Untangling the Link between Institutions and Women’s Entrepreneurial Performance: The Mediating Role of Self-Efficacy

ABSTRACT

Based on a unique sample of 202 female entrepreneurs in Japan, this study explores the extent to which different institutional arrangements affect female entrepreneurial venture performance. Drawing upon a unified theoretical framework of social cognitive and institutional perspectives, we scrutinize the complex interplay among supportive institutional environments, entrepreneurial cognitions and entrepreneurial success. The findings of our structural equation modelling indicate that women’s entrepreneurial self-efficacy is a strong and useful mediator of the effect of informal institutional support on venture performance. Our 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.

Keywords: Female entrepreneurs; Japan; institutional support; entrepreneurial self-efficacy; entrepreneurial success

JEL classifications: L25, L26, M13
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 & Minniti, 2007). Notably, the number of female entrepreneurs has been rapidly increasing due to continued efforts by policy-makers worldwide to empower women and to explore their leadership potential through the provision of institutional support (Ahl & 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% 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, De Bruin, Gatewood & Henry, 2010; Brush & Welter, 2006; De Bruin, Jennings & Brush, 2013; Minniti & Naudé, 2010).

Entrepreneurship scholars argue that women continue to experience more disadvantages than their male counterparts do when launching and developing entrepreneurial businesses (Ahl & Nelson, 2015; Marlow & Patton, 2005). The underlying rationale for this notable difference is closely linked to “the embedded masculinity inherent within entrepreneurial stereotypes” (Green, 2013: 688). Given the persistence of a severe gender bias, women have difficulty accessing market opportunities due to a lack of entrepreneurial self-efficacy (Fielden et al., 2003; Fielden & Hunt, 2011; Kirkwood, 2016). 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, Isaksen & Kolvereid, 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 percent which is well below the regional average of 11.35 percent; 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 & Helms, 2009). The 2014 White Paper on Small and Medium Enterprises in Japan stresses that the inadequate quality of entrepreneurial education for women may have a negative impact on the likelihood of women becoming entrepreneurs in Japan. In addition, Japan’s spousal tax deduction system undermines women’s career aspirations to work full-time or to advance their entrepreneurial endeavors (Watanabe, 2014). This system creates the income ceiling, a situation in which a wife who is self-employed and earns more than 1.03 million yen is not entitled to receive social security and health care benefits as a dependent of her husband (Abe, 2009). As a result, many housewives tend to choose such preferential treatment rather than finding full-time work.

In recent years, lawmakers and economists have considered the importance of promoting female entrepreneurship in Japan in an effort to address Japan’s protracted economic recession (Futagami & Helms, 2009) and its rapidly shrinking economy (METI, 2016). Prime Minister Shinzo Abe, who considers female entrepreneurship an important pillar
in the strategic policy of “Abenomics”, has introduced a wide variety of institutional measures and programs to increase the female start-up ratio and the percentage of women in managerial positions. However, some critics note that the Japanese government still struggles to identify which policies optimally meet women’s needs and desires and that Abe’s womenomics represents a lack of capacity to implement policies to support women (Koike, 2014). Therefore, it is necessary to empirically investigate the effect of institutional arrangements on the perceptions of women entrepreneurs. The underlying aim of this study is to add value to the literature by empirically analyzing the effectiveness of formal and informal institutional support in the development of women’s self-confidence in entrepreneurial activities. It is notable that the absence of female entrepreneurship in Japan is largely linked to the fear of failure, the concept of saving face (Tezuka, 1997), a lack of self-efficacy in women’s perceptions of their own capabilities (GEM, 2015), and a lack of societal recognition of women’s economic activities (Futagami & Helms, 2009; Welsh et al., 2014). Weak self-efficacy may limit women’s access to those who can provide business advice and public or private funding. Failure to understand the social and institutional impediments to the development of women’s businesses may result in the design and execution of gender-insensitive policies that deter female entrepreneurship.

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 & Minniti, 2007; Mari & 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 & Poggesi, 2016). Moreover, Welsh and colleagues (2014) claim that research on Japanese women entrepreneurs is scarce, despite women’s increasing role in the Japanese economy. 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 policy makers in designing and implementing more effective gender-sensitive government policies.

This paper is organized as follows. The next section provides a review of the literature on entrepreneurial self-efficacy and develops hypotheses grounded in a combination of self-efficacy and macro-level institutions in the entrepreneurial process. Section three presents the methodology, including data collection, sample characteristics, and the measurement of the variables. Section four provides the empirical results obtained through structural equation modelling based on SmartPLS software. The final section presents our conclusions with a careful consideration of the study’s drawbacks and implications for scholarship and practice.

