Institutional support and women's entrepreneurial self-efficacy

Tomoyo Kazumi
School of Commerce, Senshu University, Kawasaki, Japan, and
Norifumi Kawai
Department of Business and Management, University of Sussex, Brighton, UK

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Abstract

Purpose – The purpose of this study is to explores the extent to which local institutional forces affect female entrepreneurial venture performance. Drawing upon a unified theoretical framework of social cognitive and institutional perspectives, the authors scrutinize the complex interplay among institutional support, entrepreneurial cognitions and entrepreneurial success.

Design/methodology/approach – Based on a unique sample of 202 female entrepreneurs in 30 provinces throughout Japan, this paper grounded social cognitive theory and attempted to clear the relation between women's entrepreneurial self-efficacy and venture performance empirically by statistical analysis.

Findings – The findings of structural equation modeling indicate that women's entrepreneurial self-efficacy is a strong and useful mediator of the effect of informal institutional support on venture performance. Unexpectedly, formal institutional support shows no correlation with entrepreneurial self-efficacy.

Practical implications – This study proposes that perceived social legitimacy may lead to increased entrepreneurial self-efficacy, thereby enhancing venture performance. This finding can clarify the institutional force pathways to foster entrepreneurial confidence.

Originality/value – This study contributes to the field of female entrepreneurship by examining institutional antecedents of women's entrepreneurial self-efficacy. Focused on the case of Japanese female entrepreneurs, this study is unique and valuable.

Keywords Female entrepreneurs, Japan, Entrepreneurial success, Entrepreneurial self-efficacy, Institutional support

Paper type Research paper

Introduction

Female entrepreneurship has been commonly acknowledged as an essential driver of sustainable economic development and employment creation, with impacts on social exclusion and poverty (Langowitz and Minniti, 2007). Notably, the number of female entrepreneurs has been rapidly increasing due to continued efforts by policymakers worldwide to empower

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women and to explore their leadership potential through the provision of institutional support (Ahl and Nelson, 2015; Welsh *et al.*, 2014). According to the Global Entrepreneurship Monitor (GEM) Women's Special Report (2015), overall Total Early Stage Entrepreneurship Activity (TEA) rates have risen by 7 per cent since 2012. Despite the recent positive trend in the number and size of women-led businesses, the relevance of female entrepreneurship for theoretical advancement and management practice has not yet received adequate scholarly attention (Ahl, 2006; Brush *et al.*, 2010; De Bruin *et al.*, 2006; Jennings and Brush, 2013; Minniti and Naudé, 2010).

Although entrepreneurial self-efficacy is a crucial element for women's entrepreneurial activity, limited scholarly attention has been devoted to the antecedents and consequences of self-efficacy in women's entrepreneurship research (Bulanova *et al.*, 2016). Particularly, very few studies in the field of female entrepreneurship have conceptualized and empirically evaluated how institutions affect the psychological aspect of women's entrepreneurship. Building upon an institutional and social cognitive model of women's entrepreneurial behavior, we attempt to address this research gap.

Japan has been considered a country of sustained excellence due to its success in higher education and technological leadership (Welsh *et al.*, 2014). However, according to the GEM annual report published in 2014, Japan ranked at the lowest level of TEA among innovation-driven economies. The report shows that Japan's rate of female TEA accounts for only 1.50 per cent, which is well below the regional average of 11.35 per cent; thus, the role played by Japanese female entrepreneurs in society is negligible. The extant literature identifies reasons for these low levels of female self-employment. For example, one of the most important obstacles to women's entrepreneurial activity involves the taken-for-granted beliefs concerning gender roles and stereotyping embedded in Japanese society (Welsh *et al.*, 2014). Japan's male-dominated culture influences women to make commitments to family responsibilities and household arrangements (Futagami and Helms, 2009).

This study makes several important contributions to the literature on entrepreneurship by addressing the following points. *First*, this study extends the literature on self-efficacy and contributes to the field of female entrepreneurship by examining institutional antecedents of women's entrepreneurial self-efficacy. *Second*, consistent with McGregor and Tweed's (2002) recommendation, the current study conducts quantitative research within one homogenous sample and aims to understand the variation among female entrepreneurs. This point distinguishes our research from the majority of prior work, which has extensively scrutinized the comparative factors that affect entrepreneurial outcomes between genders (Brush *et al.*, 2009; Langowitz and Minniti, 2007; Mari and Poggesi, 2016). *Third*, we focus on the case of Japanese female entrepreneurs and their ventures rather than on women in Anglo-Saxon countries, where entrepreneurship has attracted a great deal of research attention over the past few decades (Mari and Poggesi, 2016). Moreover, this study illustrates the significance of understanding the cognitive aspect of Japanese female entrepreneurs' experience of gendered constraints on their career options. *Lastly*, unlike the majority of the empirically driven research that examines behavioral intentions using samples of students, our research places particular emphasis on a sample of active female entrepreneurs. Our fine-grained, empirical research, which is dedicated to the promotion of the phenomenon of female entrepreneurship, can assist policymakers in designing and implementing more effective gender-sensitive government policies.

Literature review and hypotheses development

Institutional conditions and entrepreneurship

Institutional theory is of great relevance in entrepreneurship research. This is because entrepreneurship can be classified as an economic behavior that is embedded in the institutional environment of a society, community or country (Aldrich and Fiol, 1994; Baumol, 1990). Institutional theory assumes that institutions constitute the "rules of the game" that shape the course of individuals' behavior and beliefs (Meyer and Scott, 1983; North, 1990; Powell and DiMaggio, 1991; Scott, 2014; Williamson, 1985). In the regulatory and legal domain of institutions, individuals are encouraged to pursue their interests under formal rules of conduct. Conversely, such normative and cognitive pillars shape individuals' beliefs, decisions and actions through implicit rules regarding what is morally appropriate in a community or society (Suchman, 1995).

In an extension of this institutional perspective, researchers of entrepreneurship emphasize that entrepreneurial mindsets and behaviors are shaped by the regulatory, normative and cognitive institutional systems that control access to a wide range of critical resources (Aldrich and Fiol, 1994; Lim *et al.*, 2010). Kibler *et al.* (2014) argue that entrepreneurs align themselves with and conform to the rules, laws and social norms in the macro-level institutional environment to gain economic efficiency as well as social legitimacy.

Prior empirical research on the link between institutions and female entrepreneurship reports mixed results (Yousafzai *et al.*, 2015; Goltz *et al.*, 2015; Lee and Marvel, 2014; Thébaud, 2015). Given these inconsistent results, we can suggest that some complexity may persist in the relationship between institutions and women's entrepreneurial behaviors; thus, we emphasize the need to investigate the potential sequential process by which institutions may energize or damage female entrepreneurs' long-term survival and business growth. This finding echoes the issue addressed by female entrepreneurship scholars that detailed examinations of the underlying mechanism through which institutional arrangements affect women's entrepreneurial outcomes remain absent (Ahl, 2006; Hughes *et al.*, 2012).

Until now, what remains overlooked is the mediating role of entrepreneurial cognitions in the relationship between institutions and women's entrepreneurial behaviors. Grounded in the social cognitive perspective (Bandura, 1977, 1982, 1997), we hypothesize that institutional conditions may help to activate the cognitive process of female entrepreneurs, which ultimately would enhance their venture performance. In particular, self-efficacy represents a key aspect of psychological capital that positively influences the self-regulation of an individual's complex decision-making capabilities (Bandura, 1977; Staw and Boettger, 1990). Once female entrepreneurs receive legal support and social legitimacy, they will overcome the uncertainties and risks involved in running and growing their business operations (Suchman, 1995) and, in turn, become highly self-efficacious. The conceptual model for this study is presented in Figure 1 below.

