Do Gendered Social Institutions and Resources Promote Women's Entrepreneurial Intentions? A Multi-Country Study.

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Abstract

Women’s entrepreneurship has garnered substantial research interest over the years. The majority of the previous research investigates nascent entrepreneurship rate, while fewer studies investigate entrepreneurial intentions. This study focuses on the relationship between women's entrepreneurial intentions and institutional and personal variables. This study uses data from Global Entrepreneurship Monitor and Social Institutions and Gender Index databases and covers 43 countries. Both factor analysis and linear regression methodologies are employed. The results show that if women possess higher levels of entrepreneurial skills, have lower levels of fear of failure, and greater social networks, they are more likely to have entrepreneurial intentions. However, the more women have access to land, bank loans, and property other than land, the less likely they desire to become entrepreneurs. Also, social services for women's careers and fair entrepreneurial opportunities for women do not have significant impacts on women's entrepreneurial intentions. The theoretical and empirical implications of the results are discussed.

Contents

1. Introduction

Understanding the phenomenon of enterprise creation and growth has a long history in academic research (e.g., Kirzner, 1978; Leibenstein, 1968; Schumpeter, 1961). Over the last twenty-five years, the entrepreneurship literature has grown substantially with researchers exploring a wide array of issues ranging from opportunity recognition to entrepreneurial intentions to starting, managing and growing a new enterprise and the factors (e.g., personal characteristics, social-cultural norms, and institutions) that influence the survival, growth, competitiveness and sustainability of these enterprises (Audretsch et al., 2006; Liñán & Chen, 2009; Porter, 1993; Porter et al., 2001).

One stream of research that has recently garnered substantial interest from both academics and policy-makers focuses on women's entrepreneurship because some researchers have recognized that many of the issues that affect entrepreneurship usually also have a gender dimension to them (Baughn et al., 2006; Brush, 1997; Elam & Terjesen, 2010; Pathak et al., 2013). For example, stereotypical images of entrepreneurs are closer to male characteristics and women are less expected to be entrepreneurs (Chasserio et al., 2014). Also, women entrepreneurs also have other social identities such as wives and mothers, which could lead to the thinking that women's role are to be caregivers or homemakers rather than a business owner. The interactions of different identities may impair or enhance the women entrepreneurial activities (Chasserio et al., 2014).

Focusing specifically on how these factors affect women enterprises could reveal insights that could deepen our understanding of not only women's entrepreneurship but entrepreneurship generally (De Bruin et al., 2007). The factors that have been discussed include institutional level factors and individual level factors. Institutional level factors describe the institutional environment for entrepreneurship, such as educational capital and regulatory protection (Bowen & De Clercq, 2008). Individual level factors describe individual characteristics that are related to entrepreneurial activities, such as employment status and fear of failure (Ardagna & Lusardi, 2008).

Many studies have investigated how institutional and individual level factors influence nascent entrepreneurship (e.g. Driga et al., 2009; Elam, 2006; Van et al., 2012), and some

studies even use nascent entrepreneurship synonymously to entrepreneurial intention (Thompson, 2009). However, there is a distinction between entrepreneurial intention and nascent entrepreneurship. Having an entrepreneurial intent means a person intends to be self-employed and plans to start a business, while nascent entrepreneurship means that a person is already actively involved in setting up a new business (Thompson, 2009). This study focuses on how entrepreneurial intention is affected by different institutional and individual level factors.

This thesis aims to contribute to the literature on women's entrepreneurship. The focus is on the key socio-cultural factors, which encourage or inhibit women's entrepreneurial intentions. In addition, the analysis examines whether these factors are stable across countries with different levels of economic development, that is, whether these factors influence women differently depending on the level of economic development of the country. Specifically, the question addressed in this thesis is: Do women-specific institutional and individual factors influence women's entrepreneurial intentions?

In this research, socio-cultural factors are considered as institutions (Veciana, 2007), which influence the intentions of women to start new businesses. Specifically, the factors (independent variables) considered in this study are gendered institutions, gendered resources, and women's entrepreneurial readiness. The control variable is GDP per capita, which represents how much gross domestic product (GDP) is allocated to each person of the country. GDP per capita is a commonly used and powerful indicator of economic development level (Jahic, 2009).

This study is significant for several reasons. First, this study responds to the call for more academic research on women's entrepreneurship that are based on women-only samples (Bird and Brush, 2002) in a multi-country context (De Bruin et al., 2007) and focusing on gendered institutions (Baughn et al., 2006; DeTienne & Chandler, 2007). These scholars argue that this type of research could provide insights into the social aspects of women's entrepreneurship (Davidsson, 2003), which contrasts with prior studies that tend to underestimate the influence of external factors and overestimate the influence of internal or personal factors (Gartner, 1995).

Second, the influence of socio-cultural factors on entrepreneurship is an understudied area requiring more analysis and insight in order to promote a deeper understanding of their impact on entrepreneurial intentions. As noted by Thornton et al., (2011), most studies on entrepreneurship research have focused on economic factors, the business environment, and the personal characteristics of entrepreneurs. Even those studies that have addressed socio-cultural issues have tended to use fairly narrowly defined variables and constructs in the analyses. This study will contribute to this literature since the focus is on social institutions directly affecting women's entrepreneurship.

Third, this research complements and extends the literature on women's entrepreneurship by providing fresh insights based on the most recent data available from the Global Entrepreneurship Monitor and the Social Institutions and Gender Index.

Examples of studies on women's entrepreneurship were undertaken almost a decade ago (e.g. Caputo & Dolinsky, 1998; Baughn, 2006; Heilman & Chen, 2003) and since these studies are conducted, the world has experienced a major financial crisis in 2008, which led to extremely tight credit markets. Essentially, raising capital for new ventures or even to grow existing businesses became extremely difficult to achieve, especially for small and vulnerable women's businesses (Pines et al., 2010). This study focuses on the period after financial crisis (from 2008 to 2012).

The remainder of this thesis is structured into the following sections. Section 2 presents a review of the literature particularly with respect to women's entrepreneurship. Section 3 discusses the theoretical framework and hypotheses, which will guide the study. Section 4 describes the research methodology, specifically the data and analytical approach utilized in the study. Section 5 presents the results and robustness check. Section 6 concludes the research and outlines future implications.

2. Literature review

Entrepreneurship research is organized around and based upon four broad theoretical foundations – economic, managerial, psychological, and socio-cultural (Veciana, 2007). The economic approach is based on models which assume that firms are established and managed with economic rationality. The managerial approach, which is akin to the economic

approach, is based on the assumption that people establish new businesses in accordance with the principles of economics and business administration and that they make rational decisions. The psychological approach focuses on the personal traits, attributes and characteristics of entrepreneurs, which motivates them to start new businesses. The socio-cultural approach postulates that entrepreneurs create new businesses under restrictions of external environmental factors or institutions, which could be economic, political, social, cultural, technological, and regulatory in nature (Veciana, 2007). Within these four approaches, Veciana (2007) categorized studies as either individual-, corporate-, or national-level focused.

Since the aim of this study is to assess the impact of socio-cultural factors on women's entrepreneurial intentions across multiple countries with varying levels of economic development, this literature review will focus primarily on both the theoretical and empirical literature covering these aspects. The synthesis of this stream of research will also provide the building blocks for the conceptual model and analytical techniques utilized in this study.

The review begins with a general overview of several key multi-country studies as outlined in Table 1 below and then provides a more detailed discussion of the influence of institutional factors on entrepreneurship, particularly women's entrepreneurship.

Table 1 summarizes 18 cross-country empirical studies on institutions and entrepreneurship. Specifically, these studies examine the influence of institutional environments, gender differences, individual characteristics, and economic development levels on entrepreneurship. The most commonly employed theoretical frameworks are institutional theory and social network theory, which were employed in seven studies. Other theoretical frameworks employed include economic development theory, feminist theory, and the theory of planned behavior.

In terms of dependent variables, the most commonly used variable is nascent entrepreneurship rate, which focuses on the start-up phase of new enterprises. Four studies use total entrepreneurship activity (TEA), three use gender differences in entrepreneurship, and three use entrepreneurial intentions. Other variables used to a lesser extent include entrepreneurial cognitions and type of entrepreneurial activities.

In terms of independent variables, there are around 94 variables that cover individual and institutional characteristics. Individual characteristics include demographics (age, gender, employment status, education level, income level), social resources, attitudes towards entrepreneurship (fear of failure, self-confidence in entrepreneurial skills, perceived self-efficacy, attitude towards venturing, venturing likelihood), and entrepreneurial intention (subjective norm, perceived behavioral control). Institutional characteristics include economic development level (Gross Domestic Product, Gross National Income), gender differences (gender equality, norms for female entrepreneur, gender wage inequality, violence against women, maternity leave coverage, female labor share), and entrepreneurship environment (level of taxation, degree of openness, regulatory protection, regulatory complexity, financial capital, educational capital, corruption). Many of these variables play an important role in explaining cross-national difference of nascent women's entrepreneurship, which will be explained further in section 2.2 and section 2.3.

