



Influences of gendered institutions on women's entry into entrepreneurship

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Abstract

Purpose – Research and theory indicate that macro-level variables can influence the effects of individual-level factors on the economic behavior of women; however, this has rarely been examined with regard to women's entrepreneurship. Entrepreneurship has thus far been examined from a gender-neutral perspective. The purpose of this paper is to address this gap by deriving predictions using a sociological model of gender stratification and examining the effects of gendered institutions on women's entrepreneurship.

Design/methodology/approach – Using the Global Entrepreneurship Monitor (GEM) dataset comprising over 40,000 individuals across 30 countries combined with data from the Global Gender Gap Index (GGGI), the authors examined the direct as well as cross-level moderation effects of gendered institutions on the probability of women entering into entrepreneurship.

Findings – Results indicated that gendered institutions moderate effects of individual variables on the entrepreneurship of women, suggesting that in theory and research, individual factors affecting women's entrepreneurship should be considered within the larger cultural context.

Research limitations/implications – The findings provide additional evidence for the gender stratification theory of women's economic activity. Future research should examine alternative operationalizations of the variables, as well as effects of additional gendered institutions.

Practical implications – Results suggest that changes may be needed in entrepreneurship development policies in countries with cultural values creating barriers for women's entrepreneurship.

Originality/value – This multi-level analysis is derived from a theoretical framework and helps account for the rates of entrepreneurial activity found among women across many countries.

Keywords Women, Entrepreneurialism, Women's entrepreneurship, Gendered institutions, Cultural context, Self-efficacy, Multi-level research

Paper type Research paper

Introduction

Rates of entrepreneurial activities indicate significant variance in entrepreneurship across countries in general (Hayton *et al.*, 2002) and in women's entrepreneurship in particular (Kelly *et al.*, 2010). However, two important gaps in existing research on women's entrepreneurship have limited our understanding of this variance.

First, research on women's entrepreneurship has predominantly adopted individual-centric approaches to explain entrepreneurial behaviors and has frequently ignored country-specific factors that may account for the variance in the rates of women's entrepreneurial activity across nations. Such approaches assume that entrepreneurs operate in isolation from their context. This is perilous because it leads to the conclusion that entrepreneurial behaviors are outcomes of individual attributes alone and that entrepreneurs identified across varied contextual settings are ultimately all alike, regardless of the context in which they operate. In order to understand individuals' entrepreneurial behaviors, effects of context must also be considered (Shane and Venkataraman, 2000).



Second, research on women's entrepreneurship has been driven more by empirical observations of the entrepreneurial process and less driven by theory (Carter *et al.*, 2001). The entrepreneurship literature has adopted a gender-neutral perspective (Carter *et al.*, 2009) and failed to present theories of gender when sex differences are researched (Lansky, 2000). This lack of theoretical grounding may account for the failure of research to explain factors that specifically influence women's entrepreneurship.

In this study, we address these gaps. First, since multi-level approaches have been successful in accounting for cross-country variance in women's rates of self-employment and entrepreneurial activity (e.g. Parker, 2009; Minniti *et al.*, 2005), we provide a multi-level analysis by examining the influence of individual-level attitudes combined with links between national gendered institutions and women's entrepreneurial behaviors. As a starting point, we define gendered institutions as patterns of relations in society that tend towards systematically treating men and women differently, usually unequally (Mabsout and van Staveren, 2010) and that translate into different expectations and opportunities for men and women. They result in disparities in gender roles, beliefs, social status, social, political and economic activities, etc. Societies that are more tolerant towards women's participation in economic activities beyond the confines of domestic activities are likely to have increased likelihoods of women's entrepreneurship. In contrast, others that are oriented towards favoring men's participation in education and stifling women's educational progress may suppress those likelihoods. Gendered institutions thus represent societal structures that may limit women's behavior more than men's and provide an advantage for men as a group (Mabsout and van Staveren, 2010). They could be formal, occurring within societal structures such as property rights or family law, or informal, occurring within traditions. Both types provide an advantage for one gender over the other (Mabsout and van Staveren, 2010). Therefore, differences caused by gendered institutions represent gender disparities. In this paper, we consider country-level women's economic participation and opportunity and educational attainment relative to those of men, as the two gendered institutions, hereafter referred to as women's economic participation and opportunity and educational attainment.

Second, we draw upon a sociological theory of gender stratification to consider how women's rates of entrepreneurial activity might be affected directly and indirectly by gendered institutions. We examine women's entrepreneurship in a more holistic way and as a contextually driven phenomenon across 53 countries. Our examination is prompted by the fact that gendered institutions across countries should exercise varied association with women's entrepreneurial behaviors and differential treatment affects perceptions of opportunities (DeTienne and Chandler, 2007).

In particular, we consider direct effects, in terms of the association, between (1) women's attitudes of self-efficacy and fear of failure and (2) country-level gendered institutions such as women's economic participation and opportunity and educational attainment with women's entry into entrepreneurship. Then we investigate (3) how the associations between women's attitudes of self-efficacy and fear of failure with entry into entrepreneurship vary depending upon the strength of a country's gendered institutions considered in (2). In other words, we analyze the moderating effects of gendered institutions on the association between attitudes and women's entry into entrepreneurship. While institutions may create mediating effects of attitudes on institutions, the aim of this study lies with examining the moderating effects as proposed in (3).

Our study does not compare rates of entrepreneurship between men and women; rather it attempts to discover potential linkages between gender disparities in beliefs, roles and social, political, and economic activities (manifested by gendered institutions and expressed as ratios) with women's entrepreneurship. Our theoretical framework is shown in Figure 1.

Our findings show that country-level women's economic participation and opportunity is positively related to women's likelihood of entry into entrepreneurship at the individual level. Further, while both country-level women's economic participation and educational attainment moderate positively the influence of women's self-efficacy on entrepreneurship, it is only the former that moderates negatively the influence of women's fear of failure on entrepreneurship.

The paper is structured as follows. In the subsequent section we present the rationale for considering gendered institutions when examining women's entrepreneurship. Next, we propose the hypotheses. Then we describe the data, estimation method, and variables. Then we describe the results. Subsequent to that we present our discussions. Finally, we conclude by presenting the contributions and limitations in the last section.

Gendered institutions and women's entrepreneurship

Formal and informal institutional frameworks shape the activities and strategies adopted by entrepreneurs (North, 1990). Formal institutions establish ground rules and economic factors that may facilitate certainty in transactions and represent incentive structures that shape an entrepreneur's utility-maximization considerations (Williamson, 2000). Informal institutions, on the other hand, represent socio-cultural factors that may shape an entrepreneur's feasibility, desirability, and legitimacy considerations in the examination of entrepreneurship as a potential career choice. For example, formal institutions such as laws may enable women to enter entrepreneurship but social norms may still discourage women to engage in various activities.

