial entry with export orientation. The graphs at Figure III-2 show the marginal effects indicating the change in the predicted probability of the dependent variables as a function of the social costs of failure.

INSERT TABLE III-3, III-4 & FIGURE III-2 ABOUT HERE

4.2 Robustness Tests

This study conducted several robustness tests. First, this study changed the baseline comparison for entry with growth aspirations and export orientation from being the general population to being only those entering entrepreneurship. Thus, this study examine growth aspirations and export orientation *conditional on entry*. As expected, results were much stronger. All findings regarding the hypotheses were replicated in these analyses with one important addition. These analyses also supported the interaction effect between education and export orientation. Thus, these analyses gave full support to this study's hypotheses.

This study also conducted additional analyses excluding China because China could be an outlier in terms of entrepreneurial entry (Allen, Qian, & Qian, 2005). The results are virtually identical to the main results. In addition, previous experience of business failure may influence different decision and behavior of potential entrepreneurs (Simmons et al., 2014). Thus, in the main dataset, this study excluded individuals who had experienced business failure within a year before the survey was conducted. The results are very similar to the main analysis. Lastly, this study conducted a range of robustness tests by adding more control variables such as *GDP growth rate* and *property right of a country*. The results of these additional analyses also support the main findings.

5. DISCUSSION

There is now wide acceptance of the idea that the financial and social costs of failure influence entrepreneurial entry and several papers have empirically supported this notion (e.g., Lee et al., 2011; Simmons et al., 2014). This paper moves this line of research a step further by qualifying these statements. Based on real options theory this study develops fine-grained hypotheses regarding how the social costs of business failure differentially influence the propensity of people to entry entrepreneurship. Specifically, this study builds on insights from real options theory regarding the uncertainty of the returns to the investment, the value of the option to defer, the reversibility of the investment, and the opportunity cost of the investment to guide the hypotheses. In line with prior research, this study hypothesizes and find that greater social costs of failure are associated with the lower propensity of entrepreneurial entry. More importantly, this study hypothesizes and find that higher costs of failure positively influence entry of high potential entrepreneurship in terms of people with growth aspiration and export orientation. Thus, it would seem that higher social costs of failure have a positive influence on the composition of entrepreneurial entry. Note that these results are based on the propensity of people to enter entrepreneurship in absolute numbers as opposed to the relative share of high potential entrepreneurship conditional on entry. As a robustness test, this study also estimated the relative share of entrepreneurs entering with growth aspirations and export orientation. As expected, the results were even stronger with these weaker assumptions.

In addition, this study examined these effects moderated by individuals' general human capital in the form of level of education. As hypothesized, this study found that those with less education are particularly vulnerable to the social costs of failure. On the one hand, the social costs of failure constitute a particularly strong deterrent to entry for this group. On the other hand, the

social costs of failure have a particularly strong influence on selecting only those with the highest potential in this group.

5.1 Implications for Research

This study has several implications for future research. First, prior research has mainly focused on formal institutions (e.g., bankruptcy law) and the financial costs of failure (Lee et al., 2007; McGrath, 1999). Informal institutions which regulate the social costs of failure have received far less attention. Given the findings, it seems that this may be an important oversight. In particular, this study finds it interesting that social costs in the form of stigma may actually convey societal benefits in terms of the quality of entrepreneurial entry. The social costs of failure have been considered as a constraint to fostering entrepreneurship (Landier, 2005; Lee et al., 2007). The findings challenge that assumption, suggesting that higher levels of stigma in a country may serve a desirable selection mechanisms leading to higher quality entrepreneurship. This study believes that this finding should have implications for the mainly negative view of stigma of failure and social costs of failure currently present in the management and entrepreneurship literatures. In doing so, this research heeds the call to examine of stigma could have a positive influence on entrepreneurial risk taking (Damaraju et al., 2010). This study sets the stage for additional research on the both positive and negative effects of the social cost of business failure on entrepreneurial entry. Entrepreneurs have real options. They can enter and exit entrepreneurial careers. They can also switch to and from opportunities in other occupations. Understanding the role of informal and formal institutions in the value that entrepreneurs place on each of these options is an important avenue of inquiry for future researchers and policymakers.

Second, although prior research has applied real options theory in entrepreneurship, I believe that the fine-grained assessment of multiple facets of the theory led us to formulate hypotheses that may appear counterintuitive at first glance. For example, this study suggests that the opportunity cost of deferring entry varies depending on the quality of the opportunity pursued, and that the social costs of failure influences required returns to entry. I believe that such fine-grained application of real options theory could be valuable in other areas of entry as well. Most obviously, it could help explain the influence of the financial costs of failure. But beyond that, the value of deferring an investment could likely help explain the timing of entry (c.f. Dixit, & Pindyck. 1994).

Third, there is a trend to compare national differences in terms of the financial and social costs of failure and to believe that lower costs of failure will have positive implications for entrepreneurship. While that appears to hold true for the general level of entrepreneurial entry, it is important to realize that not all entrepreneurship is created equally and that the institutions within a country can have different effects on the options for entrepreneurial activities with different characteristics (cf. Baumol, 1996). It would seem that low social costs of failure may incentivize the entry and persistence of entrepreneurs in low value activities and deter the entry the entrepreneurs who aspire to engage in activities that spur economic growth and prosperity. Given that these findings align with theoretical predictions related to cost structures in general, there is a reason to believe that the results also carry over into the financial costs of failure, i.e., it is likely that reduced financial costs of failure would encourage low-quality entries and deter high-quality entries. This is certainly an issue that runs counter to the received wisdom, and that deserves further scholarly attention.

6. LIMITATIONS AND FUTURE RESEARCH

There are some important limitations to this study which I hope future researches can address. First, while I study the entry decisions of more than 250,000 individuals from 35 countries, however, most of the countries are members of the European Union. This study was constrained to these countries because the data of the perceptual stigma of bankruptcy, a dimension of the social costs of failure variable, is collected by the European Union. This limitation could be addressed in the future studies as data on more countries with different institutional norms are collected.

Second, this study develops sophisticated multilevel regression models to examine intentions for venture growth and export orientation at the early stage. A limitation of this approach is that this study did not have the data to control for industry characteristics. Entrepreneurial growth aspiration, in terms of the number of expected employees within five years, may be influenced by industry type or industry life-cycle. Moreover, entrepreneurial export orientation may be influenced by the type of product or service. I hope future research could explore this important topic by addressing the limitation of this research.

Third, this study uses a general education measure of the human capital investment. However, this study lacked the data to consider factors such as the reputation of the higher education institution or the nature of education degrees. These factors could provide additional insight into the opportunity costs of entrepreneurial entry. I hope futures studies could investigate the moderating effect of human capital investment with more fine-grained measures of education. Lastly, although there are multiple costs of entrepreneurial failure that are financial, emotional, and social, this study narrowly focused on the social costs from stigmas of failure. I hope future studies could address the financial and emotional costs, as well as, other social costs of failure. To

do so, this study recommends the application of more fine-grained methodologies such as experimental, longitudinal study or stakeholder surveys directed toward capturing specific social attitudes and outcomes of entrepreneurial failure.

7. CONCLUSION

High costs of failure are associated with the lower entrepreneurial entry (Lee et al., 2007). This study challenges common beliefs about the negative connotations of high social costs of failure. Since many firms fail and because business failure is stigmatized in many countries, it is important to understand the relationship between social costs of failure and decisions to enter into entrepreneurship generally, as well as, decisions to enter with growth aspirations or export orientations. Building on the real options theory, this study argues and find that social costs of business failure differently affects the price of entrepreneurial entry options, resulting in selection effects.

Specifically, this study finds that higher social costs of failure are negatively associated with the total entrepreneurial activity, but is positively associated with the likelihood that entrepreneurs at the early-stage have growth aspirations or export orientation. Moreover, this study finds that the relationship between the social costs of failure and entrepreneurial entry decisions is moderated by the level of education. This study findings support that although the higher social costs of failure lower total entrepreneurial entry, higher social costs of failure can increase the quality of the entrepreneurial entry. This study also supports that entrepreneurs can take affirmative steps, such as increasing their education, to increase their options in entrepreneurial economies.

NOTES

1. Expected outcome = the probability of success x the expected outcome when upside – the probability of failure x the expected outcome when downside.
2. GEM surveys were completed via telephone interview or face-to-face interview where telephone is not prevalent in the country, reducing selection bias.
3. The countries in the final sample are Austria, Belgium, Brazil, China, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Ireland, Israel, Italy, Japan, South Korea, Latvia, Lithuania, Netherland, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States of America.

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FIGURES AND TABLES FOR CHAPTER III

Figure III-1: Conceptual Framework: The Social Costs of Failure and Entrepreneurial Entry

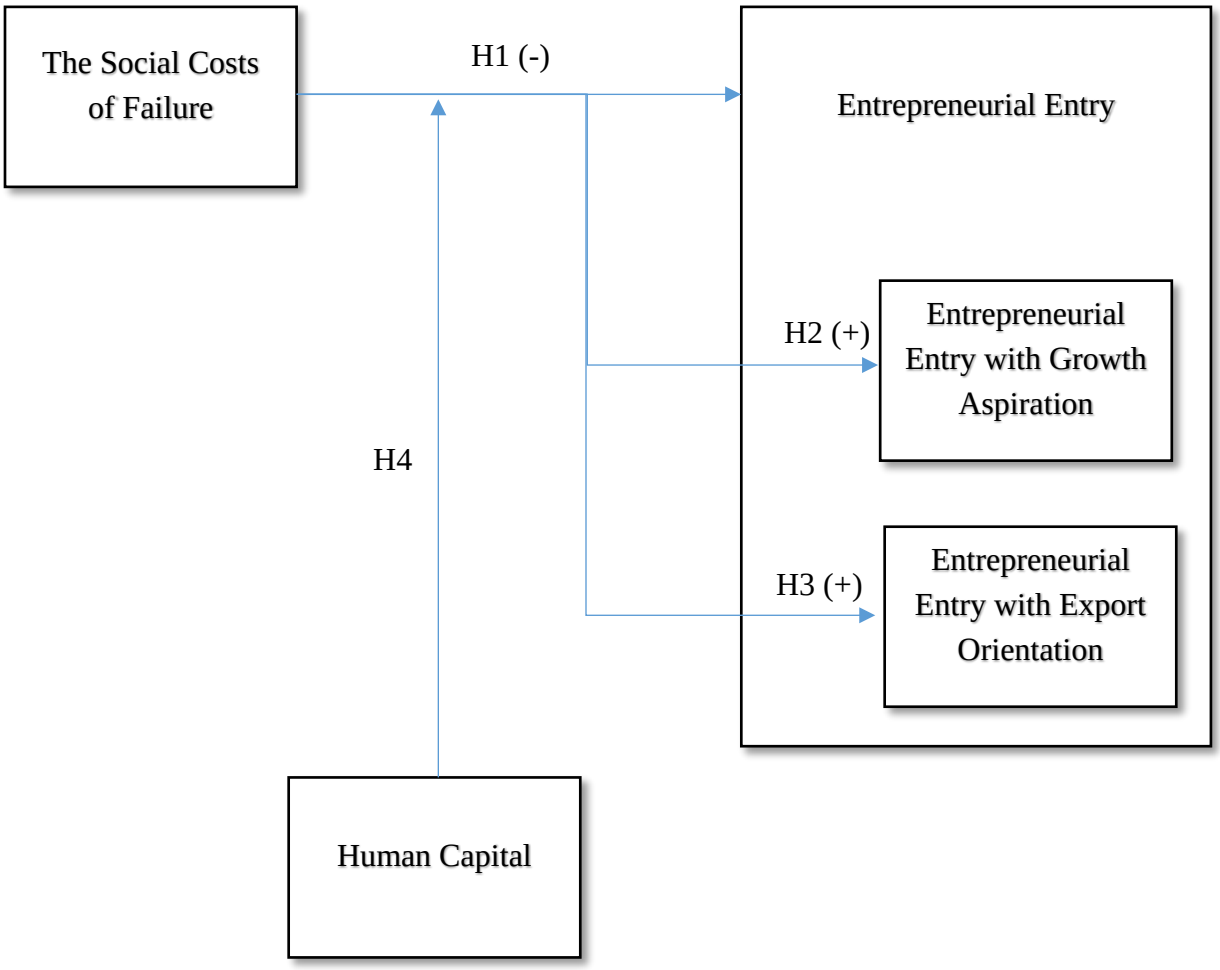


Table III-1: Definitions of Variables

Level	Variable	Definition	Source
Country	The social costs of failure. = Stigma of Bankruptcy + Regulatory conveyance of s tigma	Stigma of Bankruptcy: Responses to the statement 'people who have started their own business and ha ve failed be given a second chance' and weighted t he response by using (-2,2) scale.	Flash Euro Barometer #257 & #354
		Regulatory Conveyance of Stigma: The strength of credit reporting systems and the effectiveness of ba nkruptcy laws	World Bank Doing B usiness 2008-2011
	per capita GDP ppp (t-1): G DP PPP	per capita GDP at purchasing power parity at 2005 $USD	World Bank WDI 2008-2011
	Population Size (t-1)	Population Size (Log)	World Bank WDI 2008-2011
	Bankruptcy Law (t-1)	Resolving Insolvency: Rankings are based on dista nce to frontier scores for two indicators such as rec overy rate and strength of insolvency framework in dex (0 to 100)	World Bank Doing B usiness 2008-2011
Individual	Entrepreneurial Entry: TEA	1: individuals engaged in nascent entrepreneurial ac tivity or operating a venture less than 42 months; 0 otherwise	Global Entrepreneurship Monitor
	Entrepreneurial Entry with Growth Aspiration: TEA HJG	1: Nascent or new entrepreneurs who expect to emp loy twenty or more individuals within five years; 0 otherwise	Global Entrepreneurship Monitor
	Entrepreneurial Entry with Export Orientation: TEA EXP	1: TEA with foreign customers more than 25% of t otal customers; 0: otherwise	Global Entrepreneurship Monitor
	Age	Age of Respondents (Min.=18, Max.=64)	GEM APS 2009-2012
	Gender	1: Male; 0: Female	GEM APS 2009-2012
	HouseHold Income: HH Income	1 (lowest 33%), 2 (middle 33%), 3 (top 33%)	GEM APS 2009-2012
	Education	1: Respondents has a degree from more than post-s econdary education; 0: otherwise	GEM APS 2009-2012
	Social Capital	1: Respondent knows an entrepreneur; 0: otherwise	GEM APS 2009-2012