**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 & 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 & Scott, 1983; North, 1990;
Powell & DiMaggio, 1991; Scott, 1995; 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 & 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. Some scholars have also noted that local institutional quality may play a crucial role in reducing entrepreneurial uncertainty (Shepherd et al., 2007) and influencing the allocation of entrepreneurial efforts (Bowen & De Clercq, 2008).

Prior empirical research on the link between institutions and female entrepreneurship reports mixed results. For instance, Yousafzai (2011) argues a positive impact of regulatory institutional arrangements upon both vision for women’s entrepreneurship and women’s entrepreneurial leadership. Similarly, Goltz et al.’s (2015) empirical study reveals that a country’s rule of law is positively related to women’s entry into entrepreneurship. Lee and colleagues’ (2011) quantitative research however suggests that the effect of government support policy on the satisfaction of Korean female entrepreneurs is not statistically significant. Thébaud (2015) used a sample of 28,775 individuals in 24 high-income countries over the period from 2001 to 2008 and showed that government-subsidized childcare is negatively related to women’s participation in entrepreneurial activity, whereas the contribution of government-subsidized paid leave for mothers to women’s entrepreneurial entry was non-significant. Furthermore, she found support for a moderate level of
government-subsidized paid leave for mothers as a consistent determinant of women’s propensity to grow and innovate. 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, 1997, 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 & 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.

*** INSERT FIGURE I ABOUT HERE ***

**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; Yousefzai 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 (Munõz & Kibler, 2016). The institutionalization of female entrepreneurship through legal rules elicits the recognition of entrepreneurial opportunities for women and influences the types of business ventures that they can create (Welter & 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 (Yousefzai 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 & 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 (Honig & Karlsson, 2004; Munõz & 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 and colleagues (2012) 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:

**HYPOTHESIS 1:** 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 & 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 & DeClercq, 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 (Munõz & 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, Chua & Neupert, 2006; Dimov, 2010; Kiebler et al., 2014; Munõz & 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 in spite of 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 & 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:

**HYPOTHESIS 2: 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 & 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 & 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 & Kirk, 2015). Building on these lines of theoretical and empirical reasoning, we propose the following hypothesis:

**HYPOTHESIS 3**: 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 (e.g., Baughn, Chua & Neupert, 2006; Estrin & 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 (a) formal institutional support and (b) 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:

**HYPOTHESIS 4a:** Women’s entrepreneurial self-efficacy mediates the positive effect of perceived formal institutional support on perceived venture performance.

**HYPOTHESIS 4b:** 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 10 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. Following an explanation of the value and aims of our research project, we were able to gain the support of these groups. Because of this support, we obtained their official 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%. 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%), it is still considered comparable.

We tested the significant differences between early-arriving responses (n=64) and late-arriving responses (n=138) in light of founder age, educational attainment, and marital status to rule out non-response bias. Non-response bias is typically tested by comparing respondents and non-respondents, but late respondents can be considered comparable to non-respondents (Armstrong & Overton, 1977). Due to the lack of evidence of significant differences between these two groups in our t-test analysis, we concluded that non-response bias was not a major concern in our study.

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 percent) had less than five employees. Only 3 percent of the women had run their business for longer than 16 years, whereas 45.5 percent had a history of less than 4 years. Unsurprisingly, in terms of the major area of business activity, female entrepreneurs were significantly more likely to engage in business services (65.84 percent) than manufacturing (11.39 percent). Approximately 60 percent 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 percent). The vast majority of female entrepreneurs in this study had no entrepreneurial experience before

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1 We distinguish the two types of female entrepreneurs as follows: early respondents were those who returned the questionnaires within two weeks after the survey delivery, whereas late respondents were those who returned the questionnaires after receiving the second author’s reminder email.
starting their businesses (84.2 percent). With regard to age, more than 70 percent of the sample was between 36 and 55 years old.

