Innovativeness and business relationships in women-owned firms: The role of gender stereotypes

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Abstract

This paper investigates the relationship between business contacts and innovativeness in women-owned firms and how women entrepreneurs' perception of gender stereotypes affects this relationship. We test our hypotheses using data obtained through a survey of 107 women entrepreneurs in Spain. The results show that maintaining close contacts with managers/entrepreneurs in different industries and with customers is significant in explaining innovativeness in women-owned firms. The stronger the women entrepreneurs' perception of stereotypes that depart from the masculine profile of the entrepreneur, the stronger the influence of these two types of close contact on innovativeness.

Keywords: entrepreneurship, women-owned firms, innovativeness, business contacts, gender stereotypes

Recent research on women's entrepreneurship has recommended that more attention should be paid to factors influencing the development and growth of women-owned firms (de Bruin, Brush, & Welter, 2007), particularly the underdeveloped area of factors related to innovation (Andersson, Berglund, Torslund, Gunnarsson, & Sundin, 2012; Alsos, Ljunggren, & Hytti, 2013; Blake & Hanson, 2005; Hampton, McGowan, & Cooper, 2011; Marlow & McAdam, 2012). To innovate, firms must be open to new ideas and be able to combine insights from

different areas of the company, stimulate collaboration between areas, and encourage people to generate new ideas and convert them into improved solutions (Garud, Tuertscher, & Van de Ven, 2013). This organizational attitude toward innovation, termed *innovativeness* (Hurley & Hult, 1998), is associated with greater sensitivity to changing market conditions, which can lead firms to identify and exploit new market opportunities (Hult, Hurley, & Knight, 2004).

Among factors that influence innovation and innovativeness, the important role of firms' relationships with other organizations and individuals has received significant attention (Lee, Lee, & Pennings, 2001; Rodan & Galunic, 2004; Stam & Elfring, 2008). New models of innovation (e.g., open innovation) highlight the external nature of the innovation process and suggest there is considerable dependence on the firm's interaction with its main users, customers, and a wide range of institutions (Chesbrough, 2003; Huizingh, 2011). The present study addresses two major research questions on how business relationships influence innovativeness in women-owned businesses: (a) What kinds of business relationships are relevant to innovativeness in women-owned firms? (b) Does the relevance of business relationships to innovativeness in women-owned firms vary with women's perceptions of social stereotypes of female entrepreneurs?

Women-owned firms constitute an especially interesting population for the study of innovativeness for several reasons. First, they possess a unique set of characteristics, including size, industry, and resource endowments. Women-owned businesses are usually small in terms of investment, employment, revenues, and growth (Gundry & Welsch, 2001; Orser, Riding, & Manley, 2006). They are concentrated primarily in the retail and service industries and face significant restrictions in access to resources (Minniti, 2009). Women's business ownership is concentrated in these traditional industries rather than in high technology, construction, or manufacturing industries whose characteristics may demand more urgent orientation to innovation (Anna, Chandler, Jansen, & Mero, 2000; Orser et al.,

2006). Although the link between innovation and technology may not be essential (Madrid-Guijarro, Garcia, & Van Auken, 2009), the social perception of lower innovativeness in firms owned by women may exist.

Second, previous research has highlighted additional restrictions that women face in accessing networks and achieving central positions in these networks (Moore & Buttner, 1997). Women have more difficulty than men in accessing valuable business contacts, due to their lower levels of business and professional experience (McGowan & Hampton, 2007) and close links with family and friends, who often do not belong to the woman's business environment (Robinson & Stubberud, 2009; Shaw, Marlow, Lam, & Carter, 2009). Business relationships play an important role in procuring critical resources for innovativeness in women-owned firms, such as technological and market knowledge, financial resources, or legitimacy (Johannisson, 2000; Slotte-Kock & Coviello, 2010).

These two issues do not apply exclusively to women entrepreneurs, but one aspect is specific to women's firms and entrepreneurial behaviour: the strong influence of social context on women's entrepreneurial activities (Brush, de Bruin, & Welter, 2009). The extent and nature of women's entrepreneurship are associated with women's roles and positions in the labour market and society (Marlow & Carter, 2004; Shaw et al., 2009), which may condition women's decisions about their ventures (Orser & Hogarth-Scott, 2002). According to Lituchy, Reavley, and Bryer (2003), women participate in society differently and perform different roles, since they are usually responsible for their homes and children, as well as for their own professional development as employees or business owners. Women's additional responsibilities not only increase the difficulty in accessing resources relevant to the firm's development (Minniti, 2009), but also help to consolidate social stereotypes that classify women in a profile of entrepreneurs who lack the criteria required for success, especially with regard to innovativeness. This social perception shapes many women entrepreneurs'

expectations of themselves, their firm's activity, and the social networks they need to develop. As de Bruin, Brush, and Welter (2007) have argued, individuals' decisions to undertake entrepreneurship and develop its potential are strongly influenced by their views of their abilities, the support they expect from society, and the business environment. Thus, women's perceptions of whether the social context legitimates or supports their role as entrepreneurs can indirectly influence how they evaluate the types of business relationships they believe relevant to improving their firm's innovativeness.