Table III-2: Descriptive and Correlations for Individual- and Country-Level Variables

Individual level correlations											
		Mean	Std. Dev.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	TEA	0.069	0.253	1.000							
(2)	TEA HJG	0.007	0.084	0.312	1.000						
(3)	TEA EXP	0.009	0.096	0.358	0.238	1.000					
(4)	Gender	0.481	0.499	0.072	0.047	0.041	1.000				
(5)	Age	41.839	12.938	-0.063	-0.023	-0.021	-0.026	1.000			
(6)	HH Income	0.334	0.471	0.048	0.038	0.027	0.094	-0.033	1.000		
(7)	Education	0.062	0.242	0.027	0.019	0.022	0.003	-0.002	0.121	1.000	
(8)	Social Capital	0.347	0.476	0.176	0.072	0.072	0.089	-0.121	0.116	0.044	1.000
Country-level correlations											
				(1)	(2)	(3)	(4)	(5)	(6)	(7)	
(1)	TEA	0.069	0.253	1.000							
(2)	TEA HJG	0.007	0.084	0.314	1.000						
(3)	TEA EXP	0.009	0.096	0.351	0.230	1.000					
(4)	GDP PPP	9.985	0.809	-0.082	-0.035	0.001	1.000				
(5)	Population Size	17.338	1.579	0.053	0.016	-0.048	-0.440	1.000			
(6)	Bankruptcy Law	66.859	24.119	-0.068	-0.024	0.006	0.822	-0.195	1.000		
(7)	Social costs of failure	-0.035	1.431	-0.056	0.001	0.038	0.498	-0.367	0.515	1.000	

Note: All significant at 0.05 level

Table III-3: Regression Result for Entrepreneurial Entry (Odds Ratio)

	Model 1 (TEA)			Model 2 (TEA)			Model 3 (TEA HJG)			Model 4 (TEA HJG)			Model 5 (TEA EXPORT)			Model 6 (TEA EXPORT)		
	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.
Fixed Part																		
Individual Level (Control)																		
Gender	1.61	***	0.02	1.61	***	0.02	2.98	***	0.15	2.98	***	0.15	2.19	***	0.09	2.19	***	0.09
Age	1.10	***	0.00	1.10	***	0.00	1.04	**	0.01	1.04	**	0.01	1.05	***	0.01	1.06	***	0.01
Age Squared	0.99	***	0.00	0.99	***	0.00	0.99	***	0.00	0.99	***	0.00	0.99	***	0.00	0.99	***	0.00
HH Income	1.13	***	0.01	1.13	***	0.01	1.56	***	0.05	1.56	***	0.05	1.18	***	0.03	1.18	***	0.03
Education	1.21	***	0.02	1.21	***	0.02	1.64	***	0.07	1.64	***	0.07	1.47	***	0.06	1.47	***	0.06
Social Capital	3.09	***	0.05	3.08	***	0.05	3.59	***	0.17	3.59	***	0.18	3.36	***	0.14	3.37	***	0.14
Country Level (Control)																		
GDP PPP	0.49	***	0.05	0.46	***	0.05	0.66	*	0.12	0.69	+	0.13	0.89		0.16	0.96		0.15
Log Population	0.90	+	0.05	0.89	*	0.05	0.88	+	0.06	0.91		0.06	0.71	***	0.04	0.74	***	0.04
Bankruptcy Law	1.02	***	0.00	1.02	***	0.00	1.00		0.01	1.00		0.01	1.01		0.01	1.00	+	0.01
Country Level (Independent)																		
Social costs of failure				0.93	+	0.03				1.15	*	0.08				1.21	**	0.06
Random Part and Model Fit																		
Intercept	9.80		15.2	15.7	+	25.1	0.09		0.21	0.04		0.09	0.80		1.79	0.22		0.44
RCV	0.274			0.268			0.455			0.410			0.317			0.245		
Δ pseudo-R^2 (from null model)	36.4%			37.8%			12.1%			17.4%			53.9%			64.4%		
Deviance	132,652.94			132,649.56			22,497.60			22,493.74			23,966.82			27,955.94		
Wald Chi2	9223.59			9224.88			1974.01			1978.04			1885.90			1905.98		
Prob>Chi2	0.00			0.00			0.00			0.00			0.00			0.00		
LR Test Prob < chi2	0.00			0.00			0.00			0.00			0.00			0.00		
# of Observation	264,620, 35countries			264,620, 35countries			264,620, 35countries			264,620, 35countries			264,620, 35countries			264,620, 35countries		
Obs per group min	1,397			1,397			1,397			1,397			1,397			1,397		
Obs per group avg	7,565			7,565			7,565			7,565			7,565			7,565		
Obs per group max	57,831			57,831			57,831			57,831			57,831			57,831		

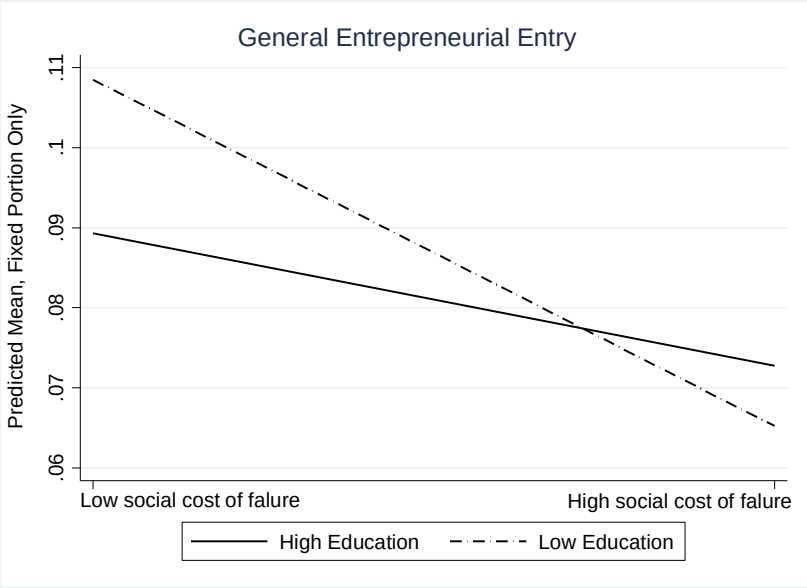
(***: p<0.001, **: p<0.01, *: p<0.05, ┼: p<0.1)

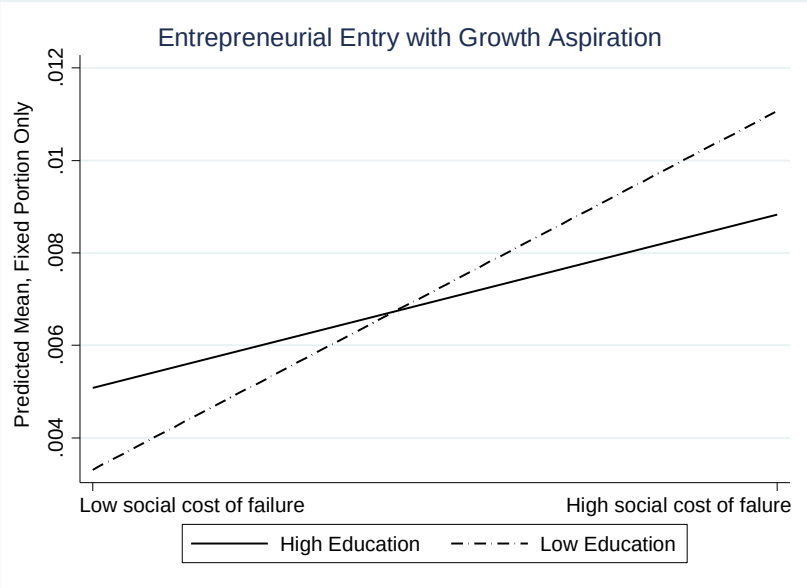
Note: RCV represents the residual country-level variance

Table III-4: Regression Result for the Moderating Role of Human Capital on Entrepreneurial Entry (Odds Ratio)

	Model 1 (TEA)			Model 2 (TEA HJG)			Model 3 (TEA EXPORT)		
	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.
Fixed Part									
Individual Level (Control)									
Gender	1.61	***	0.02	2.98	**	0.15	2.19	***	0.09
Age	1.10	***	0.00	1.04	***	0.01	1.06	***	0.01
Age Squared	0.99	***	0.00	0.99	***	0.00	0.99	***	0.00
HH Income	1.13	***	0.01	1.56	***	0.05	1.18	***	0.03
Education	1.21	***	0.04	1.63	***	0.07	1.50	***	0.06
Social Capital	3.08	***	0.05	3.63	***	0.17	3.37	***	0.14
Country Level (Control)									
GDP PPP	0.49	***	0.05	0.68	+	0.13	0.96		0.15
Log Population	0.89	*	0.05	0.92		0.06	0.74	***	0.04
Bankruptcy Law	1.02	***	0.00	1.00		0.01	1.00		0.01
Country Level (Independent)									
Social costs of failure	0.91	*	0.03	1.21	**	0.08	1.23	***	0.07
* Education	1.06	***	0.01	0.90	***	0.02	0.95		0.03
Random Part and Model Fit									
Intercept	13.2		20.8	0.04		0.02	0.21		0.43
Deviance	132,618.30			22,479.88			27,954.44		
Wald Chi2	9250.19			1995.84			1907.38		
Prob>Chi2	0.000			0.00			0.00		
LR Test Prob < chi2	0.000			0.00			0.00		
# of Observation	264,620, 35countries			264,620, 35countries			264,620, 35countries		
Obs per group min	1,397			1,397			1,397		
Obs per group avg	7,565			7,565			7,565		
Obs per group max	57,831			57,831			57,831		
(***: p<0.001, **: p<0.01, *: p<0.05, ┼: p<0.1)									

Figure III-2: Moderating Effect Graphs





CHAPTER IV :

EFFECTS OF STIGMA ON MARKET ENTRY:

A COMPARISON OF SOCIAL AND COMMERCIAL ENTREPRENEURS

1. INTRODUCTION

Social entrepreneurship is widely viewed as an effective approach to solving social problems that existing markets and institutions have failed to address (Mair & Marti, 2006). Due to its promise to address entrenched social problems, this form of entrepreneurship has gained global attention. However, social entrepreneurship remains undertheorized. This includes knowing what factors foster or inhibit the entry decisions of social entrepreneurs (Short, Moss, & Lumpkin, 2009). Knowing which factors influence entry decisions of social entrepreneurs is critical to understanding its rise because sometimes practitioners and scholars deem the creation of social value and economic value as incongruous (Marshall, 2011). For example, would a factor, which influences the entry decisions of commercial entrepreneurship, similarly influence the entry decisions of social entrepreneurship? Are social entrepreneurship entry decisions more sensitive to the cost of failure than commercial entrepreneurship entry decisions? Do social entrepreneurs apply rational reasoning in entry decisions similarly as commercial entrepreneurs? Based on real options logic, this study examines the relationship between national institutions and social entrepreneurship's prevalence across countries. In doing so, this study extends real options theory by highlighting its importance not only in commercial entrepreneurship contexts but also in social entrepreneurship contexts. At the same time, it highlights how rational reasoning in addition to altruistic motivations can explain social entrepreneurship entry decisions. Lastly, this study responds to a recent call for research that explores the substantial variance of social entrepreneurship prevalence across countries by addressing who becomes a social entrepreneur, and under what circumstances (Lepoutre, Justo, Terjesen, & Bosma, 2013).