Formal institutional support and entrepreneurial self-efficacy

The legal framework is essential to entrepreneurship because it influences entrepreneurial cognitions, such as willingness, confidence and visions (Lim *et al.*, 2010; Yousafzai *et al.*, 2015). From an institutional perspective, formalized institutional benefits – such as financial grants, subsidies, one-on-one counselling and technical and legal guidance – are widely recognized in the entrepreneurship literature as the key determinants of women's entrepreneurial efforts (Mũnoz and Kibler, 2016). The institutionalization of female entrepreneurship through legal rules elicits the

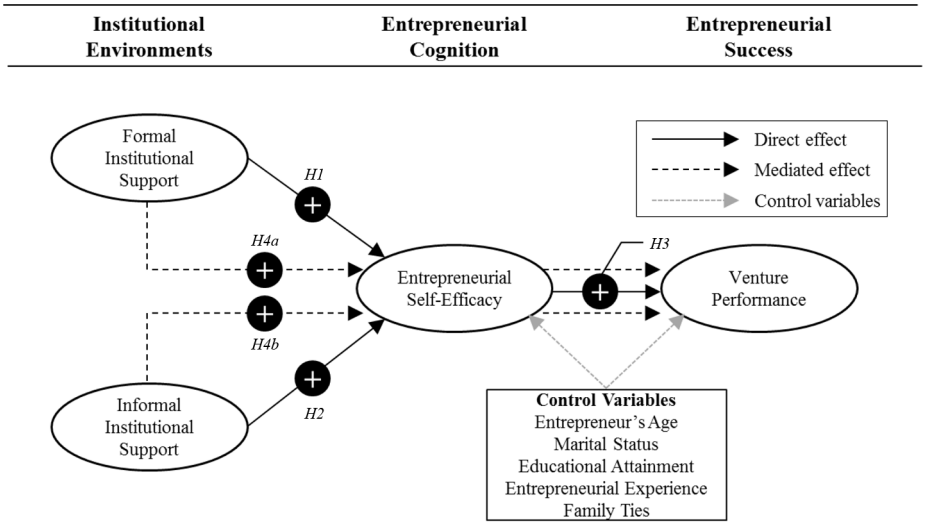

Figure 1.
Proposed conceptual model

Note: Own illustration

recognition of entrepreneurial opportunities for women and influences the types of business ventures that they can create (Welter and Smallbone, 2008). Thus, we theorize that the formation of formal institutional structures that are designed to offer public funding, training and advice helps to develop women's capacity to manage entrepreneurial uncertainty. Formal regulatory arrangements, such as gender equality legislation and policies to promote work–life balance, tend to augment women's economic empowerment and entrepreneurial leadership (Yousafzai *et al.*, 2015). The extant entrepreneurship literature suggests that professional discussions with government business development officers help female entrepreneurs not only to develop their self-confidence in opportunity identification and development but also to actively engage in formal business networking (Farr-Wharton and Brunetto, 2007). The quality of formalized institutional structures is an encouraging element of the formation and development of women entrepreneurs' opportunity beliefs that they have the potential to access and leverage tangible and intangible resources to make their operational ventures successful (Hong and Karlsson, 2004; Mũnoz and Kibler, 2016).

Researchers have asserted that institutional barriers, such as state rules and regulations that are unfavorable to the creation of new ventures, negatively affect entrepreneurial cognitions (Lüthje and Franke, 2003). In an extension of Hofstede's cultural dimensions framework and gender role theory, Shinnar *et al.*(2014) note that a perceived lack of regulatory support (including legal assistance, counselling and formal entrepreneurial aid) discourages more women than men from pursuing entrepreneurial careers in China. The reasoning is that the absence of institutional assistance may create added psychological burdens on female entrepreneurs who are already subject to stereotypical gender expectations and, as a result, increases entrepreneurial ambiguity (Heilman *et al.*, 1988). Viewing formal institutional support as a key driver of women's self-confidence and determination, we present the following testable hypothesis:

H1. Perceived formal institutional support is positively related to women's entrepreneurial self-efficacy.

Informal institutional support and entrepreneurial self-efficacy

Although previous research has demonstrated the potential effect of government support on female entrepreneurial start-ups, limited attempts have been made to examine the question of how informal institutional forces independently influence entrepreneurs' implicit beliefs and confidence in their own capabilities through the entrepreneurial process (Hopp and Stephan, 2012). The strength of entrepreneurial efforts may be shaped by the extent to which socially supportive institutional norms reward or discourage entrepreneurial thinking and innovative behaviors (Baumol, 1990). This rationale is consistent with Stephan and Uhlaner (2010) who posit that socially supportive institutional environments prompt nascent entrepreneurs to experiment with venture creation and to enthusiastically learn from their mistakes and failures due to the availability of tangible and intangible resources.

It is essential for female entrepreneurs to gain institutional approval of their entrepreneurship in a local society or community because social legitimacy facilitates the allocation of resources and mitigates the liabilities of inexperience to promote better venture performance (Bowen and De Clercq, 2008; Kibler *et al.*, 2014; Shepherd *et al.*, 2007). Conversely, the absence of a society's normative support for female entrepreneurship may deter aspiring female entrepreneurs from continuing their efforts in an attempt to ensure social acceptance (Mũnoz and Kibler, 2016). This phenomenon has a significant negative impact on female entrepreneurs' interpersonal interactions with local entrepreneurial communities that may potentially offer constructive feedback as well as recent and trustworthy market information about entrepreneurial opportunities (Baughn *et al.*, 2006; Dimov, 2010; Kibler *et al.*, 2014; Mũnoz and Kibler, 2016). Informal social networks enable female entrepreneurs to develop entrepreneurial confidence and aspirations by offering potential access to innovative business ideas, entrepreneurial thinking, experiential knowledge and financial support (Kickul *et al.*, 2007; McGowan *et al.*, 2015). One could argue that securing shared trust for female entrepreneurship is an important part of increasing the willingness to support women's business ambitions and goals despite adversity. In this regard, women are more likely to possess fewer formal ties with customers, suppliers and financiers than men are.

Consequently, legitimacy building is a requirement to enable women to effectively overcome resource constraints throughout the entrepreneurial process. The institutionalization of a "one-is-not-alone" culture in a society supports women and encourages them to invest heavily in their entrepreneurial activities by providing emotional security and reducing fears of business failure (Hopp and Stephan, 2012).

With regard to the link between informal institutions and entrepreneurial cognitions, entrepreneurship scholars provide evidence that women's participation in entrepreneurial activity increases in a society, community or country where entrepreneurial visions are highly valued, admired and legitimatized (Baughn *et al.*, 2006). The underlying assumption behind this theoretical and empirical reasoning is that a potential lack of legitimacy and recognition by society would undermine female entrepreneurs' confidence and competence to pursue and exploit potentially valuable market opportunities. Therefore, we propose the following hypothesis:

H2. Perceived informal institutional support is positively related to women's entrepreneurial self-efficacy.

Entrepreneurial self-efficacy and venture performance

Self-efficacy is commonly considered a key component of women's behavioral intentions (Shinnar *et al.*, 2014) and entrepreneurial outcomes (Bulanova *et al.*, 2016). It is thought to exert a strong influence on the business goals, learning behaviors, perseverance and growth aspirations of individuals who launch or run businesses (Chen *et al.*, 1998; Zhao *et al.*, 2005). In general, entrepreneurs who possess a high level of self-efficacy believe that they are able to take risks to succeed, even in increasingly competitive and uncertain environments (Baum and Bird, 2010). It has been argued that highly efficacious individuals are inclined to cognitively interpret uncertain and risky situations as achievable challenges (Bandura, 1977) with the potential for psychological fulfillment (Hisrich and Brush, 1986). It has been argued that entrepreneurs who have the ability to assess the feasibility of entrepreneurial action would manage the ambiguity involved in entrepreneurial opportunities through open dialogue and cooperation with key stakeholders (Dimov, 2010) and thus persist even in the face of uncertainty and setbacks (Cardon and Kirk, 2015). Building on these lines of theoretical and empirical reasoning, we propose the following hypothesis:

H3. Women's entrepreneurial self-efficacy is positively related to venture performance.