Since these institutions vary across countries, rates of entrepreneurship in general and women's entrepreneurship in particular may vary as a result. However, there is evidence that suggests that economic factors may not fully explain the variation in the latter (Minniti *et al.*, 2005; Minniti and Nardone, 2007). Hence we investigate the importance of gendered institutions, representing socio-cultural factors, on women's entrepreneurship across nations. This may be a daunting task since linking cultural

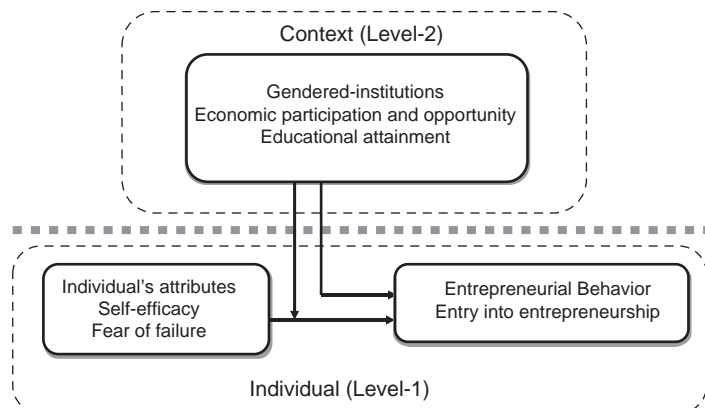


Figure 1.
Theoretical model

differences with individual-level differences in thought processes across countries is not straight forward. We attempt to create these linkages by adopting a sociological definition of institutions (Powell and DiMaggio, 1991; Scott, 2003) that says “[...] what begins as an idea or a single belief quickly becomes institutionalized in terms of norms, ideals and expectations of appropriate behavior. Formal policies and belief systems are then born out of normative and idealized patterns of practice” (Elam and Terjesen, 2010, p. 332).

We expect that most gendered institutions become institutionalized and socially embedded in essentially the same way. What starts locally as ideas pertaining to men’s and women’s expected behaviors or roles can become repeatedly practiced patterns adopted by a larger proportion of the society. Eventually the practices become institutionalized in the form of embedded rules and arrangements that then define that particular society. The more a particular gender group (either male or female) becomes the primary practitioner of a behavior, the more there will be gender “gaps” related to that behavior. Social groups that are easily identifiable – such as gendered groupings – may then become susceptible to stereotypes that may result in discrimination (Estrin and Mickiewicz, 2011). Some societies may reserve child-care and housework responsibilities exclusively for women – responsibilities that may be deemed less valued than activities assigned to men (Williams and Best, 1990). In other societies, the rights to education may be reserved just for men, or women’s participation in economic activities could be limited to basic necessity and subsistence – activities such as selling domestic products, like eggs, baked goods, and other homemade items, mainly directed towards sustaining families through bad times (Blumberg, 2004; Rosenfeld, 1985). Practicing these activities over and over again could eventually “lock-in” women to focus on “what is” rather than “what could be,” limiting their perceptions of challenging the socially established status quo and ultimately settling for whatever rewards – if any – the societal arrangements bestow upon them. This situation is perilous to women’s entrepreneurial behaviors since entrepreneurship, by definition, is about challenging the status quo (Krueger and Brazeal, 1994). At entry into entrepreneurship, individuals are choosing to engage in economic behavior that is different from the traditional corporate employment experience (Autio and Pathak, 2010). In addition, social practices could gradually favor the interests of one gender group over the other, eventually influencing the formal rules and institutions of a country. The common practices would then assume a “gendered” orientation, suppressing the well-being of not only women, but also the broader society (North, 1994; Olson, 2000). For example, gender-specific restrictions in ownership rights limit the seamless transferability of assets in a society (Jütting *et al.*, 2006) as well as the universal implementation of intellectual property rights protection (Estrin and Mickiewicz, 2011).

It therefore becomes imperative to look at factors that have the potential to reduce gaps in, if not eliminate, gender-based occupational disparities. There is a clear relationship between women’s economic participation rates and the presence of discrimination in social institutions such as inheritance and ownership rights and civil liberties, with indications that this relationship is due in large part to women’s restricted access to resources such as education and healthcare (Jütting *et al.*, 2006). Similarly, one could expect that these gendered institutions will serve to directly restrict women’s access to resources needed for entrepreneurial endeavors. There are already indications that women in many countries encounter gender-related restrictions affecting access to economic resources essential for entrepreneurship, including financial capital (Brush, 2006).

In the following section we review effects of attitudinal variables on women's entrepreneurship before considering how gendered institutions might affect entrepreneurship both directly and indirectly through the moderation of those attitudes.

Attitudes and entrepreneurial behaviors

When potential entrepreneurs make choices, they are aware that entrepreneurial pursuits are inherently risky and that there is a chance that the venture may fail, potentially reflecting badly on the individual. Such awareness of the potential negative consequences of failed entrepreneurial endeavors may therefore inhibit individuals from entering entrepreneurial ventures. Self-efficacy beliefs and fear of failure are attitudes that are thought to bear close association with how individuals respond to these risks.

Self-efficacy is a broad social cognitive concept which includes individuals' personal estimates of their capabilities to mobilize motivations, cognitive resources, and courses of action required to exercise control over events (Bandura, 1977). Entrepreneurial self-efficacy refers specifically to individuals' beliefs that they will be able to succeed as entrepreneurs (Chen *et al.*, 1998; Zhao *et al.*, 2005). When forming intentions to perform entrepreneurial acts (such as developing a new venture), individuals are influenced by their attitudes towards, and perceptions of potential consequences. Research indicates that individuals without self-efficacy are likely to be easily discouraged, whereas individuals with self-efficacy are likely to "intensify their efforts when their performances fall short and persist until they succeed" (Bandura and Cervone, 1983, p. 1018).

From the theory of self-efficacy it follows that individuals who believe that they will succeed in establishing a firm will exhibit higher levels of entrepreneurial ambition. Studies indicate that the ability of self-efficacy and fear of failure to predict entrepreneurial activities does not depend on gender (Arenius and Minniti, 2005; Langowitz and Minniti, 2007); hence by extension, we hypothesize:

H1a. Women's perception of entrepreneurial self-efficacy will be positively related to their entry into entrepreneurship at the individual level.

Since entrepreneurship inevitably involves uncertainty and risk-taking, individuals' attitudes towards risk can inhibit the ambition to become an entrepreneur (Brockhaus, 1980). Based on social learning theory, fear of failure refers to a lack of confidence that a given course of action will be successful, which arises from the anticipated negative consequences of such failure. Psychological research shows that individuals' fear of failure is closely related to risk-taking behavior (Hancock and Teevan, 1964). It has a major influence on achievement motivation and occupational aspirations (Burnstein, 1963), and has been found to be particularly important with respect to high-risk activities such as growth-oriented entrepreneurship (Bowen and De Clercq, 2008). Noting again that the ability of attitudes to predict entrepreneurial activities does not depend on gender we hypothesize:

H1b. Women's perceived fear of failure will be negatively related to their entry into entrepreneurship at the individual level.

Direct effects and moderation effects of gendered institutions

Culture affects economic behaviors through formal and informal institutions such as laws and resource allocation mechanisms (Guiso *et al.*, 2006; Oyserman and Lee, 2008).