Like commercial entrepreneurs, social entrepreneurs recognize and act upon discovered opportunities. Venkataraman (1997) claims the creation of social wealth is a by-product of

economic value created by commercial entrepreneurs. In contrast, the primary objective of social entrepreneurship is to create social value while simultaneously generating economic value (Mair & Marti, 2006). Because the primary objective of social entrepreneurs is to create social value, there is a general belief that social entrepreneurship entry decisions mainly stem from altruism and not from rational reasoning (Tan, Williams, & Tan, 2005). In particular, rational reasoning does not only consider the venture's upside gain, but also the venture's downside loss (Lee, Peng, & Barney, 2007). Thus, social entrepreneurship is not exempt from downside losses resulting from entrepreneurial failure when the venture fails to generate sufficient economic value to sustain operations (Bacq, Hartog, & Hoogendoorn, 2016). It is hard to assume that altruism without any rational reasoning can be the sole factor influencing social entrepreneurship entry decisions. Because we know little about how commercial entrepreneurship differs from social entrepreneurship (Bacq et al., 2016) and because governments increasingly promote social entrepreneurship as a complement to meeting social needs (Marshall, 2011), I argue that it is imperative to look at how commercial entrepreneurship and social entrepreneurship differ in their entry behaviors.

Why individuals chose entrepreneurship as a career is one of the eminent research questions in the entrepreneurship literature. Accordingly, in commercial entrepreneurship contexts, much research exists that examines the determinants that influence entrepreneurs' entry decisions (Baron, 1998; Busenitz & Barney, 1997; Shepherd, Williams, & Patzelt, 2015). The common assumption is that individuals pursue entrepreneurial careers to generate personal wealth (Campbell, 1992). Particularly, Eisenhauer (1995) found that 95% of individuals are motivated to create new ventures based on the promise of personal wealth. Moreover, Amit and his colleagues (1995) provide empirical evidence that the individuals with lower opportunity cost are more likely

to become entrepreneurs.

One such calculation involves understanding the influence of institutional forces (Baumol, 1996). In particular, it is well known that institutions which moderate the cost of failure influence entrepreneurial entry decisions (Armour & Cumming, 2008; Landier, 2005). In some cultures, an important institution that influences entrepreneurial entry decisions is the stigma of failure (Damaraju, Barney, & Dess, 2010). Stigma refers to a mark of disgrace that occurs, in certain contexts, when people who go against societal expectations are devalued (Goffman, 2009). In most entrepreneurial settings, society expects entrepreneurs to ensure the survival and viability of their venture (Lee, Yamakawa, Peng, & Barney, 2011). However, in many countries, if the entrepreneur declares bankruptcy and fails, such failure is marked with disgrace (Landier, 2005). Accordingly, the stigma associated with bankruptcy is a key indicator of failure and is often associated with severe social and economic consequences.

The stigma of bankruptcy directly increases the social cost of failure when it leads to the loss of credibility in one's social network (Sutton & Callahan, 1987). Further, stigma can indirectly generate emotional costs and financial costs, which limit future actions (Shepherd, Wiklund, & Haynie, 2009). On the other hand, legal bankruptcy mainly influences the financial cost of failure. However, the level of stigma accorded to failed entrepreneurs differs widely by country. For example, the milieu in Silicon Valley business often considers failure as a stepping-stone for future success; while in Japan entrepreneurial failure is a matter of shame to the extent that top managers of failed firms may commit suicide (Tezuka, 1997). Although all entrepreneurs are interested in creating successful ventures, the majority of ventures fail and many of them declare bankruptcy (Lee et al., 2011). Social ventures are no exception because they can fail by generating insufficient economic value for operations leading to bankruptcy (Foster & Bradach, 2005; Rykaszewski, Ma,

& Shen, 2013; Zaidi, 1999). Accordingly, like commercial entrepreneurs, social entrepreneurs evaluate weigh the incentives and disincentives associated with the expected outcome of entrepreneurial activity. However, a clear picture of how institutions influence the aftermath of a failure in social entrepreneurship has not emerged. In particular, we know that the stigma of failure is negatively associated with the entry decisions of commercial entrepreneurs (Damaraju et al., 2010; Landier, 2005). However, we do not know whether the stigma associated with entrepreneurial failure has the same role for the entry decisions of social entrepreneurs.

To address this gap, I turn to the literature on real options logic, which posits that an investment decision can be considered as the exercise of an option. In particular, it predicts that under high uncertainty, individuals are more likely to keep the option open for later rather than to exercise the option now (McGrath, 1999) and may defer entrepreneurial entry decisions that require substantial resource investments (O'Brien, Folta, & Johnson, 2003). In all entrepreneurship settings, the stigma of failure increases the downside risk by increasing the social, financial, and emotional costs when a venture endures failure (Shepherd et al., 2009). However, in social entrepreneurship settings there is the possibility that stigma due to failure may be lower than in commercial entrepreneurship settings. This is due to the altruistic aspects of social entrepreneurship and the fact that social entrepreneurs often receive tangible and intangible support from their government in some countries (Evans, 1996; Korosec & Berman, 2006). Thus, exercising the option to engage in social entrepreneurship can be more valuable than the option for commercial entrepreneurship in a society that highly stigmatizes failure. Accordingly, this research asks whether the failure in settings with high levels of stigma increases the value of the option to defer commercial entrepreneurship and decreases the value of the option to defer social entrepreneurship entry. Moreover, this study asks whether the stigma of failure influences the

option to defer entry differently when the social entrepreneur pursues a traditional revenue-generating and profit-making competitive strategy as opposed to a nonprofit and publicly subsidized competitive strategy.

This analysis reveals that the stigma of failure is positively associated with the likelihood of individuals to engage in social entrepreneurship. Particularly, the stigma of failure affects entry decisions with the revenue-generating type of social entrepreneurship, but not with the NGO-type of social entrepreneurship. Lastly, the entrepreneur's level of education negatively moderates the relationship between the stigma of failure and social entrepreneurship as well as revenue-generating social entrepreneurship. In other words, individuals with a low level of education are more sensitive to the stigma of failure, thus being more positively associated with social entrepreneurship entry decisions and especially with revenue-generating social entrepreneurship entry decisions.

This study stands to contribute in three key ways. First, this paper contributes to the field of social entrepreneurship research by highlighting the importance of individual discretion in the choice of a commercial or social entrepreneurship career. This is important because it can explain the prevalence of social entrepreneurship activity in a country. Knowing more about how stigma impedes or facilitates entry into commercial as opposed to social entrepreneurship can inform us about the promise of addressing social problems with entrepreneurial solutions. Second, this study investigates the extent to which institutions may affect entry decisions and interact with the choice to pursue a market strategy or not. Because social entrepreneurship contains a diverse range of organizational forms (Lepoutre et al., 2013; Nicholls & Cho, 2006), it is important to understand how institutions affect different forms of social entrepreneurship. This is a response to recent calls for consideration of context in examining social entrepreneurial behavior (Short et al., 2009). Third,

this research aims to provide a comprehensive understanding of how stigma affects entry decisions of social entrepreneurs. Although the stigma of failure has been considered to constrain most commercial entrepreneurship, this study shows that stigma of failure in fact propels the choice to pursue social entrepreneurship. Thus, this study responds to calls asking for the study of the positive role of stigma on entrepreneurship (Damaraju et al., 2010; Paetzold, Dipboye, & Elsbach, 2008).

The remainder of this article proceeds as follows. The first section of this article develops hypotheses regarding the effect of stigma on entrepreneurial decisions to pursue social entrepreneurship. Then, I describe the use of data from the Global Entrepreneurship Monitor (GEM) and other sources that capture a variety of national institutional indicators. I follow with a discussion of the variables and methods utilized in this study and present the findings. Finally, I evaluate the findings in the discussions and conclusion.

2. THEORETICAL DEVELOPMENT

2.1 Determinants of Social Entrepreneurship Entry Decision

Social entrepreneurship is a widespread phenomenon but its prevalence varies substantially across countries (Lepoutre et al., 2013). We know little about the country-level factors that foster or inhibit someone to pursue social entrepreneurship, or how national differences influence the decision to launch a social venture. Although necessity drives entrepreneurial pursuits in some cultures (Aidis, Estrin, & Mickiewicz, 2009; Wennekers, Van Wennekers, Thurik, & Reynolds, 2005), in general, it is widely accepted that ventures are not started by chance, but result from entrepreneurial intentions (Ajzen, 1991). As such, the choice to become an entrepreneur is a career

decision (Zhao, Seibert, & Lumpkin, 2010). At the same time, the decision to initiate venturing also involves other decisions to determine the type and nature of venturing activity (Ajzen, 2005). Although several researchers find that nonpecuniary rewards such as the need for achievement, autonomy, or emotional gain (Amit & Zott, 2001; Baron, 1998; McClelland & Winter, 1969) explain entry decisions, Eisenhauer (1995) finds that 95% of entrepreneurs make entrepreneurial entry decisions based on the expected gain of pecuniary rewards. When making such entrepreneurial entry decisions, Douglas and Shepherd (2000) argue that individuals are more or less rational, that is, they attempt to make utility maximizing calculations considering both pecuniary and nonpecuniary rewards. Moreover, previous studies highlight that economic consideration can determine entry and type of entrepreneurial activity decisions (Shepherd et al., 2015). However, a utility maximizing calculation is a complex process that is subject to the influence of multiple factors. In prior research, such as individual and institutional traits (Davidsson & Wiklund, 2001; Stephan, Uhlaner, & Stride, 2014).

Prior research recognizes that individual-level factors influencing entrepreneurial entry decisions by commercial entrepreneurs include their attitudes toward loss under uncertainty (Dew, Read, Sarasvathy, & Wiltbank, 2009; Knight, 1921), their optimism about the probability of venture success (Amit, MacCrimmon, Zietsma, & Oesch, 2001), their interpretations of opportunity costs (Campbell, Ganco, Franco, & Agarwal, 2012), their perceived ability to achieve desired results (Townsend, Busenitz, & Arthurs, 2010), and their susceptibleness regarding decision-making biases and heuristics (Busenitz & Barney, 1997).

At the same time, Baumol (1996) suggests that institutional factors influence the expected payoffs from electing to launch a venture. The institutional factors examined in previous studies fall into two groups; the first group influences the upside potential of new ventures and the second

group of factors affects the downside potential of new ventures. First, there are institutional factors that can increase the expected payoff when a venture faces a potential upside. In particular, entrepreneurial entry is more prevalent when industry profit margins are high (Dunne, Roberts, & Samuelson, 1988), when market demand is high (Schmookler, 1966), and when the economy is growing (Reynolds, Miller, & Maki, 1995). Second, there are institutional factors that can influence the expected payoff when a venture faces a potential downside. Armour and Cumming (2008) and Lee et al. (2011) found that entrepreneur-friendly bankruptcy laws have a statistically and economically significant effect on the rate of new firm entry because they determine the expected payoff of potential failure. Furthermore, Damaraju et al. (2010) argue that the stigma attached to entrepreneurial failure may affect not only those who failed but also those who expect to engage in risky activities.

The determinants of entry decisions in a commercial entrepreneurship context have been widely examined (Shepherd et al., 2015), but important gaps exist in the social entrepreneurship literature. The first gap I have identified in the social entrepreneurship literature is the insufficient consideration of rational choice theories and self-oriented reasoning. Although a few scholars assert that social entrepreneurship is likely to be motivated by self-interest and a desire for social power (McClelland, 1994), most scholars insist that the decision to start a social enterprise is mainly motivated by compassion and prosocial motivation (Miller, Grimes, McMullen, & Vogus, 2012; Nga & Shamuganathan, 2010). However, social entrepreneurship is highly diverse in that social entrepreneurship encapsulates both NGOs and commercial ventures that bring to the market innovative solutions to address social problems (Short et al., 2009). Thus, it is important to examine what types of social entrepreneurship can be explained by rational decision processes, if any.

The second gap is that previous social entrepreneurship research has insufficiently considered the discrete choice to pursue commercial versus social entrepreneurship as a career choice. Many acknowledge that social entrepreneurs start their ventures with compassion rather than rational reason (Miller et al., 2012). However, it is hard to believe that social entrepreneurship can start without any rational calculation because social entrepreneurship cannot be exempt from the costs of business failure. At the same time, an entrepreneurial opportunity can be exploited by different types of entrepreneurship (McMullen, 2011). Moreover, institutional forces may affect the expected payoff from social entrepreneurship differently than from commercial entrepreneurship. Hence, it is important to consider jointly how institutions affect each type of entrepreneurship (commercial and social) and how institutions influence an individual's choice to follow a revenue generating versus a nonprofit economic strategy when choosing social entrepreneurship as a career.

The last gap is that there is relatively little research addressing how institutions associated with entrepreneurial failure affect social entrepreneurship entry decisions. Particularly, social entrepreneurship researchers have focused on understanding the institutions associated with the prevalence of social problems and social entrepreneurship activities across countries. These include government policy for social welfare (Estrin, Mickiewicz, & Stephan, 2013; Stephan et al., 2014), labor policy (Spear & Bidet, 2005), presence of social and environmental problems (Elkington & Hartigan, 2013; Zahra, Rawhouser, Bhawe, Neubaum, & Hayton, 2008), and the level of development of economic and social systems (Elkington & Hartigan, 2013). However, commercial entrepreneurship researchers suggest that institutions associated with entrepreneurial failure can influence entrepreneurial decisions (Armour & Cumming, 2008; Lee et al., 2007). Among these institutions, prior research shows that stigma highly affects entrepreneurial entry

decisions (Damaraju et al., 2010; Landier, 2005; Lee et al., 2007). However, we understand little about the relationship between the stigma of failure and social entrepreneurship entry decisions. This is an important question in the social entrepreneurship literature because both social and commercial entrepreneurs take risks when entering a market (Estrin, Mickiewicz, & Stephan, 2016). Moreover, this is critical to policymaking that attempts to foster both commercial and social entrepreneurial activities by lessening costs of failure and the stigma of failure.