Mediating effects of entrepreneurial self-efficacy

Although prior literature on female entrepreneurship has provided some theoretical and empirical discussions of the relationship between institutions and women's level of involvement in entrepreneurial activities (Baughn *et al.*, 2006; Estrin and Mickiewicz, 2011), few studies have considered the importance of identifying the specific cognitive mechanisms through which institutions contribute to successful start-ups for women. We suggest that women who receive specific regulative and normative institutional support for female entrepreneurship feel more confident and empowered and enjoy greater legitimacy. The central premise is that female entrepreneurs who are high in self-efficacy should be more enthusiastic about exploiting and recognizing entrepreneurial opportunities and thus should be likely to perform better in the marketplace. Regardless of the rigor of the regulative and normative institutional support to which a female entrepreneur is subject, without the development and maintenance of a sense of self-efficacy, a female entrepreneur is unlikely to achieve superior venture performance. Along the aforementioned lines of reasoning, the positive contributions of formal institutional support and informal institutional support to female entrepreneurs' venture performance will be the product of an increased level of entrepreneurial self-efficacy, everything else constant. Thus, we postulate the following hypotheses:

H4a. Women's entrepreneurial self-efficacy mediates the positive effect of perceived formal institutional support on perceived venture performance.

H4b. Women's entrepreneurial self-efficacy mediates the positive effect of perceived informal institutional support on perceived venture performance.

Methods

Data collection and sample selection

This study uses survey data collected from active female entrepreneurs across Japan. The questionnaire items of this survey were adopted from the previous literature. The original English version was translated into Japanese by the authors. We conducted a set of two pilot tests with a group of ten female entrepreneurs between June and July 2015 to check the content and relevance of the items before emailing a packet that included our questionnaires

together with a cover letter to the population of interest. Based on the feedback received from the pilot group, we carefully amended the questionnaire to clarify the wording of ambiguous questions prior to survey distribution and data collection.

To ensure the accuracy of the questionnaire items (Dawson and Dickinson, 1988), the Japanese version was back-translated into English by a native Japanese speaker with competence in English. The lack of an official directory of female entrepreneurs in Japan proved to be a challenge in the selection of the sample group. We contacted two public organizations that promote female entrepreneurial activity and one informal entrepreneurial network in Japan. We were able to gain the support of these groups, and agreement to distribute the questionnaires by email to 2,967 female entrepreneurs who were listed in their private directories between early August 2015 and early September 2015. We emailed the final versions of the questionnaire, together with a cover letter, for distribution to the target recipients. Of 2,967 target recipients, 202 completed and returned usable questionnaires, which resulted in an effective response rate of 6.8 per cent. Although this response rate is slightly lower than the rates found in other female entrepreneurship research of this type (Gutiérrez *et al.*, 2014, 12.11 per cent), it is still considered comparable.

The information on the main characteristics of the sample is presented in Table I. The findings illustrate the heterogeneity of women business owners with regard to personal and organizational attributes. In terms of firm size, a high proportion (78.2 per cent) had less

Characteristics	Choice set	No.	(%)
Enterprises			
Enterprises employees	<5	158	78.22
	5-9	26	12.87
	10–20	11	5.45
	21–49	4	1.98
	>50	3	1.49
Years in operation	<4	92	45.54
	4-9	58	28.71
	10-15	46	22.77
	16-30	5	2.48
	>30	1	0.50
Type of business	Manufacturing	23	11.39
	Sales	30	14.85
	Services	133	65.84
	Others	16	7.92
Respondents			
motivations	Self-employment	14	6.93
	Social participation	13	6.44
	Career development	3	1.49
	Work–life balance	41	20.30
	Revenue growth	12	5.94
	Self-fulfillment	119	58.91
Entrepreneurial experience	Yes	32	84.16
	No	170	15.84
Age	<25	0	0.00
	25-35	28	13.86
	36-45	82	40.59
	46-55	62	30.69
	≥55	30	14.85

Table I.
Characteristics of the respondents and the enterprise

than five employees. Only 3 per cent of the women had run their business for longer than 16 years, whereas 45.5 per cent had a history of less than four years. Unsurprisingly, in terms of the major area of business activity, female entrepreneurs were significantly more likely to engage in business services (65.84 per cent) than manufacturing (11.39 per cent). Approximately 60 per cent of the surveyed female entrepreneurs stated that their motivation to be an entrepreneur was related to self-fulfillment, followed by work–life balance (20.30 per cent). The vast majority of female entrepreneurs in this study had no entrepreneurial experience before starting their businesses (84.2 per cent). With regard to age, more than 70 per cent of the sample was between 36 and 55 years old.

Measurement

The dependent variable. We adopted the venture performance scale developed by Lee and Marvel (2014). The sampled respondents were asked to report their degree of agreement on four survey items:

(1) our business sales are increasing;

(2) our business profits are increasing;

(3) our business has been expanding recently; and

(4) our business outlook is good.

These four performance predictors were measured using a seven-point Likert-type scale (1 = "fully disagree" to 7 = "fully agree"), and the scores that were collected were averaged to form a composite measure. The Cronbach's alpha reliability for perceived business performance was 0.822, which is greater than the level of 0.70 that is generally acceptable for reliability (Nunnally, 1978). The average score for perceived business performance was 4.926 (SD = 1.159).

The mediating variables. It has been argued that entrepreneurial self-efficacy is vital for the enhancement of entrepreneurs' new venture activity. Examples of such new venture activity from the entrepreneurship literature include venture growth (Baum and Locke, 2004; Baum *et al.*, 2001), persistence (Cardon and Kirk, 2015), opportunity confidence (Dimov, 2010), entrepreneurial intentions (Bullough *et al.*, 2014) and entrepreneurial behavior (Murnieks *et al.*, 2014). As one of the study's variables, the current study operationalized the entrepreneurial self-efficacy variable using Cox *et al.*'s (2002) ten-item scale. This scale has been used in many other studies (Kickul *et al.*, 2007). Using a seven-point Likert scale ranging from 1 ("little") to 7 ("very much"), the respondents indicated the extent of their agreement with a series of statements. Some example items are:

- "How much confidence do you have in your ability to plan a new business?"
- "How much confidence do you have in your ability to manage a small business?"
- "How much confidence do you have in your ability to grow a successful business?" (Cronbach's alpha = 0.900).

The average score for entrepreneurial self-efficacy was 4.532 (SD = 1.065).

The independent variables. The two types of perceived institutional support, formal and informal, were measured in line with prior studies (Amorós *et al.*, 2013, Shinnar *et al.*, 2012; Scott, 2014). The key informants were asked to rate a series of statements in relation to both institutional support types. The rating was based on a seven-point Likert-type scale (1 = "fully disagree" to 7 = "fully agree"). The scale that was used to gauge the quality of formal institutional support consisted of three items. Example statements that were included in the

survey were: "In my region, the people working for government agencies have been competent and effective in supporting female entrepreneurs" and "In my region, any female entrepreneur who needs help from a government program for a new business can find what she needs". The internal consistency reliability for this measure was 0.675. This can still be considered a reliable scale although it is below the agreed upon 0.70 cutoff-point (Nunnally, 1978). The informal institutional support construct included sample statements such as "What I have done as a female entrepreneur has been accepted by the public in my region" and "What I have done as a female entrepreneur has been accepted by public stakeholders, such as industry associations, in my region". The Cronbach's coefficient alpha for the informal institutional support scale was 0.696, which suggests good reliability. The average value of scores for informal institutional support was 4.726, with a standard deviation of 1.044.

The control variables. A broad set of control variables was incorporated into our research model to reduce the problem of endogeneity. These variables relate to elements of the female entrepreneurs' personal backgrounds, which have been identified in prior research as venture growth and profitability. Following the works of Manolova *et al.* (2007) and Morris *et al.* (2006), we included the level of educational attainment as a categorical variable (1: intermediate, 2: high school, 3: diploma, 4: institution [technical/trade], 5: bachelor's degree, 6: master's degree, 7: doctorate). The target group was also asked to indicate whether they had any previous experience in entrepreneurial activity through the simple selection of either "yes" or "no" (Lerner and Almor, 2002). Marital status was measured dichotomously (1 for married, 0 otherwise) (Welsh *et al.*, 2014). The target group's age (taken as the logarithmic number of years) was also considered as a means of controlling for the respondents' access to experiential knowledge over time (Coleman, 2007). Finally, as argued in previous research (Mari and Poggesi, 2016; Powell and Eddleston, 2013), women may hold family ties in higher regard than men do due to the potential difficulty of building their own formal business networks. Family members may play a key role in the scope of business activities that are initiated by female business owners. Families are thought to provide three types of support: emotional (cohesiveness), instrumental (financial capital) and affirmative (business advice) (Fielden and Hunt, 2011; Roomi, 2011). Following prior research (Arregle *et al.*, 2013; Batjargal *et al.*, 2013), our study recorded the percentage of kin (including immediate family and extended family) in the research participants' entrepreneurial network as a basis for the measurement of their family ties.