The embeddedness of entrepreneurship within an economic, technological, institutional, and cultural environment has been the subject of much analysis, especially by economists (Jack and Anderson, 2002). Thurik *et al.* (2002) argued that these factors influence the demand for entrepreneurship by creating opportunities and that they also have an influence on supply through influencing skills and resources within a population. Additionally, they account for differences in entrepreneurial activity across countries and over time (Reynolds *et al.*, 2005). However, there has not been much discussion about how the supply and demand of entrepreneurs can be affected by providing or withholding resources and skills for some groups and not for other groups of people within an economic or cultural environment.

In particular, women's experience of difficulties in resource acquisition and mobilization is concerning. Studies in both the private and public sectors have demonstrated how organizations actively reproduce gender divisions of labor and gendered-occupational cultures (Connell, 2006; Martin and Collinson, 2002). These gendered cultural patterns within institutions result in different levels of resource mobilization occurring across groups or of bargaining power of women and men in households (Mabsout and van Staveren, 2010).

Labor markets, in particular, have been described as being gendered in several fundamental ways. Unpaid activities primarily done by women are typically not counted in national productivity indicators (Elson, 1999). There is an expectation that women will bear the brunt of domestic tasks and childcare, but these responsibilities limit women's participation in the labor force, creating an economic disadvantage (Elson, 1999). The outcome of women's education appears to be dependent upon societal restrictions and on women's role in the wider economy (Kabeer, 2005). Since these gendered expectations could directly affect women's entrepreneurship activity, we start by considering the gendered institution of the economic participation of women.

One way labor markets could affect women's entrepreneurship is suggested by Blumberg's theory of gender stratification. It states that women's relative economic power is affected at a variety of nested levels. These levels may range from the household to the community, the social class, the ethnic group, the state, and the global economy. The theory also posits that the extent to which macro-level factors are repressive of women affect their relative economic power at the micro-levels (Blumberg, 1988). In essence, this theory suggests that each level of society imposes certain gender-based constraints or limitations that accumulate as one moves from the macro- to micro-spheres, ultimately resulting in fairly severe limitations upon what women are free to do. Macro-level gender inequality has been found to moderate the effect of individual-level variables on household division of labor (Fuwa, 2004).

Economic participation

In terms of entrepreneurship, this model strongly suggests that the economic participation component measured in indices such as the Global Gender Gap Index (GGGI: explained later in this paper) could influence women's decisions to engage in entrepreneurial activity. Women's level of economic participation affects both household income and the amount of resources available under their control, and women with this increased control of resources may then decide to invest in entrepreneurial activity – which among other processes also involves the acquisitions and mobilization of resources. Increased women's economic participation and opportunity in a society could also indicate to women the desirability of economic

activities aimed at increasing the income of their households and improving standards of living. Moreover, it could also signal the availability of non-financial resources in the form of female role models and their associated economic experience that would foster even more women to be drawn to such activities. Thus, we hypothesize:

H2a. Women's economic participation at the societal level will be positively related to their entry into entrepreneurship at the individual level.

Since Blumberg's (1988) theory is ultimately a resource-based theory it may suffer from the limitations of such an approach. Resource-based theories have been criticized for not acknowledging that people differ in their abilities to convert resources into capabilities due to personal, social, or environmental factors such as talents, social norms, legal rules, infrastructure, and so on (Robyns, 2003). Therefore, although women's level of economic participation in a culture can make it more likely that they would have the resources needed to become entrepreneurs, the conversion of these resources into entrepreneurial activity could also be constrained by other factors. Women often become entrepreneurs as a way out of poverty, often while maintaining a traditional occupation, which may limit their ability to take full advantage of entrepreneurial opportunities (Minniti, 2010).

In addition, Blumberg (1988) suggests that women's control over income leads to their increased self-esteem due to their increased autonomy. An increased sense of self-worth and self-reliance was observed in a sample of women micro-entrepreneurs who received short-term credit from a development project (Blumberg, 1986). Although self-worth is more general in nature than entrepreneurial self-efficacy, they are highly correlated and could be indicators of a broader core self-evaluation construct (Judge and Bono, 2001), suggesting the possibility of an indirect effect of women's economic participation in a society and their levels of entrepreneurship in addition to the hypothesized direct effect. An increase in the economic participation of women in a country should allow for a stronger association between entrepreneurship and self-efficacy while in a country where women's economic participation is more restricted, entrepreneurial self-efficacy is more likely to be absent overall. Thus, we hypothesize:

H2b. Women's economic participation at the societal level will moderate the effect of their perceived self-efficacy on entrepreneurial entry, such that in societies characterized by a higher degree of women's economic participation, the positive relationship between perceived self-efficacy and entry into entrepreneurship will be stronger.

We also expect a moderating effect on women's fear of failure. In countries where women's economic participation is more restricted, fear of failure with regard to economic activity is likely to be present. Likewise, nations with a higher prevalence of women's participation in economic activities either domestic or corporate could instill in them the confidence of having certain levels of enactment mastery through performing economic roles. This may lead women to overcome their fear of failure and to eventually "take the plunge" into an otherwise inherently risky activity of entrepreneurship. Thus, we hypothesize:

H2c. Women's economic participation at the societal level will moderate the effect of their perceived fear of failure on entrepreneurial entry, such that in societies

characterized by a higher degree of women's economic participation, the negative relationship between fear of failure and entry into entrepreneurship will be weaker.

Educational attainment

Although not specifically addressed by Blumberg in her gender stratification model, another factor at the societal level that could have a particular impact on women's economic activity outside of the home is the educational attainment of women. In many studies, level of education has been used as a proxy for human capital, which is the knowledge and skills in a particular population. In economic theory, human capital is viewed as the main engine of economic growth (Romer, 1990), confirmed by empirical studies across countries (Barro, 1991). This is thought to be due to the increase in individual productivity and idea generation that education brings as well as to the cross-fertilization of ideas between highly skilled and educated people within an industry (Glaeser, 2003, 2005). However, education itself is a gendered institution: In many countries there is an educational gender gap (Knowles *et al.*, 2002). With regard to entrepreneurship, education can increase women's access to knowledge that will aid in setting up a business, whether that knowledge concerns how to actually run a business or consists of expertise in the focal area of the business activity itself. Therefore, although Blumberg does not treat it directly in her theory, economists view education as an important type of capital investment, and this should also affect women and what they can accomplish economically. Thus, we hypothesize:

H3a. Women's educational attainment at the societal level will be positively related to their entry into entrepreneurship at the individual level.

However, just as with economic resources, although women's level of education in a culture can make it more likely that they would have the resources needed to become entrepreneurs, the conversion of these resources into entrepreneurial activity could be constrained by other factors (Davidsson and Gordon, 2012). Similar to what is expected with regard to economic participation, educational attainment is also likely to affect entrepreneurship indirectly, through the presence of self-efficacy and absence of fear of failure. First, an increase in educational attainment of women in a country should allow for a stronger association between self-efficacy and entrepreneurship because women who have access to increased levels of education may be much like women who have increased economic participation in terms of perceptions about their likely success as entrepreneurs. Thus, we hypothesize:

H3b. Women's educational attainment at the societal level will moderate the effect of their perceived self-efficacy on entrepreneurial entry, such that in societies characterized by a higher degree of women's educational attainment, the positive relationship between perceived self-efficacy and entry into entrepreneurship will be stronger.