2.2 The Stigma of Entrepreneurial Failure

Although all entrepreneurs intend to create successful ventures, most entrepreneurs fail and, as a result, many end up in bankruptcy (Lee et al., 2011). In particular, research shows that 46 to 60 percent of U.S. firms that filed for bankruptcy were young firms with less than five years in the market. Moreover, White (2001) shows that 88 percent of U.S. firms that filed for bankruptcy are small firms having fewer than 20 employees. Just as bankruptcy is common in commercial entrepreneurship, it likely is so as well in the context of social entrepreneurship. For example, Austin and his colleagues (2006) and Zahra and his colleagues (2009) state that commercial entrepreneurship and social entrepreneurship have many features in common, such as the necessity to bear risk and to invest. Thus, social entrepreneurs are just as likely to fail, as commercial entrepreneurs will due to the inability to generate sufficient economic value.

Society and entrepreneurs expect them their organizations to survive (Lee et al., 2011) long enough to generate pecuniary and non-pecuniary rewards. The declaration of bankruptcy indicates that the entrepreneur failed in its role, which is often stigmatized (Landier, 2005). Stigma refers to a mark of disgrace associated with people who society devalues (Crocker, Major, & Steele, 1998;

Goffman, 2009). In many societies, various punishments result from the stigma of entrepreneurial failure (Singh, Corner, & Pavlovich, 2015). For example, failed entrepreneurs may be tainted as losers by their professional and personal networks; and their chances of redemption such as starting a venture or finding an employment may be dampened (Mitsuhashi & Bird, 2011; Sutton & Callahan, 1987). Although bankruptcy law regulates the financial cost of failure, the stigma of failure influences the emotional and social costs of failure to the point that they outweigh the financial cost of failure. Accordingly, several scholars have examined the consequence of the stigma of entrepreneurial failure. First, Lee et al. (2007) insist that it is more difficult and/or costly for failed entrepreneurs to access capital in the future, increasing the financial cost of failure. Second, they state that people with failed businesses are often marked as losers, which leads to a loss of self-esteem and self-confidence (Lee et al., 2007). Moreover, Shepherd and his colleagues (2009) show how failed entrepreneurs often endure emotional distress and grief, which inhibit learning from failure (Shepherd, 2003). Third, the stigma of failure incurs social costs that can lead to a breakdown of personal relationships including marriage and friendship, as well as professional relationships such as the loss of employees, suppliers, and other business stakeholders (Cope, 2011; Singh, Corner, & Pavlovich, 2007; Sutton & Callahan, 1987). Furthermore, the stigma of failure remains with the entrepreneur for a longer period even after the organization has died (Semadeni, Cannella Jr, Fraser, & Lee, 2008).

The level of the stigma of failed entrepreneurs differs by country despite the frequency of bankruptcy. In Silicon Valley, business failure often receives positive recognition because it implies entrepreneurial learning for future endeavors (Landier, 2005). However, entrepreneurial failure such as bankruptcy is a matter of shame in Japan to the extent that top managers of bankrupt firms may commit suicide to avoid experiencing stigma (Tezuka, 1997). In colonial America,

failure resulted in the public punishment by having to sit with a basket over one's head (Efrat, 2006). Thus, many argue that the stigma of failure may influence entrepreneurial entry decisions. In particular, Damaraju et al. (2010) argue that the stigma attached to entrepreneurial failure may affect not only those who have failed but also those expected to engage in risky activities. However, prior stigma research has tended to focus on commercial activity and ignored how the stigma associated with entrepreneurial failure affects social entrepreneurship entry decisions.

Given that stigma determines the downside risk of venture failure (Shepherd et al., 2009) and because there is value in considering how a real options perspective can model the relationship between entrepreneurial entry decisions and the stigma of failure, this study turns to the literature on real options logic (Dixit & Pindyck, 1994; McGrath, 1996).

2.3 Real Options Theory and the Stigma of Entrepreneurial Failure

In contrast to neoclassical investment theory, real options theory focuses on actual business applications of behavioral decisions under uncertainty (Dixit, 1989; Kogut & Kulatilaka, 2001). Real options theory predicts that uncertainty will affect entrepreneurial entry when the investment is at least irreversible (Dixit & Pindyck, 1995). Because uncertainty is a key feature of entrepreneurship (Knight, 1921) and starting a venture requires irreversible investments (Campbell, 1992), a real options lens becomes useful in understanding entry decisions. At the threshold of founding a new firm, an individual has different types of real options, such as the option to defer, the option to abandon, and the option to alter inputs (Kester, 1984). Among these options, researchers have focused on the option to defer in examining entrepreneurial entry decisions (O'Brien et al., 2003). In entrepreneurship contexts, the value of the option to defer increases

(making entrepreneurial entry less likely) when outcome uncertainty increases, because it allows individuals to acquire new information before committing to invest resources (O'Brien et al., 2003).

The stigma of failure adds financial, emotional, and social costs to the potential downside outcome in addition to the loss of sunk costs (Shepherd et al., 2009; Sutton & Callahan, 1987). In an environment with the stigma of failure, individuals will appreciate the option to defer entrepreneurial entry, because they gain extra time to acquire more information before committing (Dixit & Pindyck, 1995). However, in the presence of stigma, the value of the option to defer pursuit of social entrepreneurship is lower than the value of the option to defer pursuit of commercial entrepreneurship for the following reasons.

First, the key idea of real options theory is managing the cost of failure by limiting exposure to downside risk while maintaining access to an opportunity (McGrath, 1999). Social entrepreneurship may limit exposure to downside risk better than commercial entrepreneurship because the negative impact of stigma associated with entrepreneurial failure is lower when the venture is oriented towards helping others rather than helping oneself. (Galinsky et al., 2003; Turner & Tajfel, 1986). In contrast to commercial entrepreneurship, social entrepreneurship explicitly emphasizes social value creation for others over economic value creation (Mair & Marti, 2006). Just as we do not blame firefighters, who may have failed their mission because of their devotion to society, the severity of blame for failed social entrepreneurs would likely be lower than that of failed commercial entrepreneurs. In other words, by pursuing social value creation, a social entrepreneur can minimize the potential downside risk and reduce the consequences of stigma from failure. As an example, suppose that an individual has identified an entrepreneurial opportunity with positive social externalities. Therefore, the entrepreneur can decide whether to exploit this opportunity through either commercial or social entrepreneurship. If the individual

observes that there is a greater downside risk for commercial entry due to the stigma of failure, the entrepreneur would exercise the option to exploit the opportunity through social entrepreneurship.

Second, although I argue that social entrepreneurship allows nascent entrepreneurs to limit exposure to downside risk from the stigma of failure compared to commercial entrepreneurship, social entrepreneurship can be an attractive career choice as a stigma management strategy for failed entrepreneurs in a society that highly stigmatizes failure. Several researchers show that stigmatized individuals are more willing to help others in order to downplay the stigma effect (Fitzgerald & Lueke, 2015; Taub, McLorg, & Fanflik, 2004). Similarly, the stigmatized failed entrepreneurs are more willing to engage in activities to help others via social entrepreneurship to offset the endorsed stigma from previous entrepreneurial failure.

Third, real options theory states that the value of the option to defer investment is higher when sunk costs are larger (Dixit & Pindyck, 1994). The sunk costs in social entrepreneurship are smaller than those of commercial entrepreneurship. This is because social entrepreneurs can often partner with governments and private donors, which can provide tangible and intangible resources (Evans, 1996; Korosec & Berman, 2006). Particularly, Shaw and Carter (2007) find that only two percent of 80 social entrepreneurs in the United Kingdom had made use of their own funds for launching social enterprises. In addition, social entrepreneurs often rely upon volunteers as board members or as staff (Austin et al., 2006). This means that social entrepreneurs do not require the same amount of investments as commercial entrepreneurs to staff their ventures. For example, suppose that an individual needs $100 in sunk costs to start a commercial venture. Due to aid from government and volunteers, a social entrepreneur can lower its sunk costs to enter the market better than the entrepreneur who pursues a commercial strategy. Hence, the value of the option to defer falls when sunk costs are smaller (Crifo & Sami, 2008; Dixit & Pindyck, 1994); that is, the option

value of deferring social entrepreneurship entry is lower than commercial entrepreneurship. Accordingly, I hypothesize:

> **Hypothesis 1:** The stigma of entrepreneurial failure at the national level is positively associated with the likelihood of individuals' engagement in social entrepreneurship.

Social ventures may differ with respect to their dependence on the market for generating revenues (Lepoutre et al., 2013; Stephan et al., 2014). Austin and his colleagues (2006) state that reliance on market mechanisms is an important identifier to differentiate social entrepreneurship. Accordingly, this study distinguishes between two types of social entrepreneurship: NGO-types and revenue-generating types. In contrast to revenue-generating social entrepreneurship, NGO-type social entrepreneurship generates economic value partly by leveraging the resources of private and public donors (Stephan et al., 2014). Hence, unless individuals are solely motivated to create social value, pursuit of the NGO-type social entrepreneurship will not be an appropriate career option to individuals motivated by pecuniary rewards even though social entrepreneurship can be an attractive option to avoid the stigma of failure. For example, let us suppose that an individual identifies an opportunity for selling shoes and the individual chooses a social entrepreneurship business model rather than a commercial entrepreneurship model to avoid the stigma of failure. The individual can easily choose a revenue-generating type of social entrepreneurship by empowering those in need through employment and/or applying a Toms Shoes' (www.toms.com) business model, where a pair of shoes is donated to a worthy individual for every pair sold (Massetti, 2012). However, it would be difficult for the individual to choose an NGO-type of social entrepreneurship model that forgoes the profit-making opportunity and solely rely on the help from donors to remain sustainable.

In sum, the option to engage in revenue-generating type social entrepreneurship can be more valuable under the stigma of failure than the option to engage in NGO-type social entrepreneurship. This is because the revenue-generating type of social entrepreneurship allows for creating economic value similarly to commercial entrepreneurship and has less downside risk due to the lower stigma of failure and/or availability of government subsidies and support from volunteers. Thus, I hypothesize:

> **Hypothesis 2:** The stigma of entrepreneurial failure at the national level is positively associated with the likelihood of individuals' engagement in revenue-generating social entrepreneurship, but not with NGO-type social entrepreneurship.

Real options theory predicts that there may be some gain to delaying the investment decision now when the outcome of the investment is uncertain. Therefore, the level of investment irreversibility moderates the value of the option to delay. In particular, Dixit and Pindyck (1994) state that the reversibility of investment decreases the value of the option of delaying the investment. For example, if the investment made is fully reversible, the option to defer adds no value such that the investment decision maker is less sensitive to uncertainty. In other words, when an investment does not require any sunk cost, which is the cost that cannot be recovered after the investment has been made; it is more valuable to exercise the option rather than to delay the investment decision.

Entrepreneurial entry decisions entail several investments in the form of human, social, and financial capital (Shepherd et al., 2015). Among these investments, formal education is an important component of human capital (Becker, 2009; Jacobs, 2007). In particular, formal

education assists individuals' cognitive abilities and the amount of accumulated knowledge. Based on the real options perspective, O'Brien et al. (2003) argue that human capital investments, which are necessary for new ventures are more reversible for individuals with higher education. This suggests that higher irreversibility is associated with higher human capital investments; therefore, human capital would have a positive moderating role between the level of uncertainty and the value of the option to defer. As such, highly educated entrepreneurs would be less sensitive to uncertainty, because their high level of human capital allows them to find other career options if their venture fails.

Similarly, I argue that education levels can determine the level of an investment's reversibility and that it plays a moderating role on the relationship between the stigma of failure and social entrepreneurship entry decisions. In particular, higher levels of education are a more reversible human capital investment for entrepreneurial entry than low levels of education, because formal education as a component of human capital can be valued similarly in other occupational alternatives (Becker, 2009; Davidsson & Honig, 2003). For instance, failed entrepreneurs with a high level of education can redeploy their human capital in other occupational contexts easily. Consequently, I predict that individuals with a high level of education will be less sensitive to the downside risk induced by the stigma of failure. Consequently, individuals with a low level of education would be more sensitive to the stigma of failure in their entrepreneurial entry decisions; thus, more likely to be social entrepreneurs.

In summary, I argue that individuals with a high level of education are less sensitive to the downside risk increased by the stigma of failure. Thus, I predict that the stigma of failure will have a stronger impact on the probability of social entrepreneurship entry decisions for individuals with a low level of education. Accordingly, I hypothesize that:

Hypothesis 3: The level of human capital will negatively moderate (a) the relationship between the stigma of failure and social entrepreneurial entry decisions, and (b) the relationship between the stigma of failure and revenue-generating social entrepreneurship entry decisions, such that individuals with higher education will be less sensitive to the stigma of failure.