Statistical procedure

To verify our testable hypotheses, we conducted partial least squares (PLS) regression analyses using SmartPLS 3.0 (Ringle *et al.*, 2014). A variance-based approach is more appropriate for structural measurement models than covariance-based structural equation modeling (SEM) methods (Hair *et al.*, 2011). The use of PLS regression is advantageous for at least three reasons. First, PLS regression does not require the application of restrictive assumptions in terms of sample size and multivariate normality distribution (Wold, 1982). Second, PLS regression yields more accurate and rigorous parameter estimates, particularly when the models are complex due to the inclusion of many measurement items per variable (Hair *et al.*, 2011, 2012). Third, the PLS regression enables simultaneous assessments of statistical significance when there are multiple dependent variables in the model. Table II shows appropriate discriminant validity for all constructs in our sample because the square root of the average variance extracted (AVE) value of each construct was greater than all of the inter-construct correlations (Fornell and Larcker, 1981). The table shows that the convergent validity of the observed measures was satisfactory because the AVE values of

Table II.
Descriptive statistics and correlation matrix

Variables	Mean	SD	Minimum	Maximum	1	2	3	4	5	6	7	8	9
1 Venture performance	4.926	1.159	1.000	7.000	[0.807]								
2 Entrepreneurial self-efficacy	4.532	1.065	1.100	7.000	**0.566** *[0.727]*								
3 Formal institutional support	4.512	1.264	1.000	7.000	−0.022	0.057 *[0.869]*							
4 Informal institutional support	4.726	1.044	1.500	7.000	**0.375**	**0.268**	−0.125 *[0.715]*						
5 Marital status	0.718	0.451	0.000	1.000	−0.057	−0.180	−0.068	0.068	–				
6 Age (log)	1.645	0.086	1.410	1.830	0.011	0.165	0.013	0.045	−0.096	–			
7 Educational attainment	3.455	0.952	1.000	6.000	0.151	**0.190**	0.101	0.149	−0.012	−0.047	–		
8 Entrepreneurial experience	0.158	0.366	0.000	1.000	0.174	**0.247**	0.007	0.091	−0.180	0.098	0.120	–	
9 Family ties	21.887	22.291	0.000	100.000	−0.101	−0.115	−0.102	−0.059	0.061	−0.046	−0.057	−0.056	–

Notes: $N = 202$; bold values indicate statistical significance at the 0.01 level; the italicized numbers in brackets indicate the square root of the average variance extracted

all of the constructs exceeded the cutoff value of 0.50 (Fornell and Larcker, 1981). Moreover, internal reliability was assured because the composite reliability values of the constructs were higher than the threshold of 0.70. The PLS analysis revealed that the standardized factor loadings were all above the cutoff value of 0.55 (Falk and Miller, 1992) with the exception of one item, which suggests that convergent validity was assured for all of the constructs. One formal institutional support scale item was eliminated due to its low factor loading (Table III).

The assessment of common method variance

The questionnaire responses were based upon perceptual evaluations. With this in mind, consideration of common method variance (CMV) issues was essential, due to the risk of empirical result inflation. Several procedural and statistical remedies were applied to minimize the effects of CMV. First, the mix order of our questionnaire items was suggested to prevent the respondents from perceiving the detailed content of each construct. Second, as clearly stated in the cover letter, respondent anonymity and confidentiality were guaranteed. Third, following Podsakoff and Organ (1986), our questionnaire content was streamlined to enhance clarity and facilitate the respondents' comprehension. Therefore, all of the questionnaire items included within the questionnaire were written using unequivocal language. Fourth, as suggested by Podsakoff *et al.* (2003), reverse-coded scoring was utilized to control for CMV and social desirability bias. Fifth, we also performed a Harman's (1967) single-factor extraction test on our data to minimize CMV (Podsakoff and Organ, 1986). All of the items that included independent or dependent variables were processed using the one-factor model. The proportion that was explained by the first factor did not exceed the majority of the total variance, indicating that CMV was not a major concern in our study. The majority of the variance was not explained by the first factor (28.7 per cent). Sixth, our self-report-styled survey is a reliable paper-and-pencil survey instrument. This research method is advantageous for its minimization of social desirability distortion. According to Richman *et al.* (1999), this surveying method also ensures respondent anonymity and privacy compared to face-to-face interviews. Given these lines of reasoning, we are confident that CMV did not contaminate our regression results.

Empirical results

Table II presents the mean values, standard deviations and correlation matrix for the dependent and independent variables in this study. Entrepreneurial self-efficacy was positively related to venture performance ($r = 0.566$, $p < 0.01$). Informal institutional support was positively related to entrepreneurial self-efficacy ($r = 0.268$, $p < 0.01$) and venture performance ($r = 0.375$, $p < 0.01$). A lack of multicollinearity was ensured by computing the variance inflation factor (VIF) values of all of the explanatory variables in the model estimations. However, this issue is less relevant to our study because multicollinearity does not exert an influence on findings in cases in which the VIF is lower than 10 (Myers, 1990). Our VIF values ranged from 1.03 to 1.23, and the mean VIF value was 1.09 for the overarching model of venture performance. Before assessing the SEMs, we conducted a confirmatory factor analysis (CFA) of the items related to the seven factors to verify construct independence using LISREL 9.1. (Jöreskog and Sörbom, 2012). The CFA confirmed that the seven variables were distinct from one another. The chi-square for this model was statistically significant ($x^2 = 433.94$, p-value = 0.000). The other assessments of statistical fit were relatively satisfactory (comparative fit index = 0.933, Tucker Lewis index = 0.922, root mean square error of approximation = 0.09), although some of the fits were slightly below the cutoff points recommended by MacCallum *et al.* (1996).

Table III.
Measurement results

Scale	Items	Factor loading	SD	*t*-value	α	CR	AVE	Adjusted *R*-square
Venture performance (Lee *et al.*, 2011)	PER1	0.812***	0.040	20.473	0.822	0.882	0.652	0.393
	PER2	0.841***	0.034	24.863				
	PER3	0.842***	0.021	39.580				
	PER4	0.730***	0.040	18.209				
Entrepreneurial self-efficacy (Cox *et al.*, 2002)	ESE1	0.574***	0.071	8.084	0.900	0.918	0.529	0.185
	ESE2	0.648***	0.051	12.818				
	ESE3	0.792***	0.030	26.292				
	ESE4	0.794***	0.038	20.808				
	ESE5	0.693***	0.048	14.437				
	ESE6	0.735***	0.045	16.374				
	ESE7	0.730***	0.036	20.467				
	ESE8	0.809***	0.026	30.941				
	ESE9	0.768***	0.030	25.410				
	ESE10	0.698***	0.045	15.470				
Formal institutional support (Amorós *et al.*, 2013; Shinnar *et al.* 2012)	FIS1	0.861***	0.205	4.202	0.675	0.860	0.755	–
	FIS2	0.876***	0.202	4.337				
Informal Institutional Support (Scott, 1995)	IIS1	0.634***	0.090	7.018	0.696	0.805	0.511	–
	IIS2	0.766***	0.054	14.150				
	IIS3	0.792***	0.054	14.580				
	IIS4	0.654***	0.088	7.404				

Notes: $N = 202$; SD = standard deviation; AVE = average variance extracted; CR = composite reliability; ***$p < 0.001$

In this study, we estimated the structural relationships proposed in our model using Smart PLS 3.0. As recommended by Hair *et al.* (2011), a bootstrap procedure with 500 repetitions was performed to evaluate the statistical significance of the path coefficients. Because the PLS is unable to assess structural model fit, the predictive power of our structural models was examined based on the coefficient of the determination of the endogenous latent variables (Chin, 1998). For entrepreneurial self-efficacy, the R^2 value was 0.185. A coefficient of the determination of the venture performance construct with an R^2 of 0.393 is substantial, which suggests that this model has high predictive validity.