We also expect a moderating effect on women's fear of failure. In countries where women are more constrained in their activities, including education, fear of failure is likely to be present. Education builds women's human capital, skills, and technical

know-how such that it could mitigate the fear of failure associated with launching an entrepreneurial venture. Thus, we hypothesize:

- H3c.* Women's educational levels at the societal level will moderate the effect of their perceived fear of failure on entrepreneurial entry, such that in societies characterized by higher levels of women's education, the negative relationship between fear of failure and entry into entrepreneurship will be weaker.

Method

Data

We obtained and analyzed survey data for only women from 53 countries for the years 2001-2008 from the Global Entrepreneurship Monitor (GEM) (Reynolds *et al.*, 2005)[1]. All data are weighted based on relevant demographic variables so as to ensure that the data are as fully representative of a given country's adult-age population as possible[2]. Our initial database comprised of 185,639 (population un-weighted) interviews of adult-age (18-64) women. This data set was complemented with country-level data on two gendered-institutions predictors – women's economic participation and opportunity and educational attainment – for the 53 countries included in our study from the GGI (explained later in this section). We also complemented this data set with several country-level controls, which are discussed in later sections of this paper.

Estimation method

We adopted a five-step strategy to test our hypotheses. First, we estimated how much variance lies in our dependent variable across countries by including no predictors or controls in our regression model. We observed significant variance suggesting that country-level factors were indeed responsible for explaining that variance. This finding necessitated a multi-level analysis since cross-country variance could adequately be explained by country-level factors alone. This was called the "null model." Second, we added individual-level predictors in the model to test individual-level hypotheses. Third, we added country-level controls in the regression model. As the fourth step, we added the two country-level gendered-institutions predictors to test country-level hypotheses. The decrease in the variance component from those observed in step three provides a measure of the extent to which country-level gendered institutions exclusively accounted for variance. Finally, we tested moderation hypotheses. These steps correspond to the five models reported in Table IV.

Dependent variable

Our dependent variable is individual-level entry into entrepreneurship by women. GEM identifies three types of entrepreneurs: first, nascent (individuals who are active in the process of starting a new firm but have not yet launched it); second, new (owner-managers of new firms who have paid wages to any employees for more than three months but <42 months); and third, established (owner-managers of firms for 42 months or longer). Since our theory looks at entry into entrepreneurship, we sampled nascent and new entrepreneurs. Only nascent and new entrepreneurs represent the entry-stage since majority of drop-outs occur in the first 42 months during which time entrepreneurs still thrive to survive, acquire, and mobilize resources and work towards evolving a well-developed organizational structure (Reynolds *et al.*, 2005). A word on the conceptualization of "entrepreneurship" as used in this paper is in order. We examine that form of entrepreneurship that entails the creation of new ventures

by women (i.e. business start-ups) and not entrepreneurship as an innovative activity within established organizations.

This operationalization yielded a data set of 185,639 observations. This dependent variable is a dummy variable (1 = yes; 0 = no) suggesting that women either qualify as nascent or new entrepreneurs (= 1) or do not qualify as one or the other (= 0). In total, 18,155 women were identified as entrepreneurs (= 1) out of a total sample size of 185,639 (9.78 percent). The entry into entrepreneurship dummy relates to women and not to new entrepreneurial ventures or firms. This is consistent with our focus on the effect of gendered institutions on entrepreneurial behaviors by women. The sample descriptive is shown in Table I.

Predictors and controls

Individual-level attitudes. We considered two attitudes that have been widely linked to entrepreneurial behaviors: an individual's fear of failure and the individual's perceived self-efficacy in their entrepreneurial efforts. Both of these predictors were obtained from the GEM data set.

Fear of failure was captured using a dummy variable (1 = yes; 0 = no) that measures an individual's lack of confidence in her ability to cope with endogenous or exogenous uncertainty associated with new business ventures, as well as the fear of anticipated consequences of such failure.

Perceived self-efficacy indicates whether the individual thought that she possessed the knowledge, skills, and experience required to start a new business. This was operationalized as a dummy variable (1 = yes; 0 = no).

Country-level gendered institutions. Data on gendered institutions were obtained from the GGGI report (Hausmann *et al.*, 2010). The GGGI, introduced by the World Economic Forum in 2006, is a framework for capturing the magnitude and scope of gender-based disparities and tracking their progress. The GGGI provides four indices that benchmark aspects of national gender gaps on economic, political, educational, and health-based criteria, respectively. We used scores on each of these four indices for all countries in our sample. Two of the indices – women's economic participation and opportunity and educational attainment – were used as predictors, while the other two indices – health and survival and political empowerment – were used as controls and are discussed below.

These indices reflect "gaps" capturing gender-based disparities. This is attained by converting data for women and men into female/male "ratios." For example, a country with 20 percent participation of women in economic activities is assigned a ratio of 20 women/80 men = 0.25 on that particular variable. This ensures that the indices are capturing "gaps" or disparities between women's and men's attainment levels, rather than the "levels" themselves. This operationalization of gender disparities expressed in terms of "gaps" (or "ratios") is a meaningful reflection of women's societal positions relative to men and in line with our definition of gendered institutions. Using mere "levels" for women's attainments as predictors – exclusive of how they compare against men, although useful, may compromise the primary focus of this study – ability to explain the influence of gendered institutions on women's entrepreneurial behaviors. This is because it is possible, for example, that a country would have low levels of both male and female labor force participation. In this case, although women's participation rates are low, there may be low inequity as compared with another country with similarly low female labor force participation rates but high male labor force participation rates.