INSERT FIGURE IV-1 ABOUT HERE
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3. METHOD

3.1 Data

To test the impact of country-level stigma on individual-level social entrepreneurship-entry decisions, this study established a unique data set by combining data from the Global Entrepreneurship Monitor Adult Population Survey (GEM APS), the Heritage Foundation, the World Bank, the Hofstede index, and the European Flash Barometer. The data on the main dependent variable - individuals' engagement in social entrepreneurship activity - as well as individual level controls come from the GEM Adult Population Survey. This study utilized the GEM APS dataset in the year of 2009 when the GEM published a special issue on social entrepreneurship activities across countries. The GEM project is an ongoing cross-national survey started in 1999 with the aim of measuring entrepreneurial activities across countries (Bosma, 2013). The GEM project randomly selects survey respondents from the general population of their countries and interviews them about their entrepreneurial attitude, intentions, and activities. On average 2,000 individuals are drawn from each country. The GEM manual and Lepoutre et al. (2013) list the procedures used to collect the best possible randomly selected, standardized, and

representative data. Although GEM APS data exists for 49 countries, I exclude those observations for which all required data for the analysis was unavailable. In addition, I restrict the sample within the working age population from 18 to 64 years old.

This study obtained independent variable data on the stigma of bankruptcy from the survey collected by the European Flash Barometer (FB). Data on the accessibility of credit information comes from the World Bank Doing-Business database. Other country-level controls such as GDP per capita at purchasing power parity (GDP PPP), and GDP growth are obtained from the World Bank database; and, data on Hofstede's power-distance measure was downloaded from http://geert-hofstede.com. I combined individual-level data from the GEM data with country-level data from these diverse sources. In order to address endogeneity concerns, I lagged all country-level variables for one year. Complete data were available for 23 countries and the final sample includes 51,022 observations of individuals. The countries in the final sample are Belgium, Brazil, China, Croatia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, South Korea, Latvia, Netherland, Norway, Russia, Slovenia, Spain, Switzerland, the United Kingdom, and the United States.

3.2 Measures

Dependent Variables. The three key dependent variables include social entrepreneurship entry (SE Entry), revenue-generating social entrepreneurship entry (REV SE Entry), and NGO-type social entrepreneurship entry (NGO Entry). The latter two dependent variables are a subset of the first dependent variable. In particular, the first dependent variable includes individuals engaged in social entrepreneurship activity. This dependent variable is a binary variable coded one if the

individual is engaged in establishing a social enterprise in the past 12 months or has operated a social enterprise for less than 48 months; otherwise, the dependent variable is coded as zero. In particular, GEM asks survey participants the following question: "Are you, alone or with others, currently trying to start or currently owning and managing any kind of activity, organization or initiative that has a particularly social, environmental or community objective? (Lepoutre et al., 2013)" This definition of social entrepreneurship adopted by GEM aligns with a widely accepted definition of social entrepreneurship. Hence, it covers organizations including nonprofits that have pure social, environmental or communal goal orientations to hybrid organizations that includes commercial enterprises reporting that they work predominantly on social/environmental/ communal issues (Mair & Marti, 2006).

To assess social entrepreneurship entry type, I use two variables taken from the GEM APS. The GEM 2009 special report allows distinguishing four types of social entrepreneurship, such as 'Not-for-Profit (NFP) social entrepreneurship', 'Social Hybrid social entrepreneurship', 'Economic Hybrid social entrepreneurship', and 'For-Profit social entrepreneurship' (Bosma & Levie, 2010). Revenue-generating type social entrepreneurship is coded as 1 if the individual engages in 'Social Hybrid social entrepreneurship', 'Economic Hybrid social entrepreneurship', or 'For Profit social entrepreneurship' that generate economic value, and is coded as zero otherwise. In addition, NGO-type social entrepreneurship entry is assessed by a binary variable, which is coded 1 if the individual engages in 'NFP social entrepreneurship,' which does not generate economic value but utilizes innovative solutions for social or environmental issues, and 0 otherwise.

Independent Variable. The stigma of failure (STG) constitutes the main independent variable. I follow prior research that does the same (Simmons, Wiklund, & Levie, 2014). Thus, I use data

collected in 2009 by the European Commission to examine attitudes towards the stigma of failure. Although the focus of this dataset is on the European Union, it also provides data from non-European countries such as South Korea, China, Brazil, and the United States for comparative analysis. The stigma of bankruptcy variable measures the percentage of responses to the statement, "people who have started their own business and have failed should be given a second chance." Possible responses to this statement include the following: (1) strongly agree, (2) agree, (3) disagree, (4) strongly disagree, and (5) don't know. To ease interpretation of results, I weighted the responses by using a (-2, 2) scale, and reversed the sign of the stigma of bankruptcy variable; thus, a high value of stigma indicates greater sanctions on failure.

Moderating variable. This study uses an individual's education level (EDU) as the measure of general human capital. Education levels are widely used as a measure of human capital and are known as a factor associated with entrepreneurial entry decisions (Estrin et al., 2016). The data of individual education level is drawn from GEM APS data that captures education levels with a five-stage categorical scale. This study created a dummy variable where the level of education more than post-secondary degree is coded 1, and the level of education less than secondary degree is coded 0.

Control Variables. Consistent with previous research, this study controls for the effects of individual characteristics associated with social entrepreneurship activity. Accordingly, this study includes several variables to control individual differences such as age (AGE), gender (GEN), financial capital (FC) and social capital (SC). Estrin and his colleagues (2013) find that men are more likely to be social entrepreneurs and age has a positive relationship to social entrepreneurship entry. In addition, they find that higher education levels are positively related to social entrepreneurship entry. Hence, I control for the effect of gender, age, and education to examine

the hypotheses. In addition, I controlled for individual-level resources such as financial capital, human capital, and social capital because individual resources can regulate opportunity costs (Shepherd et al., 2015). Financial capital assesses whether a respondent belongs to the lower, middle, or higher tier of a countries household income distribution (Denning, 2014; Morduch, 1999). This study measures social capital as a dummy variable that assesses whether the respondents "personally know someone who had started a business in the past two years" (Minniti & Nardone, 2007).

Country-level factors influence social entrepreneurship entry decisions at the individual level. In particular, I control a country's wealth by including per capita GDP at purchasing power parity (GDP PPP) because it is known to be associated with individuals' engagement in social entrepreneurship activity (Lepoutre et al., 2013). Further, this study controls a government's activism on social welfare is expected to affect the prevalence of social entrepreneurship (Stephan et al., 2014). Like previous studies, this study is unable to a find direct measurement of government expenditure on social welfare. Thus, I use the Heritage Foundation's index of *'Government Size'* (GS) in the economic freedom index as a proxy for government expenditure on social welfare.

To ensure that stigma provides information about social entrepreneurship prevalence over and above the information provided by other formal country-level institutional mechanisms, I control for the *Accessibility of Credit Information* (ACI), which explores two sets of issues: the strength of credit reporting system, and the effectiveness of collateral and bankruptcy laws in facilitating lending. In addition, this study controls *Rate of Recovery* (RR) which is governed by bankruptcy laws. The rate calculates how many cents on the dollar creditors recover from an insolvent firm; the lower rate of the recovery rate means the higher rate of recovery by failed entrepreneurs (Lee et al., 2011).

Lastly, the prevalence of social problems in a country can be determinants of social entrepreneurship activities (Elkington & Hartigan, 2013; Zahra et al., 2008). However, social entrepreneurship entry decisions are influenced by the level of tolerance for social problems by country regardless of the prevalence of social problems within them (Puumalainen, Sjögrén, Syrjä, & Barraket, 2015). Hence, I control for the tolerance level for social problems by utilizing the *'Power Distance'* measure from the Hofstede index. The variable ranges from 0 to 100. 'Power Distance' refers to 'the extent to which individuals, groups or societies accept inequalities in power, status or wealth as unavoidable, legitimate or functional' (Hofstede, 1984; Hofstede, 2001). For example, in higher power distance cultures, individuals are greatly accepting of inequality, indicating the high tolerance for social problems (Kirkman, Chen, Farh, Chen, & Lowe, 2009). However, in societies with lower power distance, people strive to ameliorate the situation of social inequalities. Accordingly, I use 'Power Distance' as a proxy to measure a country's degree of tolerance for social problems.

3.3 Statistical Analysis

This study tests the effect of country-level stigma on social entrepreneurship entry decisions by using multi-level logistic regression analysis. Because of data is nested within countries (Guo & Zhao, 2000), I deemed multi-level logit regression as the most appropriate statistical method. This approach is consistent with recommendations for the use of multilevel analysis (Davidsson and Wiklund, 2001) and with recent uses of multilevel analysis in entrepreneurship studies (Autio et al., 2013; Estrin et al., 2013; Stephan et al., 2014).

To verify the appropriateness of using multilevel regression models, I first examined intra-

class correlations (ICC) (Bliese, 2000; Hox, Moerbeek, & van de Schoot, 2010; Peterson, Arregle, & Martin, 2012) across countries. If the ICC shows significant national differences in an individual-level dependent variable, one should use a multilevel model (Hofmann et al., 2000; Peterson et al., 2012). Thus, I estimated the ICC for the three dependent variables: social entrepreneurship entry, revenue-generating social entrepreneurship entry, and NGO social entrepreneurship entry. The results show that 9.7% of the total variance resided at the country level for social entrepreneurship entry, 14.6% for revenue-generating social entrepreneurship entry, and 9.4% for NGO social entrepreneurship entry. The ICC estimates are within the normal range (5-20 %) (Bliese, 2000) and indicate that country-level variance is highly significant, justifying the application of multilevel regression (Bliese, 2000).

This study used STATA (version 14) to analyze the data and report estimated regression coefficients, degrees of freedom, and ICC scores for each model to check the improvement of the estimates over previous models. Furthermore, I compute "pseudo-R^2" as suggested by Hox et al. (2010), which reports the explanatory power of the independent variables by comparing the difference between the residual country-level variance in a basic model and the variance in a model with independent variables. At the same time, I present odds ratios (OR) rather than coefficients to ease interpretation. The baseline category represents individuals that do not engage in a start-up activity. Thus, a positive effect (OR>1) means that a variable is positively associated with the likelihood of an individual's engagement in social entrepreneurship start-up activities. In contrast, a negative effect (OR<1) means that a variable has negative association with the likelihood of engaging in social entrepreneurship start-up activities.

I also examine the Variance Inflation Factor (VIF) in this study's models to rule out the possibility of strong multicollinearity. All VIF scores were below 10, which rules out major

concerns with multicollinearity (Hair Jr, Anderson, Tatham, & Black, 1998).

INSERT TABLE IV-1 & IV-2 ABOUT HERE
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4. RESULTS

This study provides definitions and data sources for variables in Table IV-1 and presents correlation matrices in Table IV-2. Model 1 in Table IV-3 presents the baseline model for social entrepreneurship entry. I then proceed to Model 2 in Table IV-3 where I test Hypothesis 1. Because *stigma* is greater than one, I find that the stigma of entrepreneurial failure at the national level is positively associated with the likelihood of individuals' engagement in social entrepreneurship (Odds ratio 2.48, $p<0.1$). This clearly supports Hypothesis 1 by showing that in nations with a higher stigma of failure social entrepreneurship increases. In addition, the Likelihood-Ratio (LR) test for the difference in pseudo-R^2 between Models 1 and 2 indicates significant between-group variance in slopes. Overall, the stigma of failure, explained 9% more of the country-level variation.

Hypothesis 2 predicts that the stigma of entrepreneurial failure at the national level is positively associated with the likelihood of individuals' engagement in revenue-generating social entrepreneurship, but not with NGO social entrepreneurship. Model 3 in Table IV-3 presents the baseline model for revenue-generating social entrepreneurship entry. I then proceed to Model 4 in Table IV-3 to explore the effect of the stigma of failure on this type of social entrepreneurship entry. The model shows that the stigma of entrepreneurial failure at the national level is positively associated with the likelihood of individuals' engagement in revenue generating social entrepreneurship entry (Odds ratio 6.77, $p<0.01$). Further, when comparing differences in pseudo-R^2 between Models 3 and 4, I see that the stigma of failure explains 18% more of the country-level

variation. In addition, I examined how the stigma of failure affects NGO social entrepreneurship entry. Model 5 in Table IV-3 presents the baseline model for NGO social entrepreneurship entry. I then proceed to Model 6 in Table IV-3 by adding the independent variable, the stigma of failure. As predicted, the model does not show a significant relationship between the stigma of failure and NGO social entrepreneurship entry (Odds ratio 0.44, $p > 0.1$). Combined these results support Hypothesis 2.

Next, I tested Hypothesis 3 predicting that the level of human capital will negatively moderate (a) the relationship between the stigma of failure and social entrepreneurial entry decisions, and (b) the relationship between the stigma of failure and revenue-generating social entrepreneurship entry decisions. In other words, I predict that individuals with high-levels of education are less sensitive to the stigma of failure for social entrepreneurship entry. In Model 1 of Table IV-4, I add the interaction term, *Stigma * Education*, to estimate how human capital affects social entrepreneurship. Results show a statistically significant interaction effect which is below one and signals that higher levels of education reduce the likelihood that individuals engage in social entrepreneurship entry (Odds ratio 0.62, $p<0.1$). Model 1 in Table IV-4 compared with Model 2 in Table IV-3, explains an additional 4% of the country-level variance for social entrepreneurship entry when comparing their pseudo-R^2s, which shows increasing model fit with the data.