Table IV presents the regression analysis. These findings predict the mediating role of the entrepreneurial self-efficacy variable in relation to the two types of institutional support and venture performance. Our analysis indicates the positive association between formal institutional support and entrepreneurial self-efficacy, but this association was not statistically significant ($\beta = 0.061$, *n.s.*). Thus, *H1* is not supported. With respect to *H2*, the effect of informal institutional support on entrepreneurial self-efficacy appears to be positive and statistically significant ($\beta = 0.291$, $p < 0.001$). As Table IV reports, our modeling provides

Structural path from → to	β	SD	*t*-value	*p*-value
Hypothesized links (supported hypotheses in bold)				
H1 Formal Institutional Support → Entrepreneurial Self-Efficacy	0.061	0.063	0.968	n.s.
***H2* Informal Institutional Support → Entrepreneurial Self-Efficacy**	0.291	0.060	4.823	***
***H3* Entrepreneurial Self-Efficacy → Venture Performance**	0.542	0.063	8.560	***
H4a Formal Institutional Support → Venture Performance (Mediated by Entrepreneurial Self-Efficacy)	0.033	0.034	0.961	n.s.
***H4b* Informal Institutional Support → Venture Performance (Mediated by Entrepreneurial Self-Efficacy)**	0.158	0.038	4.122	***
Non-hypothesized links (control variables)				
Entrepreneur's Age → Entrepreneurial Self-Efficacy	0.112	0.059	1.890	*
Educational Attainment → Entrepreneurial Self-Efficacy	0.125	0.063	1.996	**
Entrepreneurial Experience → Entrepreneurial Self-Efficacy	0.166	0.054	3.107	***
Family Ties → Entrepreneurial Self-Efficacy	−0.062	0.049	1.270	n.s.
Marital Status (1: Married) → Entrepreneurial Self-Efficacy	−0.136	0.062	2.181	**
Entrepreneur's Age → Venture Performance	−0.062	0.047	1.310	n.s.
Educational Attainment → Venture Performance	0.002	0.033	0.070	n.s.
Entrepreneurial Experience → Venture Performance	0.044	0.043	1.038	n.s.
Family Ties → Venture Performance	−0.046	0.042	1.104	n.s.
Marital Status (1: Married) → Venture Performance	0.020	0.037	0.540	n.s.

Notes: Sample size $N = 202$; levels of significance: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$; n.s.: not significant; SD = standard deviation

Table IV. Partial least square (PLS) estimation results for direct effects

quantitative support for the assumption that entrepreneurial self-efficacy bolsters female entrepreneurs' venture performance ($\beta = 0.542$, $p < 0.001$), which confirms *H3*. Table IV shows that the various associations between the control variables and entrepreneurial self-efficacy appear to be statistically significant: age ($\beta = 0.112$, $p < 0.1$), educational attainment ($\beta = 0.125$, $p < 0.05$), marital status ($\beta = -0.136$, $p < 0.05$) and entrepreneurial experience ($\beta = 0.166$, $p < 0.01$). Surprisingly, the estimation results indicate that none of the control variables shows a significant correlation with venture performance. Given our findings related to the hypotheses testing, we also tested the potential assumption that entrepreneurial self-efficacy mediates the relationship between informal institutional support and venture performance in our PLS analysis. For the mediation analysis, we performed a Sobel (1982) test, which is suitable for the evaluation of the statistical significance of the mediation effect. The estimation results indicate that the mediating effect of self-efficacy is statistically significant ($\beta = 4.225$, $p < 0.001$), suggesting full mediation. Therefore, *H4b* is confirmed. In the following section, we summarize the empirical evidence, address the limitations of our research and provide proposals for future research.

Discussion

Using data collected from 202 female entrepreneurs in Japan, we investigated the impact of institutional support on entrepreneurial self-efficacy, and the indirect positive effects on entrepreneurial success. Understanding the needs and methods for the development of women's self-confidence and business ambitions is a crucial policy agenda for public decision-makers and scholars. This notion is encompassed within our study's hypotheses regarding active female entrepreneurs' self-efficacy in Japan. Our study makes a number of key contributions to female entrepreneurship research. *First*, unlike the vast majority of prior female entrepreneurship research that focuses exclusively on the formation of entrepreneurial intentions based on student samples (Dawson and Henley, 2015; Langowitz and Minniti, 2007; Shinnar *et al.*, 2012), this article sheds light on active female entrepreneurs and provides evidence of their actual behaviors and cognitive mechanisms. *Second*, we investigate the institutional antecedents of female entrepreneurs' self-efficacy and the social cognitive pathways through which institutions affect entrepreneurial outcomes. Previous studies have failed to consider the importance of the social cognitive process of women's entrepreneurial self-efficacy in the institutional context. *Third*, our research uses a sample of aspiring Japanese female entrepreneurs. This contribution is valuable because prior entrepreneurship research on the behavioral patterns and characteristics of female entrepreneurs has been undertaken exclusively within Anglo-Saxon contexts.

Overall, we empirically confirm the validity of three of our hypotheses. Consistent with previous studies (Hopp and Stephan, 2012; Kibler *et al.*, 2014; Mũnoz and Kibler, 2016; Stephan and Uhlaner, 2010), this article demonstrates that informal institutional support positively predicts women's self-confidence in entrepreneurial initiatives. In practice, making appropriate judgements of the operability of an individual's entrepreneurial opportunities requires the achievement of the social legitimacy of female entrepreneurship. In addition, societal recognition of women-owned businesses could stimulate a reciprocal exchange of resources with institutional and organizational actors at the local level.

Implications for research and practice

Our study has several important implications for researchers and practitioners. The findings reported here clarify the strength of the positive relationship between informal institutional support and entrepreneurial self-efficacy. We suggest female entrepreneurs to realize the importance of building cooperative relationships with key stakeholders since gaining social

legitimacy from them may energize entrepreneurial thinking. As a result, one could also argue that women high in entrepreneurial self-efficacy are well-positioned to have better access to valuable opportunities and to mobilize the resources that are readily available to them.

Therefore, self-efficacy is an important theme that highlights the relevance of interpersonal interactions for entrepreneurial success.

Contrary to our prediction, formal institutional support has a positive effect but shows no statistical significance in predicting the level of women's self-efficacy. This finding suggests that women's confidence in their entrepreneurial endeavors may not necessarily be stimulated by current government support policies. It may be that institutional actors are likely to allocate public resources insufficiently and inefficiently. We can also speculate that female entrepreneurs' lack of self-confidence in their own abilities may be reinforced by a lack of credibility in government support policies that offer tangible assistance to foster entrepreneurial skills and know-how. Another explanation arises from Lim *et al.* (2010), who argue that high regulatory complexity and extensive bureaucratic processes may increase entrepreneurial uncertainty, consequently hampering the creation of a positive "can-do" attitude. As highlighted in prior studies (Fielden *et al.*, 2003; Fielden and Dawe, 2004; Kirkwood, 2009; Wilson *et al.*, 2007), more gender-specific mentoring programs that are inclusive of both female entrepreneurs and their spouses are needed to develop confidence and growth aspiration and to manage the fear of failure.

For policymakers who are dedicated to increasing the level of female entrepreneurial engagement, effective dialogues between central and local governments and female entrepreneurs should be required to further understand women's needs and desires with respect to funding methods, support systems and entrepreneurial education in Japan. Our study supports prior research (Baum and Locke, 2004; Cardon and Kirk, 2015; Hopp and Stephan, 2012) showing that entrepreneurial self-efficacy is predictive of performance differences across women's entrepreneurial businesses. This result reveals that the development of self-confidence in the creation of new knowledge and building connections with key local stakeholders would enable women entrepreneurs to persist and grow, even in the face of difficulties by pursuing external advice in the searching, planning, marshalling and implementation of their business strategies.