Country	<i>n</i> ^a	% rates of women's entry into entrepreneurship ^b	Self- efficacy ^c	Fear of failure ^d	Economic participation and opportunity ^e	Educational attainment ^f
Argentina	2,702	10.70	0.56	0.44	0.60	1.00
Australia	2,638	7.73	0.45	0.35	0.74	1.00
Austria	767	6.91	0.49	0.43	0.60	0.99
Belgium	3,227	2.63	0.28	0.31	0.71	0.99
Bolivia	712	34.83	0.79	0.40	0.60	0.96
Brazil	2,569	14.29	0.52	0.42	0.64	0.99
Chile	3,709	13.05	0.58	0.41	0.53	1.00
China	2,752	14.43	0.32	0.23	0.69	0.98
Colombia	2,245	22.63	0.66	0.33	0.69	1.00
Croatia	2,821	5.46	0.48	0.34	0.66	0.99
Czech Republic	1,134	4.32	0.32	0.34	0.62	1.00
Denmark	6,402	3.78	0.29	0.40	0.74	1.00
Ecuador	512	20.70	0.72	0.35	0.60	0.99
Egypt	531	9.42	0.53	0.35	0.45	0.90
Finland	2,788	5.70	0.33	0.38	0.76	1.00
France	5,172	1.95	0.22	0.47	0.66	1.00
Germany	11,656	4.43	0.29	0.53	0.71	0.99
Greece	1,809	7.90	0.50	0.60	0.62	0.99
Hungary	3,297	4.91	0.39	0.33	0.69	0.99
Iceland	2,789	9.32	0.40	0.43	0.75	1.00
India	1,480	10.61	0.48	0.31	0.40	0.84
Indonesia	860	23.49	0.54	0.38	0.58	0.96
Iran	778	6.43	0.60	0.28	0.43	0.96
Ireland	1,641	8.10	0.48	0.38	0.74	1.00
Israel	2,336	3.34	0.32	0.40	0.69	0.99
Italy	1,564	4.22	0.33	0.42	0.59	0.99
Latvia	1,795	3.18	0.31	0.43	0.75	1.00
Macedonia	586	10.92	0.56	0.41	0.68	0.99
Malaysia	429	19.11	0.54	0.49	0.58	0.99
Mexico	2,624	8.42	0.52	0.27	0.52	0.99
The Netherlands	4,677	4.36	0.30	0.26	0.72	1.00
New Zealand	999	13.31	0.51	0.30	0.77	1.00
Norway	3,090	4.85	0.33	0.24	0.83	1.00
Peru	2,180	36.93	0.80	0.32	0.62	0.98
Philippines	678	28.32	0.79	0.40	0.76	1.00
Poland	1,314	3.88	0.22	0.45	0.65	1.00
Portugal	682	6.89	0.46	0.44	0.67	0.99
Romania	1,328	2.18	0.21	0.38	0.71	0.99
Russia	1,869	1.87	0.10	0.34	0.74	1.00
Singapore	2,958	4.90	0.23	0.39	0.75	0.94
Slovenia	3,319	4.25	0.39	0.32	0.72	1.00
South Africa	3,748	7.39	0.32	0.29	0.67	1.00
South Korea	1,965	7.33	0.20	0.46	0.52	0.95
Spain	30,970	6.56	0.49	0.51	0.62	1.00
Sweden	3,388	2.21	0.35	0.37	0.77	1.00
Switzerland	2,790	5.95	0.41	0.37	0.73	0.98
Thailand	3,634	17.34	0.38	0.57	0.72	0.99
Turkey	1,697	4.71	0.43	0.37	0.39	0.91
UAE	852	3.29	0.47	0.33	0.46	1.00

Table I.
Sample descriptives

(continued)

Country	<i>n</i> ^a	% rates of women's entry into entrepreneurship ^b	Self- efficacy ^c	Fear of failure ^d	Economic participation and opportunity ^e	Educational attainment ^f
UK	31,053	5.12	0.41	0.37	0.72	1.00
Uruguay	1,468	10.01	0.52	0.35	0.66	1.00
USA	6,213	8.95	0.47	0.22	0.80	1.00
Venezuela	442	24.89	0.75	0.32	0.61	1.00
	185,639	9.78	0.44	0.38	0.65	0.98

Notes: ^a*n*, total observations 2001-2008. ^bPercentage of women who were identified as either nascent or new entrepreneurship (dependent variable = 1) across countries out of *n* observations in that country from 2001 to 2008 (**Source:** GEM dataset). ^cAverage self-efficacies of women in a given country from 2001 to 2008. Women's self-efficacy was measured as a dummy (0 = no self-efficacy, 1 = possess self-efficacy) (**Source:** GEM dataset). ^dAverage fear of failure of women in a given country from 2001 to 2008. Women's fear of failure was measured as a dummy (0 = not fearful of failure, 1 = fearful of failure) (**Source:** GEM dataset). ^eWomen's Economic Participation and Opportunity averaged (**Source:** GGGI dataset). ^fWomen's Educational Attainment (**Source:** GGGI dataset)

Table I.

The economic participation and opportunity index is a composite created from five sub-items that report gender disparities in the form of ratios of women over men in: labor force participation; wage inequality for similar work; estimated income; number of senior and managerial positions and positions in legislatives; and number of professional and technical workers. Similarly, the educational attainment index is a composite created as ratios of women over men in literacy, net primary, net secondary, and net tertiary enrollment. The sub-items are first weighted and then averaged to yield the respective scores on the two indices (Appendix)[3]. We *z*-standardized these two country-level predictors such that the association with entry into entrepreneurship can be interpreted based upon a one standard deviation change in each of these predictors.

Interaction terms. We created four interaction terms – women's economic participation and self-efficacy, economic participation and fear of failure, educational attainment and self-efficacy, and educational attainment and fear of failure, to test proposed moderation effects. *Z*-scores of gendered institutions were multiplied with the *z*-scores of the two attitudinal variables[4].

Country-level and individual-level controls. GEM research suggests that a country's level of economic development may influence the nature and distribution of entrepreneurial activity (van Stel *et al.*, 2005). We therefore controlled for the country's GDP per capita (purchasing power parity, obtained from the International Monetary Fund's World Economic Outlook database). National aggregates of GDP per capita for years 2001-2008 were used. We included two additional gendered institutions – health and survival, and political empowerment – as controls (also obtained from the GGGI report and *z*-standardized and shown in Appendix). As an additional control we used the Human Development Index (HDI) obtained from the UNDP Report, which is a measure of various pillars of human development in a country, including life expectancy, literacy, education, standards of living, well-being (mainly child welfare), and quality of life. These pillars are aggregated into one composite measure of HDI, with minimum and maximum scores for countries of 0 and 1, respectively. Finally, we controlled for country's regulatory framework obtained from the World Governance Index. This reflects the quality of contract enforcement and the extent to which agents

have confidence in and abide by the rules of society, the strength of property rights protection regimes, the police, and the courts, as well as effectiveness in dealing with crime and violence. Scores range from a minimum of -2.5 to a maximum of 2.5 representing weak and strong governance performances, respectively.

An individual's age is an important influence on entry into entrepreneurship (Arenius and Minniti, 2005). We therefore controlled for the age of women interviewed, as well as the squared term of age in order to capture any curvilinear associations. Finally, we controlled for education using a four-step education level scale (4 = graduate experience) and household income with a three-step income tier scale (3 = highest income tier). In the next section, we proceed towards explaining the results of our analyses.

Results

Tables II and III show the descriptive statistics and correlation matrix. Table IV shows the association with women's entry into entrepreneurship. We performed a variance inflation factor (VIF) test on all our variables to check for multi-collinearity. The VIF test confirmed that our variables did not suffer from such issues.

Intra-class correlation coefficient (ICC)

Significant between-country variance necessitates multi-level analysis (Hofmann, 1997) over ordinary least square. To check this, we estimated a multi-level logistic regression as null model without predictors. The ICC or ρ estimated how much of the variance in the dependent variable resided between countries. As can be seen in Model 1 of Table IV, the ICC indicates that up to 17 percent (ρ) of the variance in women's entry into entrepreneurship resided between countries.