The most widely used statistical methods are linear and logistic regressions used by 16 of the 18 studies. A few studies used MANOVA discriminant analysis, and cluster analysis. The number of countries included in prior multi-country studies ranged widely from 2 to 55. Data was drawn from 21 main data sources, including public databases and surveys from the study. Some studies use data from a single database, while some studies use data from multiple databases. The most frequently used database is the Global Entrepreneurship Monitor (GEM) (16 studies). However, 10 studies use data from multiple secondary databases in order to assess other dimensions not covered in any one single source. For example, GEM provides data on entrepreneurship, the World Development Indicators (WDI) provides data on national economic aspects, the World Competitiveness Yearbook (WCY) provides data on the labor market, and the Social Institutions and Gender Index (SIGI) provides data on gender issues. When multiple sources are combined, the studies provide greater insights not possible from single sources.

Table 1. Summary of empirical studies on institutions and entrepreneurship

Paper	Type of study	Variables	Research design
Ardagna & Lusardi (2008)	Examine the influence of individual characteristics and regulation on entrepreneurship.	Dependent variable: entrepreneurship rate; Independent variables: individual, macroeconomic and institutional characteristics	Logistic regression Nations: 37 Data: GEM, Doing Business, Index of Economic Freedom, International Country Risk Guide
Baughn et al. (2006)	Examine the influence of institutional support, gendered equality, and economic development on female entrepreneurship rate. Theory: Institutional theory	Dependent variables: total entrepreneurial activity (TEA), female/male TEA; Independent variables: Gross Domestic Product(GDP), general entrepreneurial norms, gender equality, norms for female entrepreneur	Multiple regression Nations: 38 Data: GEM, Human Development Report (HDR), WDI, Global Competitiveness Report (GCR)
Bowen & De Clercq (2008)	Examine the influence of institutional environment on the type of entrepreneurial activities.	Dependent variable: proportion of high-growth entrepreneurship; Independent variables: financial and educational capital, regulatory protection and complexity, corruption	Grouped data Logit modeling Nations: 40 Data: GEM, World Economic Forum
De Clercq et al. (2010)	Examine the influence of institutional burdens on business creation in emerging nations. Theories: network and institutional theories	Dependent variables: New business activity, associational activity; Independent variables: institutional burdens (e.g., regulatory, cognitive, and normative)	Grouped data Logit modeling Nations: 14 Data: GEM, World Values Surveys (WVS)
Driga et al. (2009)	Examine the influence of institutions on female and male entrepreneurship in rural area. Theories: institutional theory and institutional profile	Dependent variable: Nascent entrepreneurial activity level; Independent variable: age, education level, self-confidence in entrepreneurial skills, role model, social fear of entrepreneurial failure	A rare events logit regression Nation: Spain (rural men and women) Data: GEM

Elam (2006)	Examine the gender entrepreneurial difference across nations. Theory: Contemporary social theory	Dependent variable: nascent entrepreneurship; Independent variables: measures of capital resources (10 individual-level and 4 country-level)	Two-level random coefficient logistic regression Nations: 28 Data: GEM, HDR, WDI, International Social Survey Programme
Elam & Terjesen (2010)	Examine the influence of cultural institutions on gendered entrepreneurship. Theories: Institutional and feminist theory	Dependent variable: nascent entrepreneurship; Independent variables: gender wage inequality, female business leadership, public childcare expenditures	Two-level random coefficient logistic regression Nations: 11 Data: GEM
Estrin & Mickiewicz (2011)	Compare the influence of institutions on the business aspiration of both sexes. Theory: Institutional theory.	Dependent variables: start-up and high growth aspiration start-up; Independent variables: institutional characteristics, individual aspirations	Multi-level regression Nations: 55 Data: GEM, Heritage Foundation, Organization for Economic Co-operation and Development, Economist Intelligence Unit
Lafuente et al. (2007)	Examine the influence of entrepreneurial role models on the entrepreneurial process in rural areas in Spain. Theory: socio-cultural institutional theory.	Dependent variables: entrepreneurial intention, pre-and post-start-up entrepreneurial activity; Independent variables: demographics, self-confidence in entrepreneurial skills, social fear for entrepreneurial failure, personal knowledge of a recent entrepreneur	Rare Events logit model Nation: Spanish rural area. Data: GEM.
Liñán & Chen (2009)	Analyze the psychometric properties of entrepreneurial intention. Theory: theory of planned behavior.	Dependent variable: entrepreneurial intention; Independent variables: personal attitude, subjective norm, perceived behavioral control	Regression Nations: 2 Data: Entrepreneurial Intention Questionnaire

Minniti & Nardone (2007)	Examine the influence of socio-economic and individual characteristics on business start-up decision.	Dependent variable: propensity to start a business; Independent variables: social and perceptual characteristics, economic environment	Bootstrapping Nations: 37 Data: GEM
Mitchell et al. (2002)	Examine the universality of entrepreneurial cognitions among countries.	Variables: Ability cognitions, willingness cognitions, arrangement cognitions; Descriptive variables: age, sex, education; Psychographic variables: attitude towards venturing and venturing likelihood	MANOVA discriminant and cluster analysis Nations: 11 Data: Survey
Pathak et al. (2013)	Examine the influence of gendered institutions on female entrepreneurship. Theory: Sociology theory	Dependent variables: rates of nascent and new women entrepreneurs; Independent variables: individual-level attitudes and cognitions; country-level gendered institutions	Multi-level logistic regression Nations: 53 Data: GEM, Global Gender Gap Index
Ramos-Rodríguez et al. (2012)	Examine the influence of certain factors on hotel and restaurant (H&R) entrepreneurship. Theories: psychological and institutional theories.	Dependent variable: early-stage H&R entrepreneur; Independent variables: demographic, economic, perceptions of environment, personal traits, individual's intellectual and social capital	Logistic regression 2008 GEM project participating nations
Van et al. (2003)	Study of nascent entrepreneurship from economic development, innovative capacity index, eclectic framework approaches.	Dependent variable: Nascent entrepreneurship; Independent variables: per capita income, GCR Innovative Capacity Index, regulatory factors, economic factors	Regression Nations: 36 Data: GEM, Innovative Capacity Index, WDI, GCR, WCY, and International Data Base
Van et al. (2012)	Examine the influence of government intervention on entrepreneurship. 2 models tested.	Dependent variables: model 1: nascent entrepreneurship rate, model 2: young business entrepreneurship rate; Independent variables:	Two-equation model Nations: 39 Data: GEM, WCY, International Monetary Fund, and GCR

		model 1: supply side of entrepreneurship, government intervention, model 2: nascent entrepreneurship rate, supply and demand side of entrepreneurship, government intervention	
Verheul et al. (2004)	Examine the national-level influence on female and male entrepreneurship.	Dependent variables: TEA, female/male TEA, female share in TEA; Independent variables: R&D expenditure, per capita income, unemployment, service employment, informal sector, female labor share, communist country, importance family, maternity leave coverage, life satisfaction	Multiple regression Nations: 29 Data: GEM, WCY, GCR, WDI, WVS, European Values Surveys
Wennekers et al. (2005)	Examine the U-shape relationship between entrepreneurial dynamics and economic development level.	Dependent variable: TEA; Independent variables: Gross National Income, GCR Innovation Capacity Index	Regression Nations: 36 Data: GEM

Table 2 summarizes the key findings from the 18 studies in Table 1. Overall, the evidence suggests that institutional environments, individual characteristics, gender differences, and economic development levels affect entrepreneurship development. Institutions such as financial and educational capital, regulatory complexity, regulatory protection, and corruption affect entrepreneurship generally (Bowen & De Clercq, 2008) as well as the entry into entrepreneurship of both men and women (Elam, 2006; Elam & Terjesen, 2010), where the influence is often in the same direction (Verheul et al., 2004). In addition, minimum capital requirements, labor market regulations (Van et al., 2012) and the size of the state sector (Estrin & Mickiewicz, 2011) are negatively related with the establishment of new businesses.

In terms of social capital and social networks, the literature shows that being part of social networks (De Clercq et al., 2010) positively influence entrepreneurship as well as the

existence of a strong entrepreneurial tradition with role models (Lafuente et al., 2007). In terms of individual characteristics, working status, business skills, attitudes toward risk, social network (Ardagna & Lusardi, 2008), social capital, intelligence level (Ramos-Rodríguez et al., 2012), perception of business opportunity (Minniti & Nardone, 2007), and cognition towards entrepreneurship (Mitchell et al., 2002) influence the decision of becoming an entrepreneur. Also, women are involved less in entrepreneurial activities and are less confident about their entrepreneurial capabilities than men (Driga et al., 2009).