Limitations and future research

As with all research, several limitations of this study should be noted. *First*, our research is based on survey data from a single source at a single point in time. This approach leaves the study vulnerable to the threat of CMV. Although it would be challenging, a longitudinal study would be a more valuable approach to refine the proposed model and unequivocally determine the causal sequence of our model. Further studies on the impact of entrepreneurial efficacy on the performance of firms owned by women and their entrepreneurial processes over time would be valuable to obtain a deeper understanding of the interacting factors. *Second*, this study was conducted exclusively in a single country; this approach is valid and useful due to the significant variation in institutional quality within a single country (Bruton *et al.*, 2010). To strengthen the generalizability and the empirical rigor of our results, future work could use cross-country samples within the same research setting. Arguably, cross-country comparative studies would be more valuable for identifying role model policies to effectively address the cultural, institutional and economic obstacles that constrain women's venture efforts. *Third*, the absence of publicly available statistical information on the (non-)financial performance of female entrepreneurs in Japan hinders our ability to verify the validity of our empirical results. As indicated by Powell and Eddleston (2013), there are difficulties in the application of objective data to economic performance due to the lack of systematic female entrepreneurship

data compiled by state or regional authorities as a result of the unique nature of female entrepreneurship in terms of visibility and motivation. *Fourth*, the current study focused on the socio-institutional antecedents and business outcomes of entrepreneurial self-confidence. One important avenue of interest for future research on female entrepreneurship would be to examine how noneconomic outcomes (e.g. satisfaction, quality of life, meaning of work) of self-efficacy change over the subsequent phases of the venture process. *Fifth*, the generalizability of our findings remains limited due to the small number of responses and the low response rate. *Lastly*, as recommended by Welsh *et al.* (2014), future research may theoretically and empirically investigate how basic institutional support measures, such as job training programs, entrepreneurial education, child vouchers and maternity allowances, enhance the entrepreneurial identity of female entrepreneurs in the long run.

Concluding remarks

In light of the lack of research on self-efficacy and institutional forces in relation to women's entrepreneurship, this paper adds new and challenging insights into the importance of women's entrepreneurial self-efficacy within the less-studied national context of Japan. The results of this study imply that public policymakers should vigilantly consider the need to introduce gender sensitivity into their institutional actions. Such actions should aim to reinforce women's efficacy beliefs and to engender women's self-identification with entrepreneurship. We believe that self-confidence in entrepreneurial initiatives is a key quality for sustaining female entrepreneurship. In addition, both the direct and indirect roles of informal institutional support are important for female entrepreneurs to achieve venture success. Increased self-efficacy among female entrepreneurs will help to transform Japan's previously untapped strategic resources into the key engine for economic growth in the future.

References

Ahl, H. (2006), "Why research on women entrepreneurs needs new directions", *Entrepreneurship Theory and Practice*, Vol. 30 No. 5, pp. 595-621.

Ahl, H. and Nelson, T. (2015), "How policy positions women entrepreneurs: a comparative analysis of state discourse in Sweden and the united states", *Journal of Business Venturing*, Vol. 30 No. 2, pp. 273-291.

Aldrich, H.E. and Fiol, C.M. (1994), "Fools rush in? The institutional context of industry creation", *Academy of Management Review*, Vol. 19 No. 4, pp. 645-670.

Amorós, J.E., Felzensztein, C. and Gimmon, E. (2013), "Entrepreneurial opportunities in peripheral versus core regions in Chile", *Small Business Economics*, Vol. 40 No. 1, pp. 119-139.

Arregle, J.L., Batjargal, B., Hitt, M., Webb, J.W., Miller, T. and Tsui, A.S. (2013), "Family ties in entrepreneurs' social networks and new venture growth", *Entrepreneurship Theory & Practice*, Vol. 39 No. 2, pp. 313-344.

Bandura, A. (1977), "Self-efficacy: toward a unifying theory of behaviorak change", *Psychological Review*, Vol. 84 No. 2, pp. 191-215.

Bandura, A. (1982), "Self-efficacy mechanism in human agency", *American Psychologist*, Vol. 37 No. 2, pp. 122-147.

Bandura, A. (1997), *Self-Efficacy: The Exercise of Control*, Freeman, New York, NY.

Batjargal, B., Hitt, M.A., Tsui, A.S., Arregle, J.-L., Webb, J.W. and Miller, T.L. (2013), "Institutional polycentrism, entrepreneurs' social networks, and new venture growth", *Academy of Management Journal*, Vol. 56 No. 4, pp. 1024-1049.

Baughn, C.C., Chua, B.-L. and Neupert, K.E. (2006), "The normative context for women's participation in entrepreneurship: a multicountry study", *Entrepreneurship Theory and Practice*, Vol. 30 No. 5, pp. 687-708.

Baum, J.R. and Bird, B.J. (2010), "The successful intelligence of high-growth entrepreneurs: links to new venture growth", *Organization Science*, Vol. 21 No. 2, pp. 397-412.

Baum, J.R. and Locke, E.A. (2004), "The relationship of entrepreneurial traits, skills, and motivation to subsequent venture growth", *Journal of Applied Psychology*, Vol. 89 No. 4, pp. 587-598.

Baum, J.R., Locke, E.A. and Smith, K.G. (2001), "A multidimensional model of venture growth", *Academy of Management Journal*, Vol. 44 No. 2, pp. 292-303.

Baumol, W.J. (1990), "Entrepreneurship: productive, unproductive, and destructive", *Journal of Political Economy*, Vol. 98 No. 5, pp. 893-921.

Bowen, H.P. and De Clercq, D. (2008), "Institutional context and the allocation of entrepreneurial effort", *Journal of International Business Studies*, Vol. 39 No. 4, pp. 747-767.

Brush, C., De Bruin, A. and Welter, F. (2009), "A gender-aware framework for women's entrepreneurship", *International Journal of Gender and Entrepreneurship*, Vol. 1 No. 1, pp. 8-24.

Brush, C., De Bruin, A., Gatewood, E.J. and Henry, C. (Eds) (2010), Introduction: women Entrepreneurs and Growth, *Women Entrepreneurs and the Global Environment for Growth: A Research Perspective*, Edward Elgar, MA, pp. 1-16.

Bruton, G.D., Ahlstrom, D. and Li, H.-L. (2010), "Institutional theory and entrepreneurship: where are we now and where do we need to move in the future?", *Entrepreneurship Theory and Practice*, Vol. 34 No. 3, pp. 421-440.

Bulanova, O., Isaksen, E.J. and Kolvereid, L. (2016), "Growth aspirations among women entrepreneurs in high growth firms", *Baltic Journal of Management*, Vol. 11 No. 29, pp. 187-206.

Bullough, A., Renk, M. and Myatt, T. (2014), "Danger zone entrepreneurs: the importance of resilience and self-efficacy for entrepreneurial intentions", *Entrepreneurship Theory & Practice*, Vol. 38 No. 3, pp. 473-499.

Cardon, M.S. and Kirk, C.P. (2015), "Entrepreneurial passion as mediator of the self-efficacy to persistence relationship", *Entrepreneurship Theory & Practice*, Vol. 39 No. 5, pp. 1027-1050.

Chen, C.C., Green, P.G. and Crick, A. (1998), "Does entrepreneurial self-efficacy distinguish entrepreneurs from managers", *Journal of Business Venturing*, Vol. 13, pp. 295-316.

Chin, W.W. (1998), "The partial least squares approach to structural equation modeling", in Marcoulides, G.A. (Ed.), *Modern Methods for Business Research*, Lawrence Erlbaum Associates Publishers, Mahwah, NJ, pp. 295-336.

Coleman, S. (2007), "Women owned firms and growth", *Journal of Business and Entrepreneurship*, Vol. 19 No. 2, pp. 31-44.