Table IV shows the influence of country-level predictors on the probability of women's entry into entrepreneurship (reported as odds ratios). Country-level predictor estimates are standardized β coefficients while all others are non-standardized. Random-effect logistic regression models are reported in Models 2, 3, and 4 along with

Variables	<i>n</i>	Mean	SD	Minimum	Maximum
<i>Individual-level variables</i>					
Entry into entrepreneurship	185,639	0.07	0.26	0	1
Age	185,639	43.27	14.96	18	64
Education level	185,639	2.22	1.08	0	4
Household income	185,639	1.82	0.78	1	3
Self-efficacy	185,639	0.41	0.49	0	1
Fear of failure	185,639	0.40	0.49	0	1
<i>Country-level variables</i>					
GDP, per capita, \$KUSD	53	31,271.69	16,903.22	1,371	84,144
Human development index	53	0.83	0.08	0.52	0.94
Regulatory framework	53	1.08	0.82	-1.56	1.98
Health and survival	53	0.97	0.01	0.93	0.98
Political empowerment	53	0.28	0.14	0.02	0.67
Economic participation and opportunity	53	0.68	0.08	0.39	0.83
Educational attainment	53	0.99	0.02	0.84	1.00

Table II.
Sample descriptives

Note: *n*, mean, and SD columns present population-weighted values

estimates for the fixed part (estimates of coefficients) and random part (variance estimates) as well as model fit statistics.

Association of women's attitudes with entrepreneurial behaviors

Model 2 of Table IV reports the association of women's perceived self-efficacy (*H1a*) and fear of failure (*H1b*) with entry into entrepreneurship. Women with self-efficacy are six times (odds ratio = 6.07; $p < 0.001$) more likely to enter into entrepreneurship than those without any, whereas women with fear of failure are 31 percent (1-0.69; $p < 0.001$) less likely to engage in entrepreneurship than those without any. Combined, we find support for *H1a* and *H1b*.

Association of gendered institutions with women's entry into entrepreneurship

Model 4 of Table IV shows the association of women's economic participation (*H2a*) and educational attainment (*H3a*) with the probability of women's entry into entrepreneurship. The odds ratio indicates that an increase of one standard deviation in women's economic participation was linked positively with the likelihood of women's entry by 15 percent (odds ratio = 1.15; $p < 0.05$). We observed no statistically significant effect of educational attainment on women's entry into entrepreneurship. Combined, these findings support *H2a* but not *H3a*.

Noteworthy of attention is that the variance component of the random intercept decreased from 0.28 in Model 3 of Table IV to 0.24 in Model 4 of Table IV, suggesting that the addition of the two country-level gendered-institutions predictors exclusively explained 14 percent ($((0.28 - 0.24) / 0.28) \times 100$) of the remaining country-level variance in women's entry into entrepreneurship after the individual-level controls, predictors, and country-level controls have been accounted for. This finding consolidated the fact that country-level gendered institutions are salient predictors on women's entry into entrepreneurship at the individual level.

Moderation effects

Model 5 of Table IV reports the estimates of the interaction effects. Four hypotheses related to the moderation effects were tested. We observed statistical significance for three (*H2b*, *H2c*, and *H3b*) out of four interaction terms. They are the interactions between women's economic opportunity and participation and self-efficacy ($p < 0.05$) and educational attainment and self-efficacy ($p < 0.01$) and between economic participation and fear of failure ($p < 0.05$). The effect size as well as the directionality of these three interaction terms could be best explained when plotted graphically. These are plotted in Figures 2-4.

Figure 2 shows that countries where women's economic participation is higher, the positive effect of self-efficacy on entry into entrepreneurship is strengthened (comparing the high-economic participation and low-economic participation series at low and high self-efficacies). Similarly, Figure 3 shows that countries where women's educational attainment is higher, the positive effect of self-efficacy on entry into entrepreneurship is strengthened (comparing the high-economic participation and low-economic participation series at low and high self-efficacies). Finally, Figure 4 shows that countries where women's educational attainment is higher, the negative effect of fear of failure on entry into entrepreneurship is diminished (comparing the high-economic participation and low-economic participation series at low and high fears of failures).

Table III.
Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Entry into entrepreneurship	1.00												
2. Age	-0.08*	1.00											
3. Education level	0.03*	-0.13*	1.00										
4. Household income	0.04*	-0.11*	0.22*	1.00									
5. Self-efficacy	0.24*	-0.08*	0.11*	0.09*	1.00								
6. Fear of failure	-0.06*	-0.04*	-0.04*	-0.03*	-0.12*	1.00							
7. GDP per capita, KUSD	-0.10*	0.14*	0.16*	0.01*	-0.09*	-0.01*	1.00						
8. Human development index	-0.11*	0.16*	0.16*	0.01*	-0.06*	0.03*	0.60*	1.00					
9. Regulatory framework	-0.12*	0.16*	0.14*	-0.01*	-0.08*	0.01*	0.63*	0.59*	1.00				
10. Health and survival	-0.02*	0.05*	0.02*	0.04*	0.01*	0.06*	0.01*	0.32*	0.01*	1.00			
11. Political empowerment	-0.04*	0.04*	0.06*	0.01*	-0.01*	0.04*	0.48*	0.43*	0.51*	-0.01*	1.00		
12. Economic participation and opportunity	-0.04*	0.14*	0.10*	0.02*	-0.01*	-0.05*	0.56*	0.43*	0.53*	0.06*	0.20*	1.00	
13. Educational attainment	-0.03*	0.09*	0.06*	0.00*	-0.01*	0.01*	0.28*	0.47*	0.30*	0.41*	0.28*	0.51*	1.00

Note: *Statistical significance at $p < 0.05$

	Model 1	Model 2	Model 3	Model 4	Model 5 ^a
<i>Fixed part estimates</i>					
Individual level					
Age		0.98 (0.00)*** 0.99 (0.00)***	0.98 (0.00)*** 0.99 (0.00)***	0.98 (0.00)*** 0.99 (0.00)***	-0.02 (0.00)*** -0.001 (0.00)***
Age (squared)					
Education level (0 = none as baseline)					
1 (some secondary)		3.52 (1.48)**	3.50 (1.47)**	3.52 (1.48)**	1.25 (0.42)**
2 (secondary)		3.51 (1.47)**	3.51 (1.47)**	3.51 (1.47)**	1.25 (0.42)**
3 (post-secondary)		3.57 (1.50)**	3.58 (1.50)**	3.57 (1.50)**	1.27 (0.42)**
4 (graduate)		4.24 (1.78)***	4.26 (1.79)***	4.24 (1.78)***	1.43 (0.42)***
Household income (1 = lower tier as baseline)					
2 (middle tier)		1.03 (0.02)***	1.03 (0.02)	1.03 (0.02)***	0.04 (0.02)***
3 (upper tier)		1.15 (0.03)***	1.14 (0.03)***	1.15 (0.03)***	0.14 (0.02)***
Self-efficacy (H1a)		6.07 (0.15)***	6.07 (0.15)***	6.07 (0.15)***	1.82 (0.02)***
Fear of failure (H1b)		0.69 (0.01)***	0.69 (0.01)***	0.69 (0.01)***	-0.38 (0.02)***
Country level					
GDP per capita, KUSD		0.99 (0.00)	0.99 (0.00)	0.99 (0.00)***	-0.00 (0.00)***
Human development index		0.93 (0.12)	0.93 (0.12)	0.93 (0.12)	-0.11 (0.15)
Regulatory framework		1.03 (0.18)	1.03 (0.18)	1.07 (0.20)	0.07 (0.20)
Health and survival		0.97 (0.06)	0.97 (0.06)	0.95 (0.05)	-0.07 (0.06)
Political empowerment			1.18 (0.10)***	1.10 (0.09)	0.06 (0.08)
Economic participation and opportunity (H2a)				1.15 (0.05)*	0.10 (0.05)*
Educational attainment (H3a)				0.98 (0.07)	-0.02 (0.07)
Interaction terms					
Economic participation and opportunity × self-efficacy (H2b)					0.03 (0.01)*
Educational attainment × self-efficacy (H3b)					0.06 (0.02)**

(continued)

Table IV.
Association of individual-level attitudes and gendered institutions with women's entry into entrepreneurship (odds ratio)

Table IV.