Table 2. Findings of empirical studies on institutions and entrepreneurship

Study	Main findings
Ardagna & Lusardi (2008)	Regulations influence entrepreneurship through social networks, working status, business skills, and attitudes toward risk.
Baughn et al. (2006)	Institutions' support for females is positively related to the proportion of female entrepreneurship, and gender equality. The proportion of female entrepreneurship is inversely proportional to the level of economic development.
Bowen & De Clercq (2008)	The levels of financial capital, educational capital, and regulatory protection are positively, while level of regulatory complexity and corruption are negatively related with the proportion of high-growth entrepreneurship.
De Clercq et al. (2010)	National associational activity is positively related with new business activity. The relationship is enhanced if regulatory and normative institutional burdens are high, and weakened if cognitive institutional burdens are low.
Driga et al. (2009)	In Spanish rural areas, women participate less in entrepreneurial activities and are less confident about their entrepreneurial capabilities than men.
Elam (2006)	Both individual-level and national-level characteristics influence gendered nascent entrepreneurship.
Elam & Terjesen (2010)	Gendered institutions play an important role in the entry into entrepreneurship of men and women.
Estrin & Mickiewicz (2011)	The size of the state sector is negatively related, while the rule of law has no relation with the likelihood of female entrepreneurial activity.
Lafuente et al. (2007)	A strong entrepreneurial tradition and many entrepreneurial role models increase the entrepreneurial activity level in rural Catalonia.
Liñán & Chen (2009)	Empirical evidence from two culturally different countries (Spain and Taiwan) supports the entrepreneurial intention model.
Minniti & Nardone (2007)	Perceptual variables (opportunity perception and perception of having skills suitable for successful entrepreneurship) explain gender differences of entrepreneurial behavior, while socio-economic conditions do not.
Mitchell et al. (2002)	Cognition towards entrepreneurship is different between entrepreneurs and non-entrepreneurs across countries

Pathak et al. (2013)	The more opportunities are provided for women to participate in economic activities, the more women choose to enter into entrepreneurship.
Ramos-Rodríguez et al. (2012)	Certain demographic, economic, perceptual, intellectual and social capital factors play an important role in explaining why an individual chooses to be an entrepreneur.
Van et al. (2003)	The relationship between level of entrepreneurship and economic development is U-shaped.
Van et al. (2012)	Minimum capital requirements and labor market regulations negatively impact the establishment of new businesses in different countries.
Verheul et al. (2004)	Conditions in a country (e.g., technological, economic, demographic, institutional/policy, and cultural) impact female and male entrepreneurial activity generally in the same direction. Life satisfaction is positively related to female but not male entrepreneurship.
Wennekers et al. (2005)	The relationship between the level of entrepreneurship and economic development is U-shaped.

2.1. Entrepreneurial Intentions

According to Thompson (2009), the intention of individuals to set up new businesses is a fundamental and frequently used construct in research on entrepreneurship. It has been used as a dependent or independent variable in numerous studies. However, although there are no universal definition and set of metrics to measure individual entrepreneurial intent, researchers continue to use the construct. Thompson (2009) suggests that there are many factors that influence an individual's intent to establish of a new business, such as personal family and educational background (Carsrud et al., 1987), personal ability to recognize new business opportunities (Busenitz & Lau, 1996; Choi & Shepherd, 2004; Mitchell et al., 2000), and entrepreneurial environmental factors at both institutional and individual levels (Hunger et al,, 2002; Korunka et al., 2003; Westlund & Bolton, 2003). The studies listed in Table 1 above also reported similar results.

The individual entrepreneurial intent is conceptualized as a self-acknowledged conviction by a person who intends to be self-employed and consciously plans to achieve this goal in the near future (Thompson, 2009). However, the notion that the future point might be imminent or indeterminate, may never be reached or those with entrepreneurial intent may never actually set up a new business because of personal circumstances and environmental

factors (Katz & Gartner, 1988) underscores the challenges associated with this construct. Nevertheless, the measurement approach used by GEM to distinguish those individuals with entrepreneurial intent versus nascent entrepreneurs is practical and instructive. In the GEM schema, nascent entrepreneurs are individuals who have created a business which has been in existence for a period of time (less than 42 months) as opposed to "those possessing only entrepreneurial intent insofar as they are actively engaged in activities regarded as indicative of formally and reasonably imminently setting up a new firm" (Thompson, 2009, p. 676).

The Theory of Planned Behaviour (Ajzen, 1991) has also been used in the entrepreneurship literature as a basis for explaining entrepreneurial intentions ((Liñán and Chen, 2009). The so-called entrepreneurial intentions model states that personal entrepreneurial intention is influenced by personal attitude, subjective norms, and perceived behavioural control. In particular, personal attitude refers to the extent to which a person has a positive or negative evaluation and appraisal of being an entrepreneur. Subjective norms measure the perceived social pressure of being an entrepreneur. For example, in some societies, being self-employed is not considered to be a desirable career for a woman. Perceived behavioural control refers to the perception of ease or difficulty of being an entrepreneur, which reflects the "past experience" and "anticipated impediments and obstacles" (Ajzen, 1991). Essentially, attitudes influence beliefs which in turn influence intentions and ultimately behaviour - conducting entrepreneurial activities (Ajzen, 2002).

2.2. Influence of institutions on entrepreneurship

Institutions are defined as the "rules of the game" in a society or the constraints humans devised that shape their interactions (North, 1990). Institutions can be either formal or informal. Formal institutions comprise economic rules, judicial rules, political rules and contracts, while informal institutions comprise codes of conduct, attitudes, values, norms of behavior, and conventions. Informal institutions often determine the nature, structure and functioning of formal institutions in order to ensure that they are consistent with the norms and values of a particular society (North, 1990). The extremely broad coverage of institutional theory has led many scholars to conclude that it is one of the most

comprehensive, consistent and appropriate conceptual frameworks to examine the influence of macro-environmental factors on entrepreneurship (José, 2007; Lafuente et al., 2007).

2.2.1. Formal Institutions and entrepreneurship

At a macro-level, institutions create environments that either facilitate or inhibit individuals from making enterprise formation decisions and developing growth-related strategies (Veciana, 2007). For instance, government plays an important part in shaping formal institutions by establishing laws and regulations governing business operations and relations (e.g., property rights, contracts, and requirements to start a business). Government may also intervene through various policy instruments to support entrepreneurship or private sector growth and development (e.g., reducing the burden to access financial capital). In a similar vein, Baker et al. (2005) argue that if the institutional environment does not support entrepreneurship, the potential ability of entrepreneurs to detect business opportunities could be hindered. Porter (1993) posits that governments should act as a "catalyst and challenger" by shaping an environment that supports entrepreneurship. They should not act or be treated as "essential helper" to entrepreneurship since this may result in continued dependency on the government. Many women entrepreneurs have experienced discrimination when seeking formal institutional support (Davidson et al., 2010).

A key formal institutional factor that has been shown to have severe limiting effect on entrepreneurial activities is access to financial capital (Bowen & De Clercq, 2008; Lerner & Gompers, 1999). In this regard, Bowen and De Clercq (2008) find strong positive correlations between available capital and the creation of high-growth enterprises, i.e., the more financial capital is targeted at entrepreneurship, the higher the percentage of high-growth enterprises (enterprises with growing job creation in the early stage of business creation). Similarly, Van et al. (2007) observed an inverse relationship between the likelihood of business formation and capital requirement, that is, the likelihood of establishing a new business decreases when the minimum capital required for starting the business increases.

Seeking external financial resources to start a business is an alternative option when entrepreneurs do not have enough money of their own or from family and friends (Gaston, 1989). However, compared with men entrepreneurs, women entrepreneurs face greater

difficulty convincing potential creditors (Brush, 1997; Carter, 2000). Women are more likely to either start with a lower level of funding or give up the idea of creating a new business (Brush, 1997; Sara & Peter, 1998). To mitigate some of these difficulties, some governments intervene by providing special loans, subsidies and funds to boost female entrepreneurship rates (Stevenson & Lundström, 2001).

Another important formal institution that influences entrepreneurs' behaviors is the rule of law of a country, which governs the execution of rights such as the "exchange and enforcement of legal contracts" (Estrin & Mickiewicz, 2011). For example, the law of a nation constrains the likelihood of corruption, which is negatively related to the proportion of high-growth entrepreneurship (Bowen & De Clercq, 2008). In addition, strong property rights facilitate access of entrepreneurs to resources (including capital and finance) and a small state sector motivates people to be more entrepreneurially active, especially for women (Estrin & Mickiewicz, 2011).

Another formal institution that influences entrepreneurship is the level of educational capital of a country, that is, the level of educational opportunities available to the population (Bowen & De Clercq, 2008). Research shows that higher levels of education lead to higher nascent entrepreneurship rates (Davidsson & Honig, 2003; Estrin & Mickiewicz, 2011; Robinson & Sexton, 1994) and women's entrepreneurial activity rates correlate positively with education levels (Verheul et al., 2004).

2.2.2. Informal institutions and entrepreneurship

Informal institutions comprise codes of conduct, attitudes, values, norms of behavior, and conventions of a society (North, 1990). Informal institutional environments are enduring and hardly change over a short period of time (North, 1990). These social norms, values, attitudes, and conventions are often the unwritten “rules”, which are followed by people when engaging in business activities. Indeed, over time informal institutions somewhat dictate the nature and functioning of formal institutions to ensure they are consistent with the norms and values that constitute the informal institutions (North, 1990). Informal institutions have gendered differences in terms of household bargaining power (Mabsout & Van Staveren, 2010). Empirical study shows that in a family, the amount of unpaid work a wife does is affected by social norms and values about who is responsible for housework, not by

how much salary she earns or education she receives (Grunow et al., 2007). Informal institutions also have gendered difference in terms of shaping individual character and beliefs (Hodgson 2004). For example, social expectation of stereotypical masculine and feminine roles influences men and women since their childhood and has an impact on their adulthoods' career choices as well (Odebode & Van Staveren, 2007).