Cox, L.W., Mueller, S.L. and Moss, S.E. (2002), "The impact of entrepreneurship education on entrepreneurial self-efficacy", *International Journal of Entrepreneurship Education*, Vol. 1 No. 2, pp. 229-245.

Dawson, C. and Henley, A. (2015), "Gender, risk, and venture creation intentions", *Journal of Small Business Management*, Vol. 53 No. 2, pp. 501-515.

Dawson, S. and Dickinson, D. (1988), "Conducting international mail surveys: the effect of incentives on response rates with an industry population", *Journal of International Business Studies*, Vol. 19 No. 3, pp. 491-496.

De Bruin, A., Brush, C.G. and Welter, F. (2006), "Introduction to the special issue: towards building cumulative knowledge on women's entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 30 No. 5, pp. 585-593.

Dimov, D. (2010), "Nascent entrepreneurs and venture emergence: opportunity confidence, human Capital, and early planning", *Journal of Management Studies*, Vol. 47 No. 6, pp. 1123-1153.

Estrin, S. and Mickiewicz, T. (2011), "Institutions and female entrepreneurship", *Small Business Economics*, Vol. 37 No. 4, pp. 397-415.

Falk, R.F. and Miller, N.B. (1992), *A Primer for Soft Modeling*, The University of Akron Press. Akron, OH.

Farr-Wharton, R. and Brunetto, Y. (2007), "Women entrepreneurs, opportunity recognition and government-sponsored business networks: a social Capital perspectve", *Women in Management Review*, Vol. 22 No. 3, pp. 187-207.

Fielden, S.L. and Dawe, A. (2004), "Entrepreneurship and social inclusion", *Women in Management Review*, Vol. 19 No. 3, pp. 139-142.

Fielden, S.L. and Hunt, C.M. (2011), "Online coaching: an alternative source of social support for female entrepreneurs during venture creation", *International Small Business Journal*, Vol. 29 No. 4, pp. 345-359.

Fielden, S.L., Davidson, M.J., Dawe, A.J. and Makin, P.J. (2003), "Factors inhibiting the economic growth of female owned small businesses in North west England", *Journal of Small Business and Enterprise Development*, Vol. 10 No. 2, pp. 152-166.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Futagami, S. and Helms, M.M. (2009), "Emerging female entrepreneurship in Japan: a case study of digimom workers", *Thunderbird International Business Review*, Vol. 51 No. 1, pp. 71-85.

Goltz, S., Buche, M.W. and Pathank, S. (2015), "Political empowerment, rule of law, and women's entry into entrepreneurship", *Journal of Small Business Management*, Vol. 53 No. 3, pp. 605-626.

Gutiérrez, P.R., Fuentes, M.M. and Ariza, L.R. (2014), "Strategic capabilities and perfirmance in women-owned business in Mexico", *Journal of Small Business Management*, Vol. 52 No. 3, pp. 541-554.

Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011), "PLS-SEM: indeed a silver bullet", *Journal of Marketing Theory and Practice*, Vol. 19 No. 2, pp. 139-152.

Hair, J.F., Sarstedt, M., Pieper, T.M. and Ringle, C.M. (2012), "The use of partial least squares structural equation modeling in strategic management research: a review of past practices and recommendations for future applications", *Long Range Planning*, Vol. 45 Nos 5/6, pp. 320-340.

Hair, J.F., Sarstedt, M., Ringle, C. and Mena, J. (2011), "An assessment of the use of partial least squares structural equation modeling in marketing research", *Journal of the Academy of Marketing Science*, Vol. 40 No. 3, pp. 414-433.

Harman, H.H. (1967), *Modern Factor Analysis*, University of Chicago Press, Chicago, IL.

Heilman, M.E., Martell, R.F. and Simon, M.C. (1988), "The vagaries of sex bias: conditions regulating the undervaluation, equivaluation, and overvaluation of female job applicants", *Organizational Behavior and Human Decision Processes*, Vol. 41 No. 1, pp. 98-110.

Hisrich, R.D. and Brush, C.G. (1986), *The Women Entrepreneur*, Lexington Books, Lexington, MA.

Hong, B. and Karlsson, T. (2004), "Institutional forces and the written business plan", *Journal of Management*, Vol. 30 No. 1, pp. 29-48.

Hopp, C. and Stephan, U. (2012), "The influence of socio-cultural environments on the performance pf nascent entrepreneurs: community culture, motivation, self-efficacy and start-up success", *Entrepreneurship & Regional Development*, Vol. 24 Nos 9/10, pp. 917-945.

Hughes, K.D., Jennings, J.E., Brush, C., Carter, S. and Welter, F. (2012), "Extending women's entrepreneurship research in new directions", *Entrepreneurship Theory and Practice*, Vol. 36 No. 3, pp. 429-442.

Jennings, J.E. and Brush, C. (2013), "Research on women entrepreneurs: challenges to (and from) broader entrepreneurship literature?", *The Academy of Management Annals*, Vol. 7 No. 1, pp. 661-713.

Jöreskog, K.G. and Sörbom, D. (2012), *Lisrel 9.1*, Scientific Software International, Skokie, available at: www.ssicentral.com/lisrel/ (accessed 22 June 2015).

Kibler, E., Kautonen, T. and Fink, M. (2014), "Regional social legitimacy of entrepreneurship: implications for entrepreneurial intention and start-up behaviour", *Regional Studies*, Vol. 48 No. 6, pp. 995-1015.

Kickul, J.R., Gundry, L.K. and Sampson, S.D. (2007), "Women entrepreneurs preparing for growth: the influene of social capital and training on resource acquisition", *Journal of Small Business & Entrepreneurship*, Vol. 20 No. 2, pp. 169-181.

Kirkwood, J. (2009), "Is a lack of self-confidence hindering women entrepreneurs?", *International Journal of Gender and Entrepreneurship*, Vol. 1 No. 2, pp. 118-133.

Langowitz, N. and Minniti, M. (2007), "The entrepreneurial propensity of women", *Entrepreneurship Theory and Practice*, Vol. 31 No. 3, pp. 341-364.

Lee, H. and Marvel, M.R. (2014), "Revisiting the entrepreneur gender-performance relationship: a firm perspective", *Small Business Economics*, Vol. 42 No. 4, pp. 769-786.

Lee, J.H., Sohn, S.Y. and Ju, Y.H. (2011), "How effective Is government support for Korean women entrepreneurs in small and medium enterprises?", *Journal of Small Business Management*, Vol. 49, pp. 599-616.

Lerner, M. and Almor, T. (2002), "Relationships among strategic capabilities and the performance of women-owned small ventures", *Journal of Small Business Management*, Vol. 40 No. 2, pp. 109-125.

Lim, D., Morse, E., Mitchell, R. and Seawright, K. (2010), "Institutional environment and entrepreneurial cognitions: a comparative business system perspective", *Entrepreneurship Theory and Practice*, Vol. 34 No. 3, pp. 491-516.

Lüthje, C. and Franke, N. (2003), "The 'making' of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT", *R&D Management*, Vol. 33 No. 2, pp. 135-147.

McGowan, P., Cooper, S., Durkin, M. and O'Kane, C. (2015), "The inluence of social and human Capital in developing young women as entrepreneurial business leaders", *Journal of Small Business Management*, Vol. 53 No. 3, pp. 645-661.

McGregor, J. and Tweed, D. (2002), "Plofiling a new generation of female small business owners in new Zealand: networking, mentoring and growth", *Gender, Work and Organization*, Vol. 9 No. 4, pp. 420-438.

MacCallum, R.C., Browne, M.W. and Sugawara, H.M. (1996), "Power analysis and determination of sample size for covariance structure modeling", *Psychological Methods*, Vol. 1 No. 2, pp. 130-149.

Manolova, T.S., Carter, N.M., Manev, I.M. and Gyoshev, B.S. (2007), "The differential effect of men and women entrepreneurs' human Capital and networking on growth expectancies in Bulgaria", *Entrepreneurship Theory and Practice*, Vol. 31 No. 3, pp. 407-426.