	Model 1	Model 2	Model 3	Model 4	Model 5 ^a
Economic participation and opportunity × fear of failure (H2c)					0.04 (0.01)*
Educational attainment × fear of failure (H3c)					-0.12 (0.1)
<i>Random part estimates</i>					
Variance of intercept	0.70 (0.08)	0.42 (0.05)	0.28 (0.05)	0.24 (0.05)	0.26 (0.05)
Variance of overall residue	3.44	3.26	3.23	3.03	3.28
% of variance explained (ρ)	17.0 (0.02)	11.4 (0.01)	7.97 (0.01)	7.33 (0.01)	7.33 (0.01)
<i>Model fit statistics</i>					
Number of observations	185,639	185,639	185,639	185,639	185,639
Number of countries	53	53	53	53	53
Number of variables in the model	0	10	15	15	19
χ^2	-	7,502	7,535	7,582	7,597
Probability > χ^2	-	***	***	***	***
Log likelihood	-45,840	-40,348	-40,338	-40,230	-40,226
Likelihood ratio test of ρ	***	***	***	***	***

Notes: Standard errors in parentheses. Columns represent odds ratio (OR) instead of regression estimates. OR > 1 signal positive association. OR < 1 signal negative association. ^aModel 4 reports beta-coefficients and not OR since graphical representation are meaningfully expressed by using beta-coefficients. *** $p < 0.01$; ** $p < 0.001$; * $p < 0.05$ two-tailed significances for hypotheses

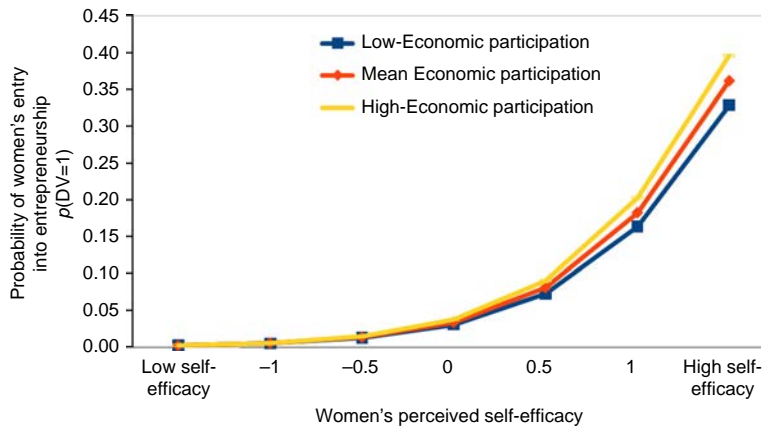


Figure 2. Interaction between economic participation and self-efficacy

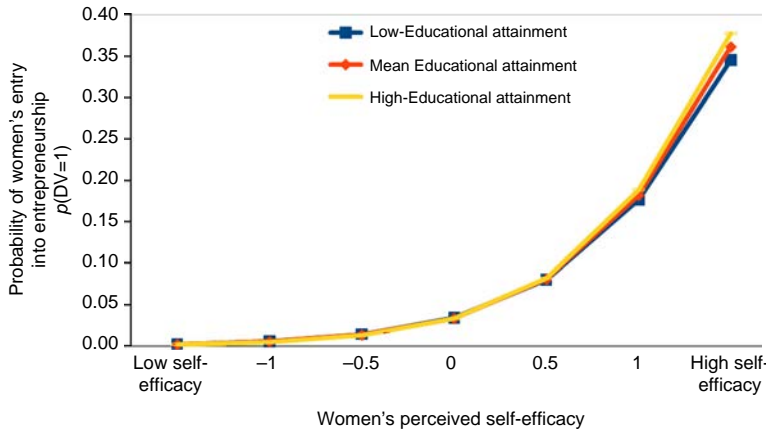


Figure 3. Interaction between educational attainment and self-efficacy

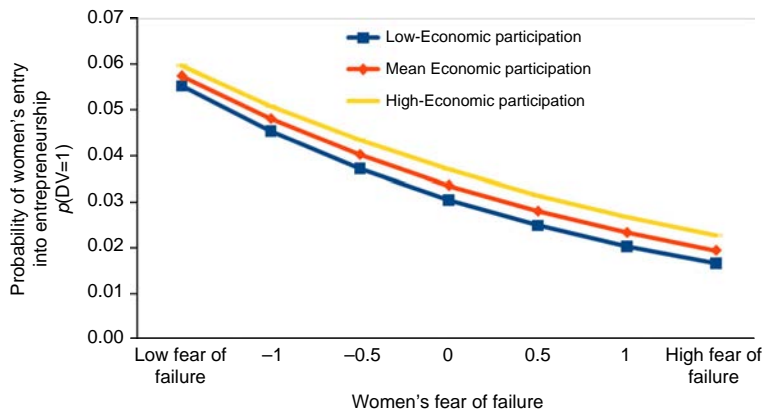


Figure 4. Interaction between economic participation and fear of failure

Discussion

This study investigated women's entry into entrepreneurship within the prevailing context of gendered institutions. While fear of failure and self-efficacy remained salient predictors of women's entrepreneurial behaviors, women's economic participation and educational attainment at the country level also emerged as meaningful predictors of such behaviors.

In particular, our study found support for the proposed association between individual and institutional factors with women's entrepreneurial behaviors. Women's self-efficacy and fear of failure were observed to be associated positively and negatively with such behaviors, respectively. Further, women's economic participation and opportunity in a country was positively linked to women's entrepreneurial behaviors. Although women's educational attainment was observed to be positively related to women's entry into entrepreneurship, this effect was not statistically significant and warrants future research. These results suggest that a favorable cultural environment that encourages women's economic activity, including greater parity in salaries and work-related factors, will result in an increased level of entrepreneurial interest by women.

Gendered institutions were observed to moderate individual-centric attitudes. In particular, gendered institutions moderated positively the relationship between entrepreneurial self-efficacy and entry into entrepreneurship. Within a national context that adequately equalizes women's participation in economic activities, women's self-efficacy would favor entrepreneurial entries. For women who possess entrepreneurial self-efficacy, the expectation of gender equality in economic pursuits makes entrepreneurship attractive. In cultures where economic parity is not the norm, women's self-efficacy may not be sufficient for them to act upon observed entrepreneurial opportunities. This may create a perceptual barrier, discouraging females from engaging in what is already widely considered to be "risky" behavior.