The literature has suggested that the existence of successful entrepreneurs who can be regarded as role models for other people could encourage others to pursue entrepreneurial opportunities (Fornahl, 2003; Bygrave, 1993) or provide information about how to lower the risk and cost of business creation (Minniti, 2005). Furthermore, role models can inspire the confidence of others regarding their entrepreneurial capabilities (Speizer, 1981) and motivate them to be self-employed (Krueger, 1993b; Fornahl, 2003). The empirical evidence suggests that entrepreneurial activity levels are higher in areas where there are more role models and stronger entrepreneurial cultures (Lafuente et al., 2007). Gibson (2004) contends that when the number of entrepreneurs in an area increases, the entrepreneurial propensity of non-entrepreneurs also increases and, thus showcasing stories of successful entrepreneurs is a good way to spur entrepreneurial activity levels (Hindle & Rushworth, 2000).

2.3. Influence of individual characteristics on entrepreneurship

Individual level studies of entrepreneurship noted that people have social resources and tend to utilize them when making the entrepreneurial entry decision (Veciana, 2007). These social resources include social capital and social networks, which affect the creation of new firms through the exchange of resources and linkages (Brass, 1992; Davidsson & Honig, 2003; Elam, 2008). In the entrepreneurship context, social capital is not only the glue that binds linkages but also the lubricant that facilitates the linkages among the members of the social network (Burt, 2009; Powell & Smith-Doerr, 1994). Social networks provide various resources and linkages that may benefit entrepreneurs when developing business ideas (Ardagna & Lusardi, 2008; Veciana, 2007; Thornton et al., 2011).

Key related components of social capital and social networks that seem to positively influence entrepreneurial attitudes and activities are (1) the extent to which entrepreneurs know others who have entrepreneurs who have started a business; (2) whether there are role

models that potential entrepreneurs can emulate; and (3) whether an individual grew up in a family business. From a theoretical perspective, the theory of planned behavior (Ajzen, 1991) postulates that if an individual knows other entrepreneurs, s/he may generate positive attitudes towards entrepreneurship, change his/her subjective norm that entrepreneurship is an accepted career, and improve his/her confidence of their capability to overcome the obstacles as an entrepreneur. From an empirical perspective, the evidence seems to indicate that people can overcome mental barriers and gain confidence if they know other successful entrepreneurs whom they can learn from (Maula et al., 2003). Similarly, Ramos-Rodríguez et al. (2012) show that personally knowing other entrepreneurs increases the likelihood of business creation in the hotel and restaurant industry and Estrin and Mickiewicz (2011) show that it positively influences women's entrepreneurial entry.

Growing up in a family business has a stronger intention of entrepreneurship than those who do not (Krueger, 1993a), and the experience of growing up in a family business is equivalent to at least six months of entrepreneurship training (Peterman & Kennedy, 2003).

Fear of failure and low self-confidence are two factors that negatively affect entrepreneurship choices and decisions (Driga et al., 2009) since they could constrain an individual behaviour as articulated in the theory of planned behaviour (Ajzen, 1991).

3. Theoretical framework and hypotheses

3.1. Theoretical framework

The preceding literature review suggests that entrepreneurial intent is influenced by personal characteristics (Carsrud et al., 1987), individual cognitions of new business opportunities (Busenitz & Lau, 1996; Choi & Shepherd, 2004; Mitchell et al., 2000), and national institutional factors (Hunger et al., 2002; Korunka et al., 2003; Westlund & Bolton, 2003; Thompson, 2009). The review also indicates that these factors are interrelated and may influence entrepreneurship differently (Thompson, 2009). Further, De Bruin et al. (2007) observed that most researchers studying women's entrepreneurship appear to accept mainstream principles without questioning whether this captures the diverse realities of women's entrepreneurship (Gatewood et al. 2003). In this regard, Brush (2006) and Hurley

(1991) contended that even the measures used in studying women's entrepreneurship are male-based and by not considering gendered aspects to entrepreneurship, researchers may be missing certain aspects of women's entrepreneurship that are positive, value creating, and from which they may learn more about entrepreneurship generally (De Bruin et al. 2007). Bird and Brush (2002) argue that there is an underexplored and unarticulated feminine set of processes and behaviors that influence new venture creation. In this, comparisons between groups of women will enable a better understanding of gendered processes and gendered attributes in new ventures. De Bruin et al. (2007) noted that the bulk of studies on women's entrepreneurship studies compare men and women entrepreneurs (e.g. Brush 1992, 2006) and more can be learnt by examining women only samples.

Against this backdrop, the model of this study focuses on factors that pertain specifically to women, which include gendered institutions, gendered resources, and gendered entrepreneurial readiness (including perceived entrepreneurial capability, entrepreneurial willingness, and social network). GDP per capita is control variable in the analysis. Each of these variables is discussed below in more detail. The measurement of these variables is discussed in the methodology section.

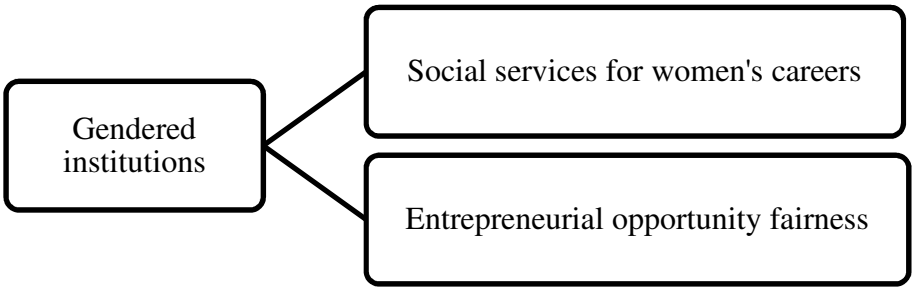
3.2. Hypotheses

3.2.1. Gendered institutions

Sexuality is a biology term and means male and female, however, gender is a sociological term and should be treated as an institution (Martin, 2004). Gendered institutions are social norms and conduct that treat men and women differently and sometimes unequally. Unlike many symmetric institutions (such as traffic rules, exchange rates), gendered institutions are asymmetric and have different effects on different social groups. Some gendered institutions constrain women's while facilitate men's activities (Odebode & Van Staveren, 2007).

Gendered institutions exist in various sectors of the society, but this study focuses only on the entrepreneurial environment for women. Gendered institutions reflect the institutional environment of women entrepreneurs, which includes two dimensions: social services for women's careers and entrepreneurial opportunity fairness (See Figure 1).

Figure 1: The composition of gendered institutions [1]



Social services to women's career refer to the social services provided by governments to assist women to continue to work even after they start a family (Global Entrepreneurship and Development Institute, 2013). Traditionally, child-rearing is considered to be the responsibility of women. If women need to work after they start a family, they face more difficulty in balancing work and family responsibilities (Stoner et al., 1990; Caputo & Dolinsky, 1998). To encourage women to participate in the labor market, governments can provide more generous parental leave schemes and increase the availability of child-care facilities (Gustafsson & Jacobsson, 1985). Furthermore, to create a better entrepreneurial environment for women, governments can create enterprise centers, training and advisory support, special loan programs, and women entrepreneurs' networks and associations (Stevenson and Lundström, 2001). According to theory of planned behavior (Ajzen, 1991), when people anticipate less obstacles, they are more likely to engage in self-employment.

Entrepreneurial opportunity fairness refers to the extent to which men and women are exposed to fair entrepreneurial opportunities. For example, women should have the same (not fewer) chances to obtain business loans from the bank and receive the same (not less) respect from the public and media. If women feel they have the same opportunities as men, they may feel more comfortable pursuing entrepreneurial ventures or self-employment. Pathak et al. (2013) argued that if institutions provide more opportunities for women to be involved in economic activities, more women will consider self-employment.

Based on the above arguments, the following hypothesis is proposed:

Hypothesis 1: Gender institutions are positively related to women's entrepreneurial intentions.

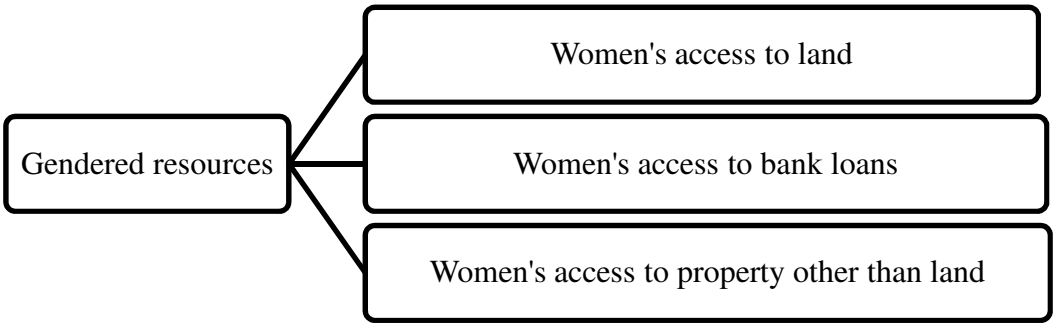
[1] The study considers the social acceptance and encouragement of women entrepreneurs, but the factor analysis presented in section 5.1 suggests that these two factors are not found to be significant.