In Model 2 of Table IV-4, I test how the interaction of stigma and levels of education affect revenue-generating social entrepreneurship entry decisions. Results reveal a statistically significant interaction effect that is below one (Odds ratio 0.51, $p<0.1$), which indicates that higher levels of education in conjunction with higher levels of stigma reduce revenue-generating social entrepreneurship entry. Model 2 in Table IV-4 compared with Model 4 in Table IV-3, explains an

additional 4% of the country-level variance for social entrepreneurship entry when comparing their pseudo-R^2s.

To evaluate and illustrate the effect size of the results, I graphed the marginal effects of the interactions in Figure IV-2. These depict changes in the predicted probability of the dependent variables for a unit change in the stigma of failure. The slopes in Figure IV-2 clearly show that individuals with low levels of education are more sensitive to the stigma of failure for both social entrepreneurship and revenue-generating types of social entrepreneurship entry decisions. Combined these results and graphs provide support for Hypothesis 3.

INSERT TABLE IV-3, IV-4 & FIGURE IV-2 ABOUT HERE

I conducted several robustness checks to confirm the findings. First, I tested whether the determinants of entry in the general population truly differ between entrepreneurs that pursue social (regardless of NGO or revenue type) and commercial entrepreneurship. In particular, I followed the study of Estrin et al. (2016) by changing the baseline category from the general population to the pools of entrepreneurs. In particular, social entrepreneurship entry is coded "1" and the baseline category of any start-up entry is coded "0." By doing so, this study can explore the role of institutions more explicitly on an individual's choice for social entrepreneurship entry against commercial entrepreneurship entry. Furthermore, an increasing number of studies emphasize the complexity of decision making in entrepreneurial entry and the need to consider both commercial and social entrepreneurship entry decisions concurrently (Battilana & Lee, 2014; Estrin et al., 2016).

Model 1 of Table IV-5 shows a positive effect of the stigma of failure on social entrepreneurship entry over commercial entrepreneurship entry (Odds ratio 6.04, $p<0.01$). This result shows that individuals in an environment with higher levels of stigma of failure have a greater likelihood to choose social entrepreneurship entry compared to commercial entrepreneurship entry. This result further supports the finding for Hypothesis 1 by showing that nations with a higher stigma of failure experience higher levels of social entrepreneurship entry.

Additionally, I re-examined Hypothesis 2 in Model 3 of Table IV-5. Results show that nations with a high stigma of failure experience more entry into revenue-generating social entrepreneurship rather than commercial entrepreneurship entry (Odds ratio 7.65, $p<0.01$). In addition, I could not find a statistically significant relationship between the stigma of failure and NGO- social entrepreneurship entry. These results bolster the finding for Hypothesis 2.

Next, I ran additional robustness tests to re-examine Hypothesis 3. Based on Model 1 in Table IV-5, I add the interaction term *stigma * education* in Table IV-5, Model 2 to see its effects on social entrepreneurship entry. The result shows a negative moderating effect where low levels of education in combination with higher levels of the stigma of failure reduce social entrepreneurship entry compared to commercial entrepreneurship entry (Odds ratio 0.22, $p<0.001$). Furthermore, in Table IV-5, Model 4, I repeat another robustness test to look at how the interaction term *stigma * education* affects revenue-generating social entrepreneurship entry in comparison to commercial entrepreneurship entry. The model reveals that individuals who have a lower level of education are more sensitive to the stigma of failure and have a greater likelihood to choose revenue-generating social entrepreneurship entry over commercial entrepreneurship entry (Odds ratio 0.24, $p<0.01$). These results clearly reinforce the findings for Hypothesis 3. The interaction graphs are displayed in Figure 3, which shows the marginal effects of the stigma of failure on the

predicted probability to be engaged social entrepreneurship or revenue-generating social entrepreneurship over commercial entry.

Second, despite the fact that most countries in the GEM dataset have approximately 2,000 observations, this is not the case for all countries in this study's sample. For example, Spain has over 16,414 observations. Accordingly, the large number of observations from outliers like Spain can potentially induce biased results. Thus, this study conducted a robustness check by excluding Spain from the main sample. As shown in Model 1 in Table IV-6, I found a statistically significant positive association between social entrepreneurship entry and the stigma of failure (Odds ratio 2.90, $p<0.05$). The result provides further support to Hypothesis 1. In addition, Model 3 in Table IV-6 shows a positive association between revenue-generating type social entrepreneurship entry and the stigma of failure (Odds ratio 6.87, $p<0.001$). This result strengthens the finding for Hypothesis 2. At the same time, Model 2 and 4 in Table IV-6 show the negative moderating effects of the level of education: for the social entrepreneurship entry (Odds ratio 0.58, $p<0.1$, Model 2 Table IV-6) and for the revenue-generating type social entrepreneurship entry (Odds ratio 0.48, $p<0.05$, Model 4 Table IV-6). These results further support Hypothesis 3 by showing that individuals with high-levels of education are less sensitive to the stigma of failure for social entrepreneurship entry decisions.

Third, I conducted additional robustness tests by including the GDP growth rate in the model. Model 1 in Table IV-7 shows that there is a statistically significant effect by the stigma of failure on social entrepreneurship entry decisions (Odds ratio 2.71, $p<0.05$). Further, Model 3 in Table IV-7 indicates a positive relationship between the stigma of failure and revenue-generating social entrepreneurship entry (Odds ratio 7.93, $p<0.01$). These results further support the Hypotheses 1 and 3. Moreover, I find that the moderation effect of the level of education on the stigma of failure

is negative and statistically significant for social entrepreneurship entry (Odds ratio 0.65, $p<0.1$, Model 2 Table IV-7), and revenue-generating social entrepreneurship entry (Odds ratio 0.52, $p<0.1$, Model 4 Table IV-7). These results suggest that individuals with a low-level of education are more sensitive to the stigma of failure for engaging in both social entrepreneurship and revenue-generating social entrepreneurship. Accordingly, these results further support the findings for Hypothesis 3.

INSERT TABLE IV-5, IV-6, IV-7 & FIGURE IV-3 ABOUT HERE

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5. DISCUSSION

This study sought to contribute to the literature on social entrepreneurship and entry decisions in the face of the stigma of failure. First, the study finds that the stigma of failure is positively associated with the likelihood of individuals' engagement in social entrepreneurship suggesting that stigma does impact social entrepreneurship entry decisions. Moreover, this analysis indicates that the stigma of failure has different effects depending on the extent to which social entrepreneurs seek to sustain themselves through sustainable profits or private and public subsidies. In particular, the stigma of failure has a positive association with entry decisions for revenue-generating social entrepreneurship, whereas it has no association with entry decisions for NGO social entrepreneurship. Although social entrepreneurship contains a diverse range of organizational forms (Lepoutre et al., 2013; Nicholls & Cho, 2006), social entrepreneurship researchers accept the broad definition of social entrepreneurship that includes the NGO-type of social entrepreneurship (Mair & Marti, 2006). In fact, the lack of a unified definition regarding social entrepreneurship has been a barrier to the advancement of scholarly research (Dees & Elias, 1998;

Short et al., 2009). However, this study suggests that national contexts can influence social entrepreneurship entry decisions differently depending on whether social entrepreneurship utilizes market mechanisms or not. Thus, this study contributes to recent calls for consideration of the context in examining social entrepreneurial behavior (Short et al., 2009; Zahra & Wright, 2011). In particular, this study fills a research gap in the conversation regarding determinants of social entrepreneurship entry decisions by being the first that I know that examines the stigma of failure.

Second, this paper contributes to real options theory by empirically testing the theory in a social entrepreneurship context while elaborating the relationship between institutional forces and the two real options of entry into commercial entrepreneurship or social entrepreneurship. By examining the impact of stigma, this study reveals how likely social entrepreneurship activity is to emerge in a country, and whether the links between commercial entrepreneurship and social entrepreneurship can be expected to support or impede the likelihood of addressing social problems with entrepreneurial solutions. In particular, the robustness test compares social entrepreneurship entry decision to commercial entrepreneurship entry decision and shows that individuals in an environment with a high level of the stigma of failure are more likely to engage in social entrepreneurship entry over commercial entrepreneurship entry. Further, this study highlights the importance of individuals' discretion over their career choices in electing to pursue either commercial entrepreneurship or social entrepreneurship given institutional factors. This dynamic of career choice merits more careful research in the future. Moreover, social entrepreneurship literature generally emphasizes compassion as a driver of social entrepreneurship entry motivation without sufficient consideration of rational reasoning (Grimes, McMullen, Vogus, & Miller, 2013; Miller et al., 2012). This study shows that real options logic, which is based on rational reasoning can explain social entrepreneurship entry decisions. Consequently, this study

underscores that social entrepreneurship researchers need to look at the impact of country-level predictors on the dynamism of individuals' career choices between commercial and social entrepreneurship entry decisions simultaneously, and that real options lens can be a proper tool to examine entrepreneurial entry decisions.

Third, this study makes a contribution to the stigma literature. Although the stigma of failure has been considered as a constraint to foster entrepreneurship (Landier, 2005), stigma can function as a driving force to reduce undesirable activities, generating positive consequences (Paetzold et al., 2008). Moreover, Damaraju et al. (2010) suggest an opportunity for future research to explore whether stigma could have a positive influence on entrepreneurial risk taking. This paper shows the positive consequence of the stigma of failure in social entrepreneurship entry decisions. Thus, this study responds to the call by providing an empirical grounding in that the stigma of failure has a positive association with entrepreneurial entry decisions in social entrepreneurship contexts.

6. LIMITATIONS AND FUTURE RESEARCH

This study is not without limitations. The first limitation relates to the generalizability of this study's data. Although this study accounts for over 50,000 individuals from 23 countries, this study's sample over represents middle and high-income countries compared to low-income countries. Thus, the variation in institutions is somewhat limited in this study. Moreover, the data for individuals' engagement in social entrepreneurship is available for only one year. Second, although the initial screening question mentions social, community, and environmental objectives, the examples of environmental entrepreneurship are omitted in the questionnaire. As such, this

study may constitute an under-representation of environmental social entrepreneurship. Third, social enterprises can be created outside of one's home country. This type of international social entrepreneurship is not represented in this study's data. I hope this analysis will be repeated on a larger sample of countries and more years of data. At the same time, I encourage future researchers to extend investigations into the impact of institutional forces and country differences on different types of social entrepreneurship.

7. CONCLUSION

Despite the limitations of this study, the use of multi-level regressions and control variables to ensure robustness enhance the confidence in the findings of this study. Based on the real options logic, the study shows that the stigma of failure is positively associated with social entrepreneurship entry decisions. Further, this study finds that stigma only affects entry decisions entrepreneurs that pursue revenue-generating social entrepreneurship and not NGO social entrepreneurship. Lastly, this study finds that human capital moderates the relationship between the stigma of failure and social entrepreneurship entry decisions by showing that individuals with low levels of education are more sensitive to stigma. As one of the first studies to examine the stigma of failure and its effects on social entrepreneurial behavior, this paper makes an important contribution to the field of social entrepreneurship research (Short et al., 2009).