We also observed a moderating effect of educational attainment on the relationship between entrepreneurial self-efficacy and women's entry into entrepreneurship. In other words, a cultural context in which females routinely acquire levels of education at par with their male counterparts leads to increased entry into entrepreneurship for females with self-efficacy. The value of education is, therefore, evident in these findings. It is critical to provide equal educational opportunities for females, not only because of the specific knowledge attained, but also because this societal gendered institution creates a context that promotes entrepreneurial behavior. The economy of an entire nation might respond favorably to an improvement in this contextual factor. Combined, there is support for the fact that the way women's personal attitudes shape their entrepreneurial behaviors is contingent upon gender disparities at the societal level. Summing up, we found support for six out of eight proposed hypotheses.

Conclusion

We make significant contributions to the literature on women's entrepreneurship that has implications for research. First, using a sociological model of gender stratification, we offer a new research perspective that departs from theories that predominantly explain women's entrepreneurship by adopting a gender-neutral approach. We generated hypotheses that collectively articulated how individual as well as contextual factors shape women's entrepreneurial behaviors. Multi-level approaches such as this have accounted for observed cross-country variance in women's rates of self-employment (observed, e.g. to be between 20 percent in Ireland, Sweden, and UK

and 40 percent in Belgium and Portugal; Parker, 2009), and rates of total women's entrepreneurial activity, observed (e.g. to be between 1.2 percent in Japan and 39 percent in Peru; Minniti *et al.* 2005). In spite of this, only a few studies, such as those of Elam and Terjesen (2010) and Verheul *et al.* (2006), have attempted to explain the lower rates of female entrepreneurship around the world. However, these studies have been limited to a sample of fewer than 30 countries. In contrast, our study included 53 countries across five continents and found that the two country-level gendered institutions we examined accounted for a substantial 14 percent of the variance in women's entry into entrepreneurship across countries after other individual-level and country-level factors were accounted for. Additionally, our study indicated that gendered institutions moderate the strength of the association between women's attitudes and their entrepreneurial behaviors.

Second, by looking at the influence of gender disparities, measured as "gaps" instead of "levels," on women's entrepreneurial behaviors, we provide unique insights that have thus far been overlooked by studies that are limited to comparing entrepreneurship between men and women or those that attempt to show gender effects in entrepreneurship. Using measures of gender "gaps" allows for a better understanding of how women's position in societies relative to men shape their entrepreneurial behaviors, something that would not be possible to explain by merely using women's attainment "levels." As discussed previously, examining gaps rather than levels takes into account that it is possible that a country could have low levels of female labor participation, but relatively low inequity as well because the male participation rate is not high either. Conversely, measuring levels and finding a high female labor participation rate can be misleading if the male labor participation rate in the country is much higher. This is a particularly important consideration given that World Bank figures indicate that the labor force participation rate across various countries ranges considerably, from around 42 to 86 percent depending on the year (<http://data.worldbank.org/indicator/SL.TLF.CACT.ZS>).

In spite of these contributions, our study had limitations. First, our dependent variable of entry into entrepreneurship considers women who are either nascent or new entrepreneurs. While women's economic participation and rates of nascent entrepreneurship may not be inter-correlated, it may be so with rates of new entrepreneurship. Second, women's self-efficacy and fear of failure obtained from the GEM survey were measured as dichotomous variables (0 or 1) – i.e. women either not possessing or possessing those attitudes, thus failing to capture additional degrees of variation in those attitudes. In addition, use of dichotomous measures may limit the ability to capture comprehensively any cross-country cultural effects (if any exist) on those attitudes. Third, we did not theorize about possible mediation effects such as gendered institutions shaping women's attitudes that in turn affect women's entry into entrepreneurship. Finally, although gendered institutions capture an aspect of culture, our study is limited in the sense that it did not include mainstream cultural variables, such as individualism, collectivism, gender egalitarianism, uncertainty avoidance, performance orientation, and so forth. These limitations warrant future research.

Lastly, our findings provide important social implications. Results of the current study provide additional support for the positive role that gender parity plays in both social justice and economic endeavors. Clearly, the results indicate what strategies are likely to work or not work in terms of how to improve social justice. Development work at the grassroots level to improve social justice is unlikely to be effective if social structures at the societal-level place constraints on whether individual-level entrepreneurial proclivities are free to emerge. Also, improved parity in the gendered

institutions of economic participation and education is necessary if countries wish to encourage entrepreneurial behavior as part of an economic growth strategy. Although societies may find ways to improve entrepreneurial attitudes of women, such as by acknowledging successful ventures or providing female role models, these endeavors at improving women's entrepreneurial self-efficacy and reducing fear of failure are unlikely to be associated with increased entrepreneurship unless the society also has gender parity in terms of economic participation and education.

Although our study contributes to the literature on contextual influences on women's entrepreneurship, research on the effects of gendered institutions on women's entrepreneurial behaviors is of recent origin. Our study of the combined influences of women's individual-centric attitudes and national gendered institutions on women's entrepreneurial behaviors suggests that, fundamentally, the social and cultural context, including gendered institutions, has a profound influence on their economic activity such as entrepreneurship. Further work needs to be done in this area to advance the understanding of these valuable influences.

Notes

1. Details on GEM operationalization are available at: www.gemconsortium.org
2. Weights include gender and age. Depending on country, additional weights can be used, such as ethnic or religious affiliation.
3. Since gendered-institutions variables are created using information from the same survey and the same methods, they may be susceptible to common method variance which may introduce a spurious amount of correlation among them. Multi-collinearity test and principal component factor analysis provided evidence that this was not the case.
4. We tested if self-efficacy and fear of failure mediated the effect of gendered-institutions, but observed none. Thus finding support for moderation and not for mediation, our study provides insights into contingencies that influences of attitudes on women's entrepreneurial behaviors are subjected to.

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(Appendix follow overleaf.)

Sub-index	Variable	Source
Economic participation and opportunity	Labor force participation	International Labor Organization (ILO), <i>Key Indicators of the Labor Market, 2009</i>
	Wage equality	World Economic Forum (WEF), 2010
	Estimated earned income	United Nations Development Programme, <i>Human Development Report (UNDPHDR) 2009</i> , 2007 or latest
	Legislators, senior officials and managers	ILO, <i>LABORSTA Internet</i> , 2008 or latest; UNDPHDR, 2009, most recent between 1999 and 2007
Educational attainment	Professional and technical Literacy rate	Same as above UNESCO Institute for Statistics, <i>Education Indicators</i> , 2008 or latest; <i>World Data Bank</i> , 2008 or latest; UNDPHDR, 2009, most recent between 1999 and 2007
	Net primary level enrolment	Same as above but for 2009
	Net secondary level enrolment	UNESCO Institute for Statistics, <i>Education Indicators</i> , 2008 or latest; <i>World Data Bank</i> , 2008 or latest
Political empowerment	Gross tertiary level enrolment	Same as above
	Seats in parliament	Inter-Parliamentary Union (ILU) – <i>National Women in Parliaments 2010</i> ; UNDPHDR 2009
	Ministerial level seats Number of years with a female head of state or government (last 50 years) over male value	ILU, <i>Women in Politics: 2010</i> WEF, 2010
Health and survival	Sex ratio at birth	Central Intelligence Agency, The CIA WorldFactbook, 2010
	Healthy life expectancy	World Health Organization, <i>Global Health Observatory 2007</i>

Table AI.
All variables measure ratios of women over men values

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