3.2.2. Gendered resources

Gendered resources refer to the extent to which regulatory and socio-cultural practices restrict the ability to own property and other financial assets. This variable is considered as institutional variable since it deals with access to resources, which is driven by established practices beyond the control of any one individual. It is different from the amount of resources an individual woman actually owns or can raise from friends and family. Prior research shows that level of resources available to women could influence their decisions to start a new venture (Carter, 2000; Diaz Garcia, 2006; Elam & Terjesen, 2010), women face greater hurdles in raising funds (Brush, 1997) and their ventures are usually smaller and start with less resources than those of their male counterparts (Bird & Brush, 2002; Brush, 1992; Estrin & Mickiewicz, 2011). In countries where women are restricted from owning real property or financial resources due to social practices or tradition, they may think that it is not possible to start a new venture or may dismiss the idea altogether because they lack the means to bring their intent to fruition. In this research, gendered resources include women's access to land, women's access to bank loans, and women's access to property other than land. Thus, the following hypothesis is proposed:

Hypothesis 2: Gendered resources are positively related to entrepreneurial intent

Figure 2: The composition of gendered resources

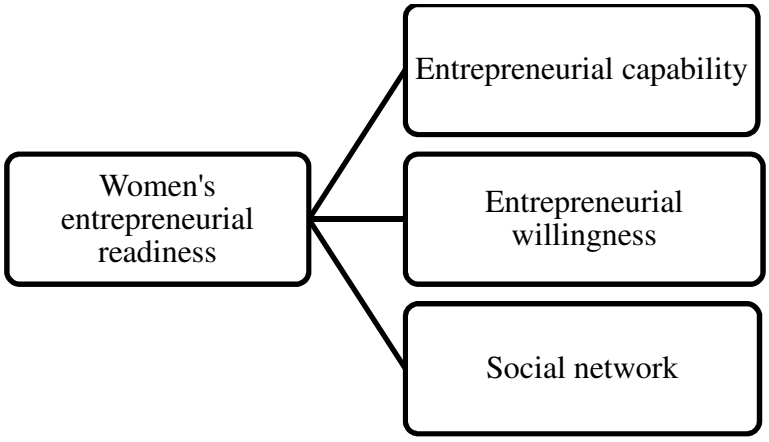


3.2.3. Women entrepreneurial readiness

From an individual-level perspective, studies have shown that social resources controlled by individuals (Driga et al., 2009; Estrin and Mickiewicz, 2011; Maula et al., 2003) and

personal willingness to be self-employed (Mitchell et al., 2002) are important determinants of new venture creation. Similarly, Busenitz and Lau (1996) and Mitchell et al. (2000) argue that the cognitive ability of individual entrepreneurs is an important resource, which can serve as an important predictor of venture creation. These cognitive resources are embodied in an individual's entrepreneurial capability and entrepreneurial willingness, both of which are positively associated with venture creation decisions (Mitchell et al., 2000). In line with these arguments and based on social cognitive theory, Lau et al. (2012) define entrepreneurial readiness as "an individual's cognitive attributes of capability and willingness to direct behavior in an entrepreneurial context" (p. 148). Lau's et al. (2012) definition of entrepreneurial readiness is adopted in this study but with a focus on the readiness of women entrepreneurs. Essentially, in this study, entrepreneurial readiness refers to an individual's capability and willingness to be involved in starting a new business, and social network (See figure 4).

Figure 3: The composition of women's entrepreneurial readiness



Entrepreneurial capability is the knowledge structure that individuals have about the capabilities and skills required to engage in a venture (Lau et al., 2012). Knowledge structures enable entrepreneurs to address the situation they face (Mitchell et al., 2000). In this context, women's entrepreneurial readiness focuses on their level of training and experience, particularly with respect to their ability to mobilize the resources needed in order to create a new venture. General education gives women the ability to read and understand the institutional rules (Davidsson & Honig, 2003; Robinson & Sexton, 1994)

and specific technical skills enable women to enter technically-oriented sectors (e.g. manufacturing of electronics) (Pines et al., 2010).

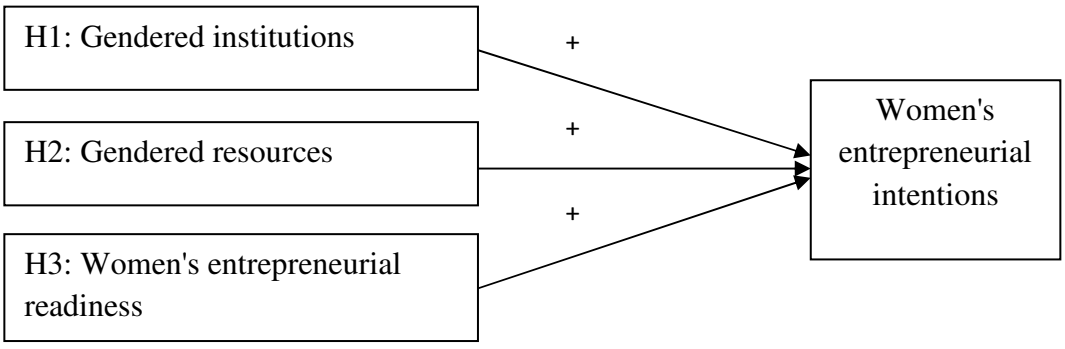
Entrepreneurial willingness is the knowledge structure that inspires motivation and commitment to the venture (Lau et al., 2012). Strong willingness allows entrepreneurs to succeed in a given situation (Mitchell et al., 2000). Women's entrepreneurship needs the willingness to conquer the fear of failure. Individuals who believe they possess the requisite willingness will be more inclined to engage in venture creation. Similarly, individuals with work experience or entrepreneurial training and experience may feel more confident to undertake a new venture creation than those with very little knowledge and experience (Krueger, 2007). This could strengthen their willingness to keep persevering when faced with obstacles. Fear of failure could provide a good indication of an individual's readiness to take the risks associated with new venture creation as well as to deal with the stigma or negative consequences of failure (Driga et al., 2009).

Social networks are a form of social capital that complement personal resources and foster entrepreneurial success (Baron and Markman, 2003; Lau et al., 2012). According to Lau et al. (2012), social networks enable entrepreneurs to get connected with the right persons and, in turn, get access to financial, human, and other resources necessary for improving the quality of firms (Walter et al., 2006), which will have a positive effect on their venture formation decisions.

Based on the preceding arguments, the following hypothesis is proposed:

Hypothesis 3: Women's entrepreneurial readiness is positively related to women's entrepreneurial intentions.

Figure 4 summarizes the research hypotheses:



4. Data and variables

4.1. Data sources

This paper uses data from mainly two databases: Global Entrepreneurship Monitor (GEM), and Social Institutions and Gender Index (SIGI). These databases are selected because they provide data that facilitate cross-national comparison of entrepreneurial activity and can be used to test the various hypotheses. GEM covers both developing and developed countries, while SIGI covers mostly developing and emerging countries. A brief description of these data sources and reasons of choosing them are provided below.

4.1.1. Global Entrepreneurship Monitor (GEM)

Initiated by London Business School and Babson College in 1998, GEM dataset facilitates cross-national comparison of entrepreneurial activity in up to 69 economies (both developed and developing) in 2012. GEM annual reports provide a better understanding of institutions' influence on entrepreneurial activities and the development of policies to boost entrepreneurship (Reynolds et al., 2005), and are highly valued by researchers and policymakers of every participating country (Sternberg & Wennekers, 2005).

The GEM Adult Population Survey (APS) measures entrepreneurship at the individual level. At the same time of each year, surveys are translated into local languages. And private market survey firms conduct the interview with at least 2000 randomly selected adults (from 18 to 64 years old) through telephone interviews or occasionally face-to-face interviews. Adult Population Survey data is suitable to in-depth analysis of a phenomenon over time in many countries on some specific characteristics of entrepreneurial attitudes, activity and aspirations (Bosma et al., 2012).

The National Expert Survey (NES) chooses experts based on their reputation and experience and gathers quantitative information from them in each GEM country. NES questionnaire is composed of three parts: closed part, open ended part, and social and professional background. NES has 14 Entrepreneurial Framework Conditions (finance, government policies, government programs, entrepreneurial education and training, R&D transfer, commercial and professional infrastructure, internal market openness, physical infrastructure and services, cultural and social norms, capacity for entrepreneurship, economic climate,

work force features, perceived population composition, and political, institutional and social context). At least 36 experts are selected in each GEM country. Experts have face-to-face interviews to talk about contributions and limitations of the entrepreneurship environment of their countries, and give suggestions about how to boost entrepreneurship levels. Some of the experts are professionals (at least 50%), such as venture capitalists, academics, bankers, consultants, or politicians. Other experts are entrepreneurs (from 25% to 50%), such as people who establish the companies, or people who are involved in the development and production of industries. Data are collected, summarized calculated and harmonized by the GEM DATA Team.

The variables' definitions and the collection methodology are generally consistent over years. The standardized questions and unified measurement scales increase the credibility and validity of the research, and facilitate cross-national and longitudinal research (Reynolds et al., 2005).

4.1.2. Social Institutions and Gender Index (SIGI)

Developed by the Organisation for Economic Co-operation and Development (OECD) in 2009, Social Institutions and Gender Index (SIGI) measures the gender gaps of discriminatory informal institutions and it covers over 100 countries of different economic development levels. SIGI captures five distinct aspects of discrimination against women: discriminatory family code, restricted physical integrity, son bias, restricted resources and entitlements, and restricted civil liberties (Social Institutions and Gender Index, 2012). This study chooses SIGI data, because other composite indicators of gender equality focus on gender gaps of political, economic participation or educational attainment, rather than on gender gaps of social institutions. Other composite indicators include the Gender-related Development Index and Gender Empowerment Measure by United Nations Development Programme, the Gender Gap Index by World Economic Forum, and the Gender Equity Index by Social Watch. Jütting et al. (2008) provide more detailed comparisons of these other composite different indicators.