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FIGURES AND TABLES FOR CHAPTER IV

Figure IV-1: Conceptual Framework: The Stigma of Failure and Social Entrepreneurial Entry

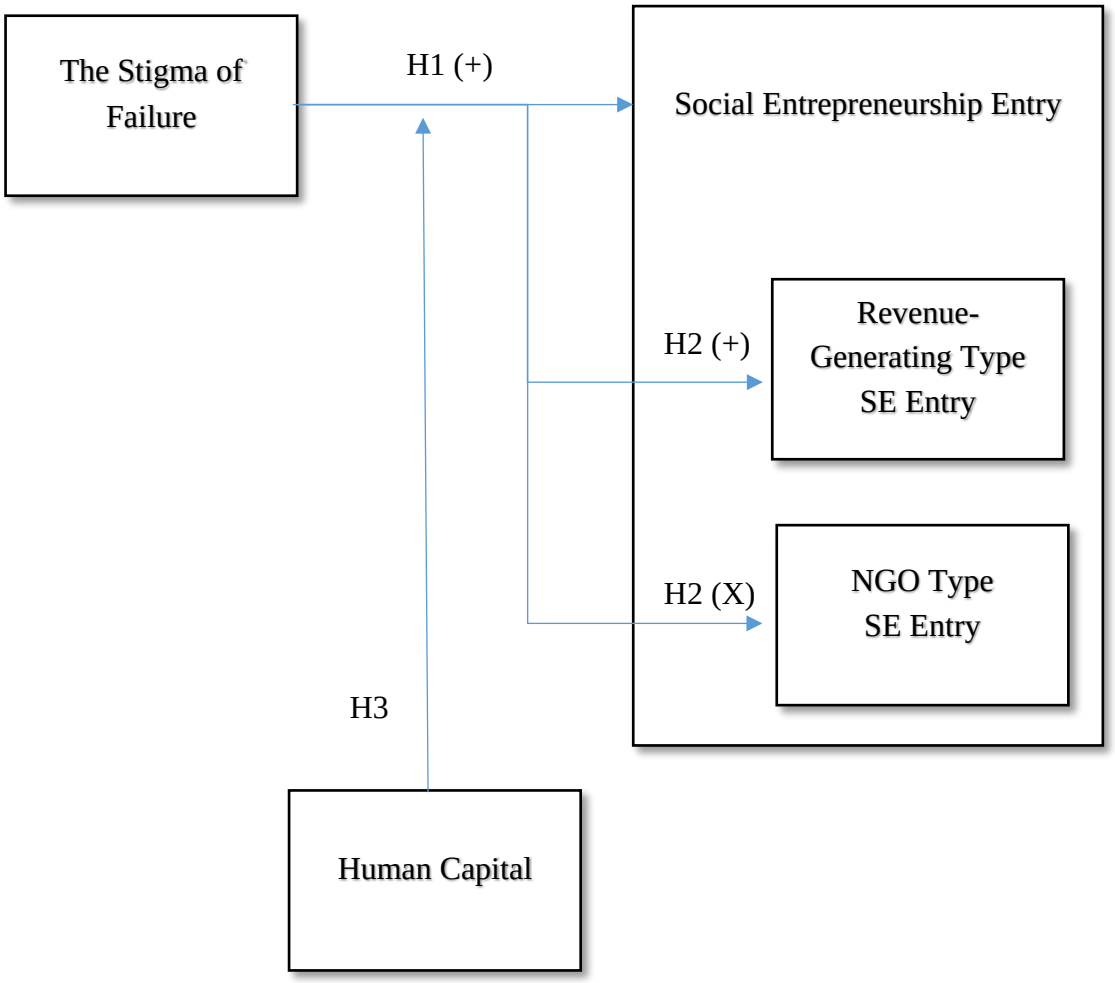


Table IV-1: Sample Descriptive

	Variable	Description	Source	Mean	S.D.	Min	Max
Country	GDP per capita PPP (t-1) (Log): GDP PPP	GDP per capita at purchasing power parity, constant at 2000 $USD	World Bank WDI 2008	10.15	0.747	7.78	11.13
	Government Size (t-1): GS	% of government spending / GDP	Heritage Foundation 2008	48.58	15.71	13.2	89.7
	Power Distance (t-1): PD	Degree of tolerance of social in equality (0: Low to 100: High)	Hofstede Index	49.53	15.53	13	93
	Rate of Recovery (t-1): RR	How many cents on the dollar claimants recover from an insolvent firm (0 to 100)	Heritage Foundation 2008	68.39	19.52	14.6	90.7
	Accessibility of Credit Information (t-1): ACI	the strength of credit reporting systems (O to 6)	World Bank D oing Business 2008	4.83	1.33	0	6
	Stigma of Failure: STG	% of people saying “no second chance for failed entrepreneurs” Weighted by using (-2,2) scale	Flash Euro Barometer	1.01	0.22	0.30	1.59
Individual	Age: AGE	Age of Respondents	GEM APS 2009	43.08	12.19	18	64
	Gender: GEN	Male =0, Female =1	GEM APS 2009	0.50	0.49	0	1
	Education: EDU	Education Level: 1 (> post-seco ndary), 0 (otherwise)	GEM APS 2009	0.42	0.49	0	1
	Financial Capital: FC	Household Income: 1 (top 33%), 0 (otherwise)	GEM APS 2009	0.47	0.49	0	1
	Social Capital: SC	Responses to the statement ‘I pe rsonally know someone who ha d started a business in the past t wo years’: Yes =1, No=0	GEM APS 2009	0.36	0.48	0	1
	Social Entrepreneurship Entry: SE Entry	Individuals who are engaged in social entrepreneurship activity at early stage	GEM APS 2009	0.02	0.14	0	1
	Revenue-generating Type SE Entry: REV SE Entry	Individuals who are engaged in revenue-generating type social e ntrepreneurship at early stage	GEM APS 2009	0.01	0.11	0	1
	NGO-Type social entrepreneurship Entry: NGO Entry	Individuals who are engaged in NGO-type social entrepreneurs hip at early stage	GEM APS 2009	0.01	0.08	0	1

Table IV-2: Correlation Matrix for Individual and Country-Level Variables

Individual Level

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	SE Entry	1.000							
(2)	REV SE Entry	0.488*	1.000						
(3)	NGO Entry	0.558*	0.022*	1.000					
(4)	AGE	-0.027*	-0.021*	-0.014*	1.000				
(5)	GEN	0.017*	0.020*	0.003	0.002	1.000			
(6)	EDU	0.042*	0.032*	0.030*	-0.050*	0.015*	1.000		
(7)	FC	0.028*	0.022*	0.017*	-0.041*	0.092*	0.237*	1.000	
(8)	SC	0.083*	0.070*	0.041*	-0.172*	0.107*	0.069*	0.101*	1.000

Country Level

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	SE Entry	1.000								
(2)	REV SE Entry	0.813*	1.000							
(3)	NGO Entry	0.558*	0.022*	1.000						
(4)	GDP PPP	0.001	0.001	0.004*	1.000					
(5)	GS	-0.013*	-0.008*	-0.009*	-0.570*	1.000				
(6)	PD	-0.036*	-0.026*	-0.021*	-0.625*	0.407*	1.000			
(7)	RR	-0.007*	-0.004	-0.002	-0.822*	-0.348*	-0.500*	1.000		
(8)	ACI	-0.001	-0.004	0.011	0.426*	-0.086*	-0.491*	0.535*	1.000	
(9)	STG	-0.002	0.008*	-0.016*	0.459*	-0.397*	-0.110*	0.331*	-0.185*	1.000

(* represents statistical significances at $p<0.05$)

Table IV-3: Regression Result for Social Entrepreneurship Entry (Odds Ratio)

	Model 1 (SE Entry)			Model 2 (SE Entry)			Model 3 (REV SE Entry)			Model 4 (REV SE Entry)			Model 5 (NGO Entry)			Model 6 (NGO Entry)		
	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.
Fixed Part																		
Individual Level (Control)																		
AGE	0.99	**	0.00	0.99	**	0.00	0.99	*	0.00	0.99	*	0.00	0.99		0.00	0.99	+	0.00
GEN	1.19	**	0.07	1.19	**	0.08	1.30	**	0.10	1.30	**	0.10	1.02		0.11	1.02		0.11
EDU	1.65	***	0.11	1.64	***	0.11	1.56	***	0.13	1.57	***	0.13	1.93	***	0.23	1.93	***	0.23
FC	1.10	*	0.05	1.09	*	0.05	1.08		0.06	1.09		0.06	1.09		0.08	1.09		0.08
SC	2.81	***	0.19	2.80	***	0.19	2.87	***	0.24	2.87	***	0.24	2.54	***	0.31	2.55	***	0.31
Country Level (Control)																		
GDP PPP	1.00		0.25	0.93		0.23	0.88		0.29	0.76		0.23	1.20		0.35	1.27		0.36
GS	0.99		0.01	1.00		0.01	1.00		0.01	1.01		0.01	0.99		0.01	0.99		0.01
PD	0.98	+	0.01	0.99	+	0.01	0.98	+	0.01	0.98	+	0.01	0.99		0.01	0.99		0.01
RR	0.99		0.01	0.99		0.01	1.01		0.01	1.01		0.01	0.99		0.01	0.99		0.01
ACI	0.98		0.08	1.03		0.09	0.92		0.10	1.01		0.10	1.01		0.09	0.96		0.09
Country Level (Independent)																		
STG				2.48	+	1.34				6.77	**	4.70				0.44		0.27
Random Part and Model Fit																		
Intercept	0.03		0.07	0.01	+	0.03	0.04		0.12	0.01		0.03	0.00	*	0.01	0.00	+	0.01
RCV	0.26			0.23			0.44			0.34			0.28			0.24		
Δ pseudo-R^2 (from null model)	0.25			0.34			0.21			0.39			0.17			0.29		
Deviance	9361.52			9358.70			6779.68			6771.94			3730.56			3728.90		
Intra-class correlation	0.073			0.067			0.117			0.094			0.077			0.069		
Wald Chi2	373.17			376.43			255.81			262.88			121.20			123.16		
Prob>Chi2	0.00			0.00			0.00			0.00			0.00			0.00		
LR Test Prob < chi2	0.00			0.00			0.00			0.00			0.00			0.00		
DoF	12			13			12			13			12			13		
# of Observation	51,022, 23countries			51,022, 23countries			51,022, 23countries			51,022, 23countries			51,022, 23countries			51,022, 23countries		
Obs per group min	385			385			385			385			385			385		
Obs per group avg	2,218			2,218			2,218			2,218			2,218			2,218		
Obs per group max	16,414			16,414			16,414			16,414			16,414			16,414		

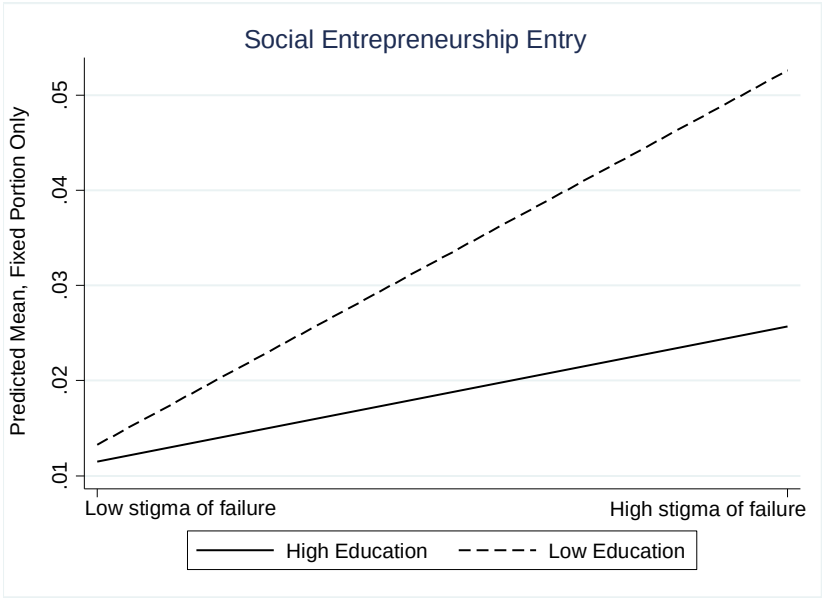
(***: p<0.001, **: p<0.01, *: p<0.05, ┼: p<0.1)

Note) RCV: Residual Country-level Variance

Table IV-4: Regression Result for the Moderating Role of Human Capital on Social Entrepreneurship Entry (Odds Ratio)

	Model 1 (SE Entry*Education)			Model 2 (REV SE Entry * Education)		
	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.
Fixed Part						
Individual Level (Control)						
AGE	0.99	**	0.00	0.99	*	0.00
GEN	1.19	**	0.08	1.30	**	0.10
EDU	2.68	**	0.79	3.11	**	1.12
FC	1.09	*	0.05	1.09		0.06
SC	2.80	***	0.19	2.88	***	0.24
Country Level (Control)						
GDP PPP	0.93		0.23	0.75		0.23
GS	1.00		0.01	1.01		0.01
PD	0.99	+	0.01	0.98	+	0.01
RR	0.99		0.01	1.01		0.01
ACI	1.04		0.09	1.02		0.10
Country Level (Independent)						
STG	3.07	*	1.68	9.04	**	6.32
STG * EDU	0.62	+	0.18	0.51	+	0.17
Random Part and Model Fit						
Intercept	0.01	+	0.03	0.01		0.03
RCV	0.22			0.32		
Δ pseudo-R^2 (from null model)	0.37			0.43		
Deviance	9355.86			6768.16		
Intra-class correlation	0.065			0.090		
Wald Chi2	379.64			266.91		
Prob>Chi2	0.000			0.00		
LR Test Prob < chi2	0.000			0.00		
DoF	14			14		
# of Observation	51,022, 23 countries			51,022, 23 countries		
Obs per group min	385			385		
Obs per group avg	2,218			2,218		
Obs per group max	16,414			16,414		
(***: p<0.001, **: p<0.01, *: p<0.05, ┼: p<0.1)						

Figure IV-2: Moderating Effect Graphs (Baseline = General Population)