Mari, M. and Poggesi, S. (2016), "Family embeddedness and business performance: evidences from women-owned firms", *Management Decision*, Vol. 54 No. 2, pp. 476-500.

Meyer, J.W. and Scott, W.R. (1983), "Centralization and the legitimacy problems of local government", *Organizational Environments: Ritual and Rationality*, Vol. 199, pp. 215.

Minniti, M. and Naudé, W. (2010), "What do we know about the patterns and determinants of female entrepreneurship across countries?", *The European Journal of Development Research*, Vol. 22 No. 3, pp. 277293.

Morris, M.H., Miyazaki, N.N., Watters, C.E. and Coombes, S.M. (2006), "The dilemma of growth: understanding venture size choices of women entrepreneurs", *Journal of Small Business Management*, Vol. 44 No. 2, pp. 221-244.

Mũnoz, P. and Kibler, E. (2016), "Institutional complexity and social entrepreneurship: a fuzzy-set approach", *Journal of Business Research*, Vol. 69, pp. 1314-1318.

Murnieks, C.Y., Mosakowski, E. and Cardon, M.S. (2014), "Pathways of passion: identity centrality, passion, and behavior among entrepreneurs", *Journal of Management*, Vol. 40 No. 6, pp. 1583-1606.

Myers, R. (1990), *Classical and Modern Regression with Applications*, Duxbury Press, Boston, MA.

North, D. (1990), *Institutions, Institutional Change and Economic Performance*, Cambridge University Press. Cambridge, MA.

Nunnally, J. (1978), *Psychometric Theory*, 2nd ed., McGraw-Hill, New York, NY.

Podsakoff, P.M. and Organ, D.W. (1986), "Self-reports in organization research: problems and prospects", *Journal of Management*, Vol. 12 No. 4, pp. 531-544.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.

Powell, G.N. and Eddleston, K.A. (2013), "Linking family-to-business enrichment and support to entrepreneurial success: do female and male entrepreneurs experience different outcomes?", *Journal of Business Venturing*, Vol. 28 No. 2, pp. 261-280.

Powell, W.W. and DiMaggio, P.J. (1991), *The New Institutionalism in Orgaizational Analysis*, University of Chicago Press. Chicago, IL.

Richman, W.L., Kiesler, S., Weisband, S. and Drasgow, F. (1999), "A Meta-analytic study of social desirability distortion in computer-administered questionnaires, traditional questionnaires, and interviews", *Journal of Applied Psychology*, Vol. 84 No. 5, pp. 754-775.

Ringle, C.M., Wende, S. and Becker, J.M. (2014), *Software SmartPLS 3.0*, SmartPLS, Hamburg, available at: www.smartpls.com

Roomi, M.A. (2011), "Entrepreneurial Capital, social values and Islamic traditions: exploring the growth of women-owned enterprises in Pakistan", *International Small Business Journal*, Vol. 31 No. 2, pp. 175-191.

Scott, W.R. (1995), *Institutions and Organizations: Ideas, Interests, and Identities*, Sage, Thousand Oaks, CA.

Scott, W.R. (2014), *Institutions and Organizations: Ideas, Interests, and Identities*, 4th ed., Sage, Thousand Oaks, CA.

Shepherd, D., McMullen, J. and Jennings, P. (2007), "The formation of opportunity beliefs: overcoming ignorance and reducing doubt", *Strategic Entrepreneurship Journal*, Vol. 1 Nos 1/2, pp. 75-95.

Shinnar, R.S., Giacomin, O. and Janssen, F. (2012), "Entrepreneurial perceptions and intentions: the role of gender and culture", *Entrepreneurship Theory and Practice*, Vol. 36 No. 3, pp. 465-493.

Shinnar, R.S., Hsu, D.K. and Powell, B.C. (2014), "Self-efficacy, entrepreneurial intentions, and gender: assessing the impact of entrepreneurship education longitudinally", *International Journal of Management Education*, Vol. 12 No. 3, pp. 561-570.

Sobel, M.E. (1982), "Asymptotic confidence intervals for indirect effect in structural equation models", *Sociological Methodology*, Vol. 13, pp. 290-312.

Staw, B.M. and Boettger, R.D. (1990), "Task revision: a neglected form of work performance", *Academy of Management Journal*, Vol. 33 No. 3, pp. 534-559.

Stephan, U. and Uhlaner, L.M. (2010), "Performance-based vs socially supportive culture: a CrossNational study of descriptive norms and entrepreneurship", *Journal of International Business Studies*, Vol. 41 No. 8, pp. 1347-1364.

Suchman, M.C. (1995), "Managing legitimacy: strategic and institutional approaches", *Academy of Management Review*, Vol. 20 No. 3, pp. 571-611.

Thébaud, S. (2015), "Business as plan B: institutional foundations of gender inequality in entrepreneurship across 24 industrialized countries", *Administrative Science Quarterly*, Vol. 60 No. 4, pp. 671-711.

Welsh, D.H.B., Memili, E., Kaciak, E. and Ochi, M. (2014), "Japanese women entrepreneurs: implications for family firms", *Journal of Small Business Management*, Vol. 52 No. 2, pp. 286-305.

Welter, F. and Smallbone, D. (2008), "Women's entrepreneurship from an institutional perspective: the case of Uzbekistan", *International Entrepreneurship and Management Journal*, Vol. 4 No. 4, pp. 504-520.

Williamson, O. (1985), *The Economic Institutions of Capitalism*, Free Press, New York, NY.

Wilson, F., Kickul, J. and Marlino, D. (2007), "Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: implications for entrepreneurship education", *Entrepreneurship Theory and Practice*, Vol. 31 No. 3, pp. 387-406.

Wold, H. (1982), "Soft modeling: the basic design and some extensions", in Jöreskog, K.G. and Wold, H. (Eds), *Systems under Indirect Observation: Causality, Structure, Prediction*, North Holland Publishing, Amsterdam.

Yousafzai, S.Y., Saeed, S. and Moreno Muffatto, M. (2015), "Institutional theory and contextual embeddedness of women's entrepreneurial leadership: Evidence from 92 countries", *Journal of Small Business Management*, Vol. 53 No. 3, pp. 587-604.

Zhao, H., Seibert, S.E. and Hills, G.E. (2005), "The mediating role of self-efficacy in the development of entrepreneurial intentions", *Journal of Applied Psychology*, Vol. 90 No. 6, pp. 1265-1272.

Further reading

De Bruin, A., Brush, C.G. and Welter, F. (2007), "Advancing a framework for coherent research on women's entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 31 No. 3, pp. 323-339.

Global Entrepreneurship Research Association (2014), Global Entrepreneurship Monitor 2014 Global Report, available at: www.babson.edu (accessed 6 March 2016).

Global Entrepreneurship Research Association (2015) GEM 2014 Women's Report, http://gemconsortium.org/report/49281

Marlow, S. and Patton, D. (2005), "All credit to men? Entrepreneurship, finance, and gender", *Entrepreneurship Theory and Practice*, Vol. 29 No. 6, pp. 717-735.

Meyer, J.W. and Rowan, B. (1977), "Institutionalized organizations: formal structure as myth and ceremony", *American Journal of Sociology*, Vol. 83 No. 2, pp. 340-363.

About the authors

Tomoyo Kazumi is Professor of Small Business Management and works for the School of Commerce at Senshu University in Japan. Her research focuses on female entrepreneurship in Asia and government policy toward small businesses. She received a PhD in International Management from Waseda University, Japan. Her articles have been published in the *Asia Pacific Journal of Innovation and Entrepreneurship and Venture Review*. Tomoyo Kazumi is the corresponding author and can be contacted at: t-kazumi@isc.senshu-u.ac.jp

Norifumi Kawai is Senior Lecturer (Associate Professor) in the Department of Business and Management at the University of Sussex in the UK. His research interest lies in female entrepreneurship in Japan. He received a PhD in Managerial Economics from the Mercator School of Management at the Universitaet Duisburg-Essen, Germany. His articles have been published in the *Asian Business & Management*, *International Journal of Human Resource Management*, *International Business Review* and the *British Journal of Management*.