4.1.3. Merged dataset

Data from Global Entrepreneurship Monitor and Social Institutions and Gender Index are averaged from year 2009 to year 2012 in this study. In particular, Global Entrepreneurship

Monitor has collected data each year from 2009 to 2012. Social Institutions and Gender Index has collected data in year 2009 and year 2012. This method has been used in previous studies (e.g. De Clercq et al., 2010; Klyver et al., 2012) in order to increase the country sample size, especially when data is incomplete for certain years. Only countries with data available in all the databases are selected in this study. As a result, there are 43 countries selected for this study.

4.2. Variables

4.2.1. Dependent variable

The dependent variable for this study is the percentage of women who have entrepreneurial intentions, which is national-level data derived from GEM's Adult Population Survey. In the survey, respondents are asked about the future intent of establishing a new business with the question "are you, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years?". The answer is coded 0 for No and 1 for Yes to the question. Only responses from women respondents are used in this study. And for each country, the percentage is calculated as the women who have entrepreneurial intentions.

All the GEM data used in this study are adjusted with weight so that the data can be as close as possible to describe the women adult population of the country. The applied weighting method of this study is confirmed by GEM members. All the country level GEM data have been weighted along a series of dimensions, such as age, gender, region, educational level, and urban/rural stratification (Bosma et al., 2012).

4.2.2. Independent variables

Gendered institutions are composed of social services for women's careers and entrepreneurial opportunity fairness from the GEM National Expert Survey. These dimensions are measured on a five-point Likert scale where 1= completely false and 5= completely true. The gendered institution variable is measured by the average of the scores from year 2009 to 2012 for each of these dimensions.

Gendered resources are composed of three dimensions (women's access to land, bank loans, and property other than land) and data are from SIGI 2009 and 2012. They are continuous variables from 1 to 0 (1= no access, 0= full access, reverse-coded).

For women's entrepreneurial readiness, data of all the three variables are from the GEM Adult Population Survey. In particular, entrepreneurial capability is measured as business knowledge, skills, and experience; entrepreneurial willingness is measured as fear of failure (reverse-coded); and social network is measured as knowing other entrepreneurs. The data are the percentage of women who have entrepreneurial capability, entrepreneurial willingness, and social network.

4.2.3. Control variables

In the entrepreneurship literature, the level of economic development of countries is often characterized and measured by indicators such as GDP, GNI, and per captia income (De Clercq et al., 2010; Elam & Terjesen, 2010; Pathak et al., 2013; Wennekers et al., 2005). This study uses GDP per capita to measure the country's economic development level.

This study also consider some other factors, however, those factors are not valid and are excluded in the analysis. Those factors include independent variables: two gendered institution factors (social acceptance of women entrepreneurs, social encouragement of women entrepreneurs), two gender resources factors (women's access to bank accounts, women's access to finance programs), and four gender equality factors (early marriage, violence against women, female mutilation, access to public space). The factors also include two control variables: formal institutional environment (financial capital, educational capital, rule of law, government support, government complexity), and institutional women competency (female participation in labor force, female participation in firm ownership, female secondary school enrollment, female tertiary enrollment).

Table 3 provides the description of variables, including definitions and sources of data. Table 4 presents the average of each variable of factor-driven, efficiency-driven, and innovation-driven country group. The countries are categorized into three groups based on the classification of World Economic Forum, which classifies countries according to the level of GDP per capita at market exchange rate and the percentage of mineral goods exports in total exports (Schwad, 2010).

Table 3. Description of variables

Dependent variable
Women's entrepreneurial intentions: The percentage of women who are, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years. Source: GEM (2009 ~ 2012)
Independent variables
Gendered institutions Social services for women careers: In my country, there are sufficient social services available so that women can continue to work even after they start a family. Entrepreneurial opportunity fairness: In my country, men and women get equally exposed to good opportunities to start a new business. Source: GEM (2009 ~ 2012)
Gendered resources Women's access to land: Women's legal rights and defacto rights to own and/or access agricultural land. Women's access to bank loans: Women's legal rights and defacto access to bank loans. Women's access to property other than land: Women's access to other types of property, especially immovable property. Source: SIGI (2009 and 2012)
Women's entrepreneurial readiness Entrepreneurial capability (Business knowledge, skills, experience): The percentage of women who indicate that they have the knowledge, skill and experience required to start a new business Entrepreneurial willingness (Fear of failure): The percentage of women who self-assessed that they will be prevented from starting a business due to the fear of failure, reverse-coded Social capital (Knowing other entrepreneurs): The percentage of women who know someone personally who started a business in the past 2 years? Source: GEM (2009~2012)
Control variables
GDP per capita: Gross domestic product (GDP) that is divided by the number of people in the country. Source: GEM (2009~2012)

Table 4: Sample descriptives I

	Factor-driven	Efficiency-driven	Innovation-driven
Countries	18 countries: Algeria, Angola, Bangladesh, Bolivia, Botswana, Egypt, Ethiopia, Ghana, Guatemala, Iran, Jamaica, Malawi, Nigeria, Pakistan, Saudi Arabia, Uganda, Venezuela, Zambia	21 countries: Argentina, Bosnia and Herzegovina, Brazil, China, Colombia, Costa Rica, Croatia, Dominican Republic, Ecuador, El Salvador, Macedonia, Malaysia, Panama, Peru, Russia, Serbia, South Africa, Thailand, Trinidad and Tobago, Tunisia, Uruguay	4 countries: Hong Kong, Singapore, Taiwan, UAE
Women's entrepreneurial intentions	40.52	25.66	16.74
GDP per capita	4933.89	8631.62	43249.25
Gendered institutions	2.68	3.03	3.73
Gendered resources	0.56	0.75	0.83
Women's entrepreneurial readiness	47.8	37.47	24.43

Table 5: Sample descriptives II

Variables	n	Mean	SD	Minimum	Maximum
Women's entrepreneurial intentions	43	31.05	18.05	4.28	72.90
GDP per capita	43	10303.98	12910.86	253.00	64840.00
Gendered institutions	43	2.95	0.49	1.96	4.00
Gendered resources	43	0.68	0.25	0.00	1.00
Women's entrepreneurial readiness	43	40.58	12.24	19.11	67.58

5. Methodology and results

5.1. Factor analysis

Much previous research using the GEM database has relied on testing Cronbach's alpha. This provides some measure of internal consistency, but does not account for convergent validity

and discriminant validity. Convergent validity implies that if several observed measures construct that are strongly interrelated. On the contrary, discriminant validity indicates that if several observed measures represent distinct theory or constructs, or if they are not strongly interrelated (Brown, 2006).

This study employs factor analysis to identify independent variables with acceptable convergent and discriminant validity. Factor analysis is a series of procedures that aim to "determine the number and nature of latent variables or factors that account for the variation and covariation among a set of observed measures, commonly referred to as indicators" (Brown, 2006, p. 13). In empirical research, factor analysis is used for psychometric evaluation, construct validation or data reduction (Brown, 2006).

Observed measures are observed directly (e.g. through a question). Observed measures are interrelated and are grouped together due to the same cause. Latent variables cannot be directly observed , so a group of observed measured are loaded onto one latent variables to make sure the concept is captured well enough. Therefore, each latent variable may comprise a few observed measures. Factor loading calculates the correlation between the group of observed measures and the corresponding latent variable (Andrew, 2013).

There are two kinds of factor analysis - exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). While EFA is data-driven and is conducted in the early process to identify the proper number of latent variables and the factor structure, CFA is hypothesis-driven and is conducted later in the process to deal with the relationships between observed measures and latent variables (Brown, 2006). This study is anchored in extensive prior research that has explored the factor structure of the proposed independent variables. Therefore, this study seeks to validate the factor structure using confirmatory factor analysis. Confirmatory factor analysis can be conducted in a structural equation modeling framework. Due to the relatively small sample size, PLS-based analysis are conducted using SmartPLS.

Table 6. Factor analysis result I

	AVE	CR	Communality	Cronbach's alpha
Gendered Institutions	0.89	0.94	0.89	0.87
Gendered Resources	0.68	0.87	0.68	0.77
Women's entrepreneurial readiness	0.71	0.88	0.71	0.78

Table 6 presents the factor analysis result. The convergent validity of this model is sufficient due to a few measures. First, composite reliability (CR) for each factor is greater than 0.70 (Garver & Mentzer, 1999). Second, each factor loading is more than 0.70 (Hair et al., 2006). Third, each Average Variance Extraction (AVE) and communality is higher than 0.50 (Fornell & Larcker, 1981). The discriminant validity of this model is also adequate because each square root of the AVE is all higher than any of the correlations among latent variables (Fornell & Larcker, 1981).

5.2. Linear regression analysis

Regression is the most common methodology used in many recent studies by other authors with GEM data. As it is shown in table 1, 14 out of 16 studies using GEM data choose to adopt regression methodology.

In this study, the data were analyzed using linear regression. Linear regression aims to illustrate the extent to which dependent variable is explained by predictor variables (Andrew, 2013). The form of the linear regression equation that was used is:

$$p(x) = \alpha + \sum_{i=1}^{3} \beta_i x_i + c_j z_j + \varepsilon$$

In the equation, p(x) is the percentage of women who have entrepreneurial intentions. α is the intercept. x_i represents the three independent variables (gendered institutions, gendered resources, women's entrepreneurial readiness), z_j represents the control variable. β_i's and c_j's are regression coefficients or parameter estimates. ε is the residual term. The model was measured for overall fit, statistical significance of the parameter estimates (β_i and c_j), as well as their direction and magnitude.