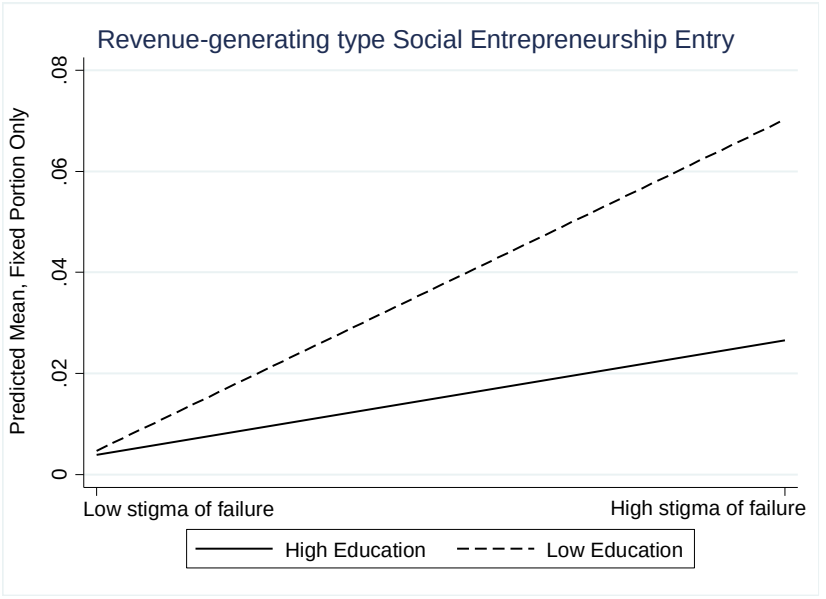
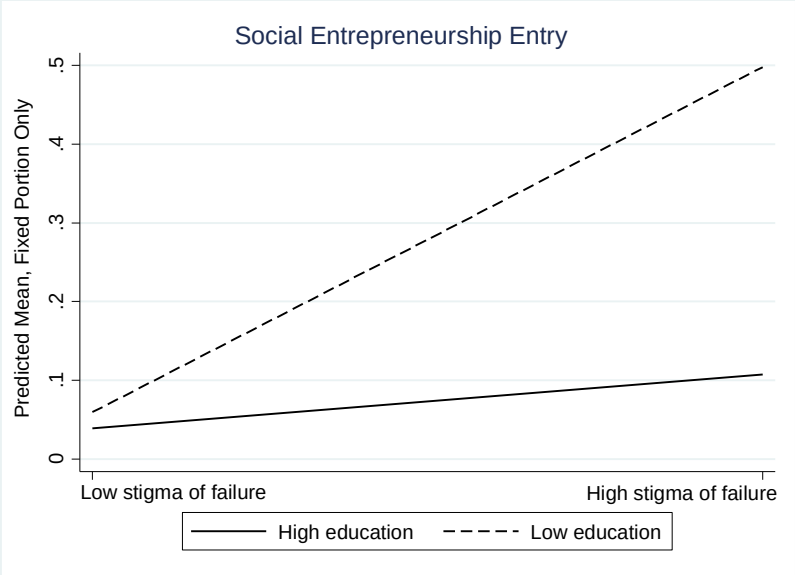


Table IV-5: Regression Result of Robustness Test: Changing the Baseline from General Population to Entrepreneurs (Odds Ratio)

	Model 1 (SE Entry) Baseline = Commercial entry			Model 2 (SE Entry) Baseline = Commercial entry			Model 3 (REV SE Entry) Baseline = Commercial entry			Model 4 (REV SE Entry) Baseline = Commercial entry		
	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.
Fixed Part												
Individual Level (Control)												
AGE	1.01	+	0.00	1.01	+	0.00	1.01		0.01	1.01	+	0.01
GEN	0.95		0.09	0.94		0.09	0.96		0.11	0.95		0.10
EDU	1.26	*	0.14	5.98	***	2.68	1.14		0.13	4.96	**	2.39
FC	0.92		0.06	0.91		0.06	0.92		0.06	0.92		0.06
SC	1.39	**	0.16	1.40	**	0.16	1.24	+	0.15	1.24	+	0.14
Country Level (Control)												
GDP PPP	0.92		0.25	0.90		0.24	0.96		0.28	0.95		0.26
GS	1.01		0.01	1.00	*	0.01	1.01		0.01	1.00		0.01
PD	0.99		0.01	0.99		0.01	0.99		0.01	0.99		0.01
RR	0.99		0.01	0.99		0.01	0.99		0.01	0.99		0.01
ACI	1.06		0.10	1.09		0.09	1.08		0.10	1.09		0.10
Country Level (Independent)												
STG	6.04	**	3.77	11.0	***	6.81	7.65	**	4.99	13.2	***	8.54
STG * EDU				0.22	***	0.09				0.24	**	0.11
Random Part and Model Fit												
Intercept	0.04		0.12	0.02		0.04	0.04		0.12	0.01		0.03
RCV	0.24			0.20			0.25			0.21		
Δ pseudo-R^2 (from null model)	0.51			0.56			0.48			0.56		
Deviance	2823.82			2811.44			2559.74			2550.28		
Intra-class correlation	0.068			0.059			0.070			0.061		
Wald Chi2	28.39			41.46			19.67			29.77		
Prob>Chi2	0.00			0.00			0.05			0.00		
LR Test Prob < chi2	0.00			0.00			0.00			0.00		
DoF	13			14			13			14		
# of Observation	4,481, 22 countries			4,481, 22 countries			4,481, 22 countries			4,481, 22 countries		
Obs per group min	21			21			21			21		
Obs per group avg	203.7			203.7			203.7			203.7		
Obs per group max	873			873			873			873		
(***: p<0.001, **: p<0.01, *: p<0.05, ┼: p<0.1)												

Figure IV-3: Moderating Effect Graphs (Baseline = Commercial Entry)



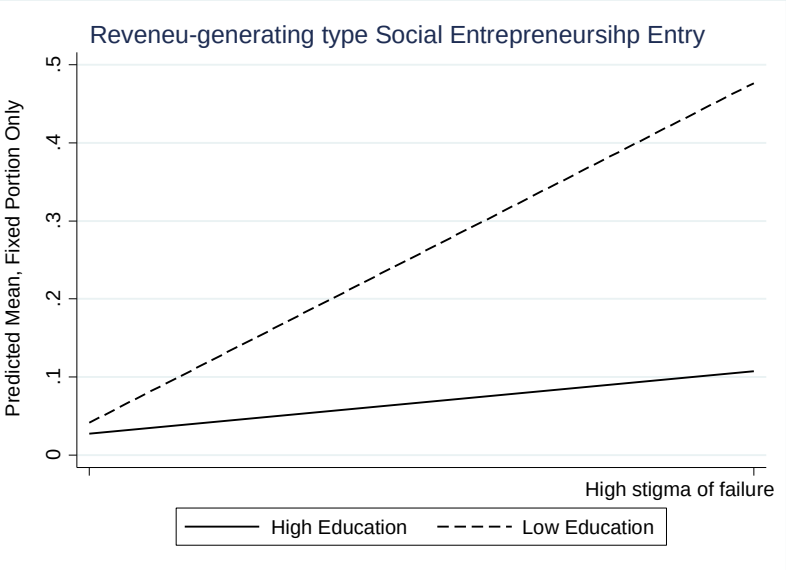


Table IV-6: Regression Result of Robustness Test: Excluding Spain (Odds Ratio)

	Model 1 (SE Entry)			Model 2 (SE Entry)			Model 3 (REV SE Entry)			Model 4 (REV SE Entry)			Model 5 (NGO Entry)			Model 6 (NGO Entry)		
	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.
Fixed Part																		
Individual Level (Control)																		
AGE	0.99	**	0.00	0.99	**	0.00	0.99	+	0.00	0.99		0.00	0.99	+	0.00	0.99	+	0.00
GEN	1.22	**	0.08	1.22	**	0.08	1.32	**	0.11	1.32	**	0.11	1.05		0.12	1.05		0.12
EDU	1.64	***	0.12	2.82	***	0.83	1.55	***	0.14	3.29	**	1.18	1.95	***	0.24	2.13		1.09
FC	1.07		0.05	1.07		0.05	1.07		0.06	1.06		0.06	1.06		0.08	1.06		0.08
SC	2.73	***	0.20	2.73	***	0.20	2.86	***	0.26	2.87	***	0.26	2.33	***	0.29	2.33	***	0.29
Country Level (Control)																		
GDP PPP	0.97		0.18	0.96		0.18	0.82		0.19	0.81		0.19	1.29		0.28	1.29		0.28
GS	1.01		0.01	1.00	*	0.01	1.01	*	0.01	1.01	*	0.01	1.00		0.01	1.00		0.01
PD	0.99		0.01	0.99		0.01	0.99		0.01	0.99		0.01	0.99		0.01	0.99		0.01
RR	0.99		0.01	0.99		0.01	1.01		0.01	1.00		0.01	0.99		0.01	0.99		0.01
ACI	1.08		0.07	1.08		0.07	1.07		0.09	1.07		0.08	1.00		0.09	1.00		0.08
Country Level (Independent)																		
STG	2.90	*	1.22	3.67	**	1.57	6.87	***	3.79	9.31	***	5.16	0.59		0.29	0.62		0.33
STG * EDU				0.58	+	0.16				0.48	*	0.16				0.91		0.47
Random Part and Model Fit																		
Intercept	0.01	**	0.01	0.00	**	0.01	0.00	*	0.01	0.00	*	0.01	0.00	**	0.00	0.00	**	0.00
RCV	0.13			0.12			0.18			0.16			0.32			0.29		
Δ pseudo-R^2 (from null model)	0.46			0.50			0.60			0.64			0.06			0.14		
Deviance	8222.26			8218.68			5934.54			5929.94			3365.74			3365.70		
Intra-class correlation	0.036			0.034			0.053			0.048			0.031			0.030		
Wald Chi2	329.11			333.25			234.99			240.23			101.36			101.52		
Prob>Chi2	0.00			0.00			0.00			0.00			0.00			0.00		
LR Test Prob < chi2	0.00			0.00			0.00			0.00			0.00			0.00		
DoF	13			14			13			14			13			14		
# of Observation	34,608, 22countries			34,608, 22countries			34,608, 22countries			34,608, 22countries			34,608, 22countries			34,608, 22countries		
Obs per group min	385			385			385			385			385			385		
Obs per group avg	1,573			1,573			1,573			1,573			1,573			1,573		
Obs per group max	10,533			10,533			10,533			10,533			10,533			10,533		

(***: p<0.001, **: p<0.01, *: p<0.05, ┼: p<0.1)

Table IV-7: Regression Result of Robustness Test: Including GDP growth (Odds Ratio)

	Model 1 (SE Entry)			Model 2 (SE Entry)			Model 3 (REV SE Entry)			Model 4 (REV SE Entry)			Model 5 (NGO Entry)			Model 6 (NGO Entry)		
	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.	O.R.	Sig.	S.E.
Fixed Part																		
Individual Level (Control)																		
AGE	0.99	**	0.00	0.99	**	0.00	0.99	*	0.00	0.99	*	0.00	0.99	+	0.00	0.99	+	0.00
GEN	1.19	**	0.08	1.19	**	0.08	1.31	**	0.10	1.30	**	0.10	1.02		0.12	1.02		0.12
EDU	1.65	***	0.11	2.67	**	0.79	1.57	***	0.13	3.09	**	1.12	1.93	***	0.23	1.95		1.02
FC	1.09	*	0.05	1.09	*	0.05	1.09		0.06	1.09		0.06	1.09		0.08	1.09		0.08
SC	2.80	***	0.19	2.81	***	0.20	2.87	***	0.24	2.88	***	0.24	2.55	***	0.31	2.55	***	0.31
Country Level (Control)																		
GDP PPP	0.88		0.25	0.89		0.25	0.69		0.24	0.69		0.24	1.22		0.41	1.22		0.41
GDP GROWTH	0.98		0.06	0.98		0.06	0.96		0.07	0.97		0.07	0.98		0.06	0.98		0.07
GS	1.00		0.01	1.01		0.01	1.01		0.01	1.01		0.10	0.99		0.01	0.99		0.01
PD	0.99	+	0.01	0.99	+	0.01	0.98		0.01	0.98	+	0.01	0.99		0.01	0.99		0.01
RR	0.99		0.01	0.99		0.01	1.01		0.01	1.01		0.01	0.99		0.01	0.99		0.01
ACI	1.05		0.09	1.05		0.09	1.04		0.11	1.04		0.11	0.97		0.10	0.97		0.10
Country Level (Independent)																		
STG	2.71	*	1.57	3.31	*	1.94	7.93	**	6.03	10.3	**	7.91	0.47		0.31	0.47		0.34
STG * EDU				0.65	+	0.18				0.52	+	0.18				0.98		0.52
Random Part and Model Fit																		
Intercept	0.02		0.06	0.02		0.05	0.02		0.07	0.02	***	0.00	0.00	+	0.00	0.00	+	0.01
RCV	0.24			0.22			0.34			0.32			0.24			0.24		
Δ pseudo-R^2 (from null model)	0.33			0.38			0.40			0.44			0.29			0.29		
Deviance	9358.54			9355.74			6771.64			6767.92			3728.86			3728.86		
Intra-class correlation	0.067			0.065			0.094			0.090			0.069			0.069		
Wald Chi2	376.60			379.75			262.96			266.91			121.48			121.50		
Prob>Chi2	0.00			0.00			0.00			0.00			0.00			0.00		
LR Test Prob < chi2	0.00			0.00			0.00			0.00			0.00			0.00		
DoF	14			15			14			15			14			15		
# of Observation	51,022, 23countries			51,022, 23countries			51,022, 23countries			51,022, 23countries			51,022, 23countries			51,022, 23countries		
Obs per group min	385			385			385			385			385			385		
Obs per group avg	2,218			2,218			2,218			2,218			2,218			2,218		
Obs per group max	16,414			16,414			16,414			16,414			16,414			16,414		

(***: p<0.001, **: p<0.01, *: p<0.05, ┼: p<0.1)

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