*** INSERT TABLE I ABOUT HERE ***

Measurement
The Dependent Variable
We adopted the venture performance scale developed by Lee et al. (2011). 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 & Locke, 2004; Baum et al., 2001), persistence (Cardon & 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) 10-item scale. This scale has been used in many other studies (Kickul et al., 2009). 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?” and “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 (Amoro et al. 2013, Shinnar et al., 2012; Scott, 1995). 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 cut-off-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 & 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 & Poggesi, 2016; Powell & 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 & Hunt, 2011; Roomi, 2001). 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, Wende & Becker, 2014). A variance-based approach is more appropriate for structural measurement models than covariance-based structural equation modelling (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; Hair et al, 2012). Third, the PLS regression enables
simultaneous assessments of statistical significance when there are multiple dependent variables in the model. Table III 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 & Larcker, 1981). The table shows that the convergent validity of the observed measures was satisfactory because the AVE values of all of the constructs exceeded the cut-off value of 0.50 (Fornell & 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 cut-off value of 0.55 (Falk & 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.

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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 & 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 percent). 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.

*** INSERT TABLE III ABOUT HERE ***

EMPIRICAL RESULTS

Table III 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 structural equation models, we conducted a confirmatory factor analysis (CFA) of the items related to the seven factors to verify construct independence using LISREL 9.1. (Jöreskog & Sörbom, 2012). The CFA confirmed that the seven variables were distinct from one another. The chi-square for this model was statistically significant ($\chi^2 = 433.94$, p-value = 0.000). The other assessments of
statistical fit were relatively satisfactory (comparative fit index [CFI] = 0.933, Tucker Lewis index [TLI] = 0.922, root mean square error of approximation [RMSEA] = 0.09), although some of the fits were slightly below the cut-off points recommended by MacCallum et al. (1996).

In this study, we estimated the structural relationships proposed in our model using Smart PLS 3.0. As recommended by Hair, Ringle, and Sarstedt (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, Hypothesis 1 is not supported. With respect to Hypothesis 2, 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 modelling provides quantitative support for the assumption that entrepreneurial self-efficacy bolsters female entrepreneurs’ venture performance ($\beta = 0.542, p < 0.001$), which confirms Hypothesis 3. 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 (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, Hypothesis 4b is confirmed. In the following section, we summarize the empirical evidence, address the limitations of our research, and provide proposals for future research.

*** INSERT TABLE IV ABOUT HERE ***

**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 (e.g., Dawson & Henley, 2015; Langowitz & Minniti, 2007; Shinnar, Giacomin & Janssen, 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 & Stephan, 2012; Kibler et al., 2014; Munõz & Kibler, 2016; Stephan & 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 & 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 policy makers 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 & Locke, 2004; Cardon & Kirk, 2013; Hopp & 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 common method variance. 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, Ahlstrom & Li, 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 non-economic 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 policy makers 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


## Figure I: Proposed Conceptual Model

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<th>Institutional Environments</th>
<th>Entrepreneurial Cognition</th>
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<tr>
<td>H4a</td>
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<tr>
<td>H4b</td>
<td></td>
<td>Control variables</td>
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<tr>
<td>H3</td>
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**Control Variables**
- Entrepreneur’s Age
- Marital Status
- Educational Attainment
- Entrepreneurial Experience
- Family Ties

**Note:** Own illustration
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Table II: Measurement Results

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Notes: N = 202; S.D. = standard deviation; AVE = average variance extracted; CR = composite reliability; *** p < 0.001.
Table III: Descriptive Statistics & Correlation Matrix

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Notes: N = 202; ESE = Entrepreneurial self-efficacy; Bold values indicate statistical significance at the 0.01 level; The italicized numbers in brackets indicate the square root of the average variance extracted (AVE)
Table IV: Partial Least Square (PLS) Estimation Results for Direct Effects

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<th>S.D.</th>
<th>t-value</th>
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</tr>
<tr>
<td>Family Ties → Entrepreneural Self-Efficacy</td>
<td>-0.062</td>
<td>0.049</td>
<td>1.270</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Marital Status (1: Married) → Entrepreneural Self-Efficacy</td>
<td>-0.136</td>
<td>0.062</td>
<td>2.181</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Entrepreneur's Age → Venture Performance</td>
<td>-0.062</td>
<td>0.047</td>
<td>1.310</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Educational Attainment → Venture Performance</td>
<td>0.002</td>
<td>0.033</td>
<td>0.070</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Entrepreneurial Experience → Venture Performance</td>
<td>0.044</td>
<td>0.043</td>
<td>1.038</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Family Ties → Venture Performance</td>
<td>-0.046</td>
<td>0.042</td>
<td>1.104</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Marital Status (1: Married) → Venture Performance</td>
<td>0.020</td>
<td>0.037</td>
<td>0.540</td>
<td>n.s.</td>
<td></td>
</tr>
</tbody>
</table>

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