To detect whether there is a multicollinearity problem, the study analyzes the correlation across predictor variables and GDP per capita (table 7). The correlation between factors are very low (<0.49). In addition, the Variance Inflation Factors (VIF) of the ordinary least-squares regression analysis are well within the limits of 10.00 (Myers, 1990). Therefore, there do not seem to be multicollinearity effects in this study.

Table 7. Correlation matrix

		1		2		3		4
1	GDP per capita	1.00						
2	Gendered Institutions	0.38	*	1.00				
3	Gendered Resources	0.26	t	0.36	*	1.00		
4	Women's entrepreneurial readiness	-0.45	**	-0.32	*	-0.48	**	1.00

Levels of significance for two-tailed tests: t: p<.10; *: p<.05; **: p<.01; ***: p<.001

5.3. Regression results

Three linear regression models are employed in this study. Model 1 includes only the control variable (GDP per capita). Model 2 adds two institutional variables (gendered institutions and gendered resources). Model 3 adds the individual variable (women's entrepreneurial readiness). The study separates out the models to show additional variance explained by the new variables. Table 8 presents the regression result and the regression coefficients can be found in the appendix.

Table 8. Multivariate Linear Regression Estimation

	Model 1	Model 2	Model 3	VIF
Independent Variables				
Gendered Institutions(H1)		0.16t	0.21t	1.28
Gendered Resources(H2)		-0.54***	-0.29*	1.38
Women's entrepreneurial readiness(H3)			0.67***	1.52
Control Variables				
GDP per capita	-0.36*	-0.28*	-0.07t	1.35
Number of Observations	43	43	43	
Adjusted R Square	0.11	0.33	0.63	
Sig. F Change	0.017	0.002	0.000	
R Square	0.13	0.38	0.67	
R Square Change	0.13*	0.25**	0.29***	
Estimated coefficients are listed in the table.				
Levels of significance for two-tailed tests: t: p<.10; *: p<.05; **: p<.01; ***: p<.001				

Model 2 and model 3 have significant improvements over each previous model. Model 1 accounts for 13% of in women's entrepreneurial intentions (R^2 = .13). Model 2 and model 3 accounts for 38% and 67% of the variance in women's entrepreneurial intentions respectively.

The results show the relationship between women's entrepreneurial intention and three studied variables. Firstly, gendered institutions do not contribute to the model significantly, which does not support hypothesis 1. Secondly, a significant negative relationship is found between women's entrepreneurial intentions and gendered resources (β = -0.54, p = 0.000), which does not support hypothesis 2. Although the relationship between the two variables is significant, it is in the opposite direction proposed in the study. Thirdly, women's entrepreneurial readiness has a positive relationship with women's entrepreneurial intentions (β =0.67, p = 0.000). This finding supports hypothesis 3.

5.4. Robustness Check

Although this study follows the research methodology that is most commonly used in many recent studies. The sample size is smaller than generally recommended for ordinary least squares based regression analysis (Tabachnick & Fidell, 2007). This concern can be addressed by re-calculating the proposed model in a regression analysis based on partial least squares (PLS).

This study chooses to conduct the PLS analysis with the SmartPls software (Hair et al., 2012). SmartPls software creates and estimates a PLS path model and it is suitable for a smaller sample size.

The results of the robustness check are in line with the findings of the linear regression. As such, it is suitable to conducting both the confirmatory factor analysis and the linear regression in the study. In particular, path coefficients obtained through the PLS Algorithm (Figure 5) are similar to the regression weights reported above. Gendered resources have a moderate negative relationship with entrepreneurial intentions (-0.29) and women's entrepreneurial readiness has a strong positive relationship (0.66). The results explain 66% of the total variance. The PLS-based analysis reports bootstrapping result shows T-statistics obtained through bootstrapping to determine significance (Figure 6). The T-value is significant if it is higher than 1.96 (at $p<0.05$) (Wong, 2013). Again, the patterns of significance obtained through this analysis are very similar to those reported above. Gendered institutions approach the significant level (1.92), but remained non-significant. Gendered resources are significant (2.79), and women's entrepreneurial readiness is strongly significant (7.85) as well.

Figure 5. PLS Algorithm result

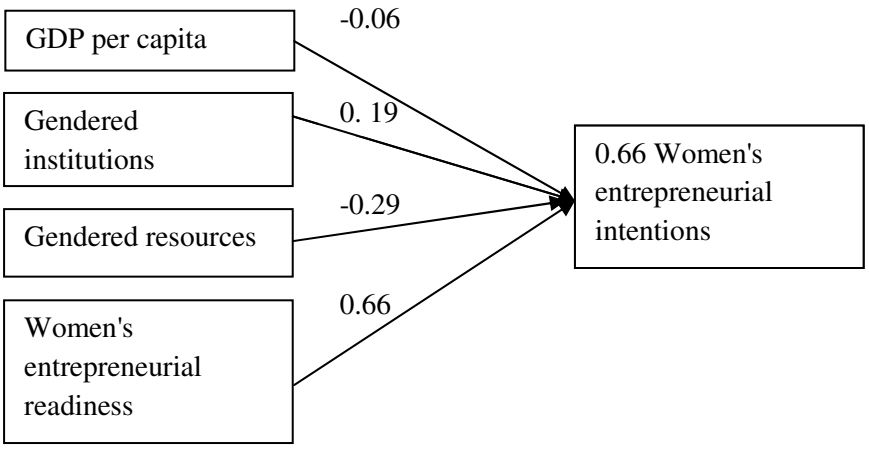
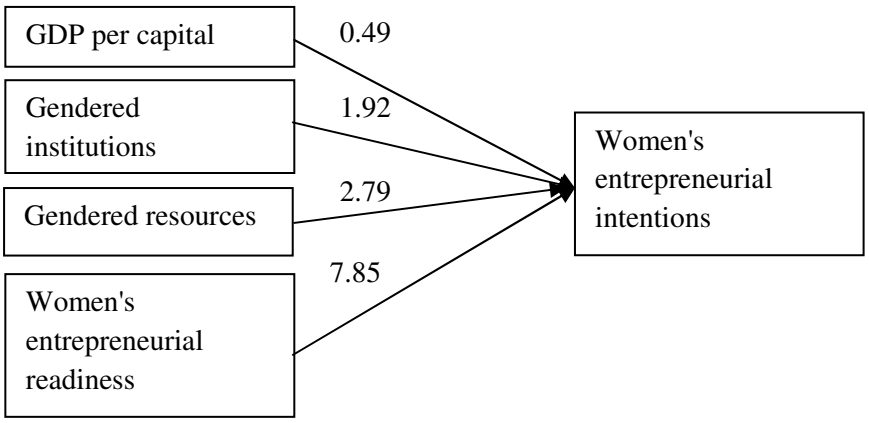


Figure 6. Bootstrapping result



6. Discussion

According to the result of this empirical analysis, the relationship between *gendered institutions* and women's entrepreneurial intention is not statistically significant at the .05 level but is at the .10 level. This suggests a positive but weak relationship, which may indicate that when combined with other predictors in the model, it does not add much more explanation than the other significant variables (Stevens, 2009). The result also seems to suggest that even though in some countries, there are sufficient social services available for women to continue to work even after they start a family and men and women are equally exposed to good opportunities to start a new business, women are not more likely to have intentions to establish their new businesses. One possible explanation is that during the age group of 25 to 45 years old, women are more inclined to take part in the child-rearing activities (Verheul et al., 2004) and quit the jobs when they are married or have young children (Charles et al., 2001). Thus, if the society provides more social services (such as more generous parental leave schemes) to women after they start a family, women may be more inclined to keep their jobs (Gustafsson & Jacobasson, 1985), rather than seek self-employment. In addition, self-employment normally requires longer working hours than wage-employment (Verheul et al., 2004), while many married women may prefer to keep their jobs, enjoy the benefit of parental leave schemes, and spend more time with their young children.

Secondly, *gendered resources* are negatively related to women's entrepreneurial intentions, which seems counter-intuitive since it is expected that if women have more resources at their disposal, they would probably be more inclined to engage in entrepreneurship. However, the negative relationship seems to indicate that in some societies, if women have more access to land, bank loans and property other than land, they are less likely to have intentions to start their businesses. Since most countries (39 out of 43) in this study are factor- and efficiency-driven countries, they rely and compete on primary resources and standard products, possession of resources may provide a sense of security for women in these societies and they may be reluctant to risk them in a venture. This may be exacerbated if they perceive that social institutions are stacked against them, a sentiment reflected in GEM NES survey data and other studies (Speizer, 1981; Lafuente et al., 2007; Ramos-Rodríguez et al., 2012). In many factor- and efficiency-driven countries, even though legal institutions grant women

equal rights to access agricultural land, bank loans, and other property other than land, women may lack the awareness of their legal rights and be discouraged by discriminatory attitudes of the society from exercising the rights. For example, in Nepal, only 6% of total landowners are women. Moreover, in Morocco, women are forced by the social pressure to give away the land ownership to their husbands or other male family members (Social Institutions and Gender Index, 2012).

Another possible reason is that many empirical studies have shown that is a U-shape relationship exists between nascent entrepreneurship and economic development (e.g. Van et al., 2003; Carree et al., 2002). In the earlier phase of economies (factor-driven), non-agricultural self-employment rate is high. When the per capita income increases (efficiency-driven), more employment opportunities are created and self-employment rate is decreasing. In the later phase of economies, people worry less about their basic survival needs and decide to pursue their business ideas, and self-employment rate is increasing again (Porter et al., 2001). In this study, the average score of gendered resources of efficiency-driven countries (0.75) is higher than that of factor-driven countries (0.56) and is lower than that of innovation-driven countries (0.83). The result is influenced more by efficiency-driven countries (21 countries) and factor-driven countries (18 countries) than innovation-driven countries (4 countries). Therefore, even though factor-driven countries generally have lower score of gendered resources, they still have a higher level of women's entrepreneurial intentions due to the stage of economic development.

Thirdly, *women's entrepreneurial readiness* is found to be positively related with women's entrepreneurial intentions. This finding demonstrates that if women have entrepreneurial knowledge and skills and entrepreneurial willingness to conquer the obstacles in the process of start-up, and know someone personally who started a business, they are more likely to have entrepreneurial intentions. The three aspects together describe the cognitive ability of a woman towards entrepreneurship. The finding shows that regardless of the outside entrepreneurial environment the women are in, the personal capability and willingness is a strong determinant factor towards entrepreneurship. In particular, business knowledge and skills enable a woman to predict what is going to happen when they start the business and prepare themselves ahead. When a potential entrepreneur is mentally prepared for the

difficulties that she may come across in the start-up phase of the business, she is willing to start a venture. And the nascent entrepreneurs the women know can provide them consultation and advice, act as their role models, give them advice about how to access resources and give them confidence to be successful.

According to the findings, women's individual preparation, qualities or potential of becoming an entrepreneur can more directly influence women's entrepreneurial intentions, while the institutional factors such as gendered institutions and gendered resources do not necessarily increase women's entrepreneurial intention in a certain direction. The results encourage researchers to study entrepreneurship with multiple-level designs (Davidsson & Wiklund, 2007; Low & MacMillan, 1988) as this could lead to new theories and hypotheses of women's entrepreneurship.

7. Limitation

There are limitations of this research. First, the research does not differentiate the entrepreneurial intention due to necessity entrepreneurship and opportunity entrepreneurship (Van et al., 2012). Second, since SIGI data only focus on non-OECD or non-European Union countries, there is a lack of data of many developed countries. And the results of this study only represent the trend in those non-OECD countries. Third, this work is not able to identify casual relations between women's entrepreneurial intentions and the studied predictors. Further studies may need to adopt an experimental approach to identify and describe causal relationships (Bordens & Abbott, 2011). Fourth, gendered institution is only comprised of two factors. Future research should find more additional items.

8. Contribution and implications

This study makes contributions to theory development and has implications for management and policy practice. From a policy and managerial perspective, the study provides fresh evidence based on recent data on how various institutional contexts affect the intentions of women to contribute to economic activities through new venture creation. According to the result, in factor- and efficiency-driven countries, improving certain aspects of the institutional entrepreneurial environment for women do not improve women

entrepreneurship. In particular, providing more social services for women's career and creating more fair opportunities for women to be self-employed may not increase women's entrepreneurial intentions. Also issuing laws and regulations may not encourage more women to establish their businesses due to the pressure they suffer from the society and risk they have to invest their owning into business ventures.

However, female entrepreneurship can be stimulated through improving individuals' entrepreneurial readiness. Firstly, increasing women's confidence in their capabilities as entrepreneurs by establishing education and training centers to decrease illiteracy rate among women and teach them how to start a business. Secondly, showcasing successful women entrepreneurs through public media can boost the confidence of other women and help them to conquer the fear of failure. Thirdly, create more opportunities for women to have first-hand entrepreneurial experiences by establishing special loan programs or organizing entrepreneurship competition. Through participating in these programs and competitions, women will not only get financial support, but also receive counseling and training service. Fourthly, build a bridge between successful and potential women entrepreneurs by organizing network events and peer support groups through social media. All those measures can bring aspirations to and encourage women who are inclined to be self-employed, but are not determined about their ventures or are not confident enough about their capabilities.

From a theoretical perspective, this study answers the call for more empirical studies on the institutional influences on female entrepreneurial intent across countries of different level of economic development (Driga et al., 2009; Ramos-Rodríguez et al., 2012). In addition, it explores the extent to which individual-level entrepreneurial intent is shaped by national-level institutional factors, particularly through the lenses of women. De Bruin et al. (2007) noted that the research on the link between individual characteristics and national institutions in a multi-country context particularly with regards to women is needed to provide a deeper understanding of gendered entrepreneurship. In particular, gendered institutions do not have a major influence on women's decision to entry into entrepreneurship. Also, the more gendered resources women can have access to, the less likely they will have a desire to establish a new business. In addition, entrepreneurial readiness is a relatively new concept in the entrepreneurship research field, which is defined by Lau et al. (2012). All the three

results contribute to the literature in a way that they capture the overall level of institutional and individual variables by combining different dimensions of each variable together, while previous research mostly only examine a single aspect of an institutional or individual factor (e.g. Estrin & Mickiewicz, 2011; Minniti & Nardone, 2007).

When future researchers investigate the influence that institutional entrepreneurial environment have on entrepreneurial intentions, they may need to consider the characteristics of the sample countries they select. The economic development level of the country and the level that women entrepreneurs are respected may affect the result of the analysis.

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Appendix

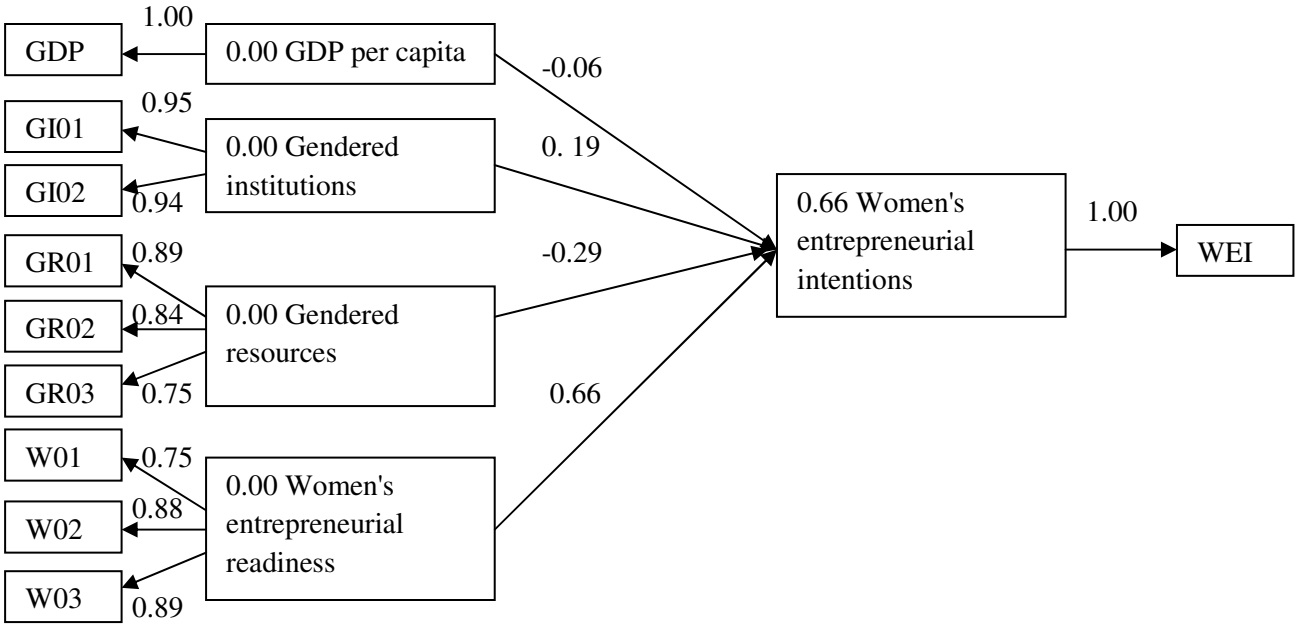
Appendix 1. Regression coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	36.254	3.340		10.854	.000					
	GDP per capita	-.001	.000	-.361	-2.480	.017	-.361	-.361	-.361	1.000	1.000
2	(Constant)	26.676	17.870		1.493	.144					
	GDP per capita	.000	.000	-.305	-2.303	.027	-.361	-.346	-.283	.859	1.164
	GI	11.505	5.926	.256	1.941	.059	.027	.297	.238	.868	1.153
	GR	-39.411	9.509	-.535	-4.144	.000	-.552	-.553	-.509	.904	1.106
3	(Constant)	-16.073	15.920		-1.010	.319					
	GDP per capita	-9.790E-005	.000	-.070	-.631	.532	-.361	-.102	-.059	.722	1.385
	GI	8.083	4.598	.180	1.758	.087	.027	.274	.166	.850	1.176
	GR	-20.622	8.119	-.280	-2.540	.015	-.552	-.381	-.239	.732	1.366
	sfknew	.916	.173	.621	5.301	.000	.769	.652	.500	.647	1.545

a. Dependent Variable: Futsupfcountry

Appendix 2. PLS Algorithm result



Appendix 3. Bootstrapping result