Our study's contribution to the literature is threefold. First, it deepens our understanding of how business relationships influence innovativeness in women-owned firms. Second, it facilitates an in-depth understanding of how women entrepreneurs manage business relationships to improve innovativeness, with particular attention on how perceptions of social acceptance influence the relevance of these relationships for innovativeness. Third, our comparison of groups of women entrepreneurs reinforces women's entrepreneurship as heterogeneous (Hughes & Jennings, 2012), providing a more fine-grained understanding of their innovative behaviour.

This study proceeds as follows. First, we examine previous literature in this field and define the research hypotheses. Next, we present our methodology and analyze the results obtained. The article concludes by discussing the findings and outlining opportunities for future research.

Literature Review and Hypotheses

This research explores the very first element of the innovation process: innovativeness. Innovativeness promotes entry into new business areas and the ability to envision new possibilities, which require new information and different ideas and perspectives (Hult et al., 2004). Innovativeness also requires resources and capabilities for experimentation and

exploratory activities (Kyrgidou & Spyropoulou, 2012). Thus, timely market information and resources, flowing through ties with different types of market actors, can significantly stimulate innovativeness (Hausman, 2005).

Women-owned firms represent a specific context for studying innovativeness and its relationship with business contacts. As explained above, women-owned firms tend to be small and located in traditional and nontechnological sectors. Business partners in small firms perform multiple roles—identifying opportunities, securing organizational legitimacy, and mobilizing resources such as knowledge, finance, and physical capital (BarNir & Smith, 2002; Wynarczyk, Piperopoulos, & McAdam, 2013). Relationships with different types of business actors may provide access to the resources needed and help small firms to overcome any size handicap (BarNir & Smith, 2002). Stuart (2000) reported that the resources small firms access through interorganizational ties have significant potential to enhance innovation and sales.

Women-owned firms may be hampered not just by their small size, but also by specific factors derived from the socio-economic and cultural structures in which they are embedded (Brush et al., 2009). Several authors argue that constraints on women entrepreneurs[1] can hinder their firms' development (Minniti, 2009). Thus, social roles involving domestic and family responsibilities assigned to women in most cultures are a major barrier to accessing resources (Achtenhagen & Welter, 2007; Lituchy, Reavley, & Bryer, 2003). Furthermore, women's roles and positions in the labour market and society at large as well as the stereotypes associated with women's entrepreneurial behaviour differ from predominant business norms. Research has observed a traditional association between the entrepreneur and masculinity (Ahl, 2004; Bird & Brush, 2002; Jennings & Brush, 2013), leading women to perceive themselves as lacking entrepreneurial skills and to seek feminized professions, sectors, and business fields (Marlow, 2002). Entrepreneurs thus contribute to the perpetuation

of gender stereotypes (Verheul, Uhlaner, & Thurik, 2005). Cliff, Langton, and Aldrich (2005) confirmed that female and male business owners tend to talk as if they organize and manage their firms in gender-stereotypical ways, even when there is no such difference in practice. Furthermore, the prevalence of masculine norms can affect both the concept of innovation and the processes that lead to it (Foss, Woll, & Moilanen, 2013). Wikhamn and Knights (2013), for example, found that open innovation reproduces rather than challenges masculine discourses.

Stereotypes of female entrepreneurial behaviour also condition women's interaction with the business community (clients, suppliers, financial institutions, business associations, etc.), potentially restricting their ability to attract resources (Langowitz & Morgan, 2003) or gain legitimacy (Nilsson, 1997). Hanson and Blake (2004) found that the nature and availability of resources, the local social structure, and the cultural environment all influence women entrepreneurs in nontraditional or male-dominated sectors. The "community of resources," which includes bankers, lawyers, and accountants, can act "as gatekeepers to entrepreneurship and help to shape the gender-based segmentation in entrepreneurship" (Hanson & Blake, p. 185).

Previous research has shown that business relationships are a significant tool supporting innovativeness in women-owned firms and that gender stereotypes may determine how women entrepreneurs use these relationships.

Hypotheses

According to the literature on innovation, forging formal and informal links with customers, suppliers, industry associations, research organizations, and government agencies increases input into the learning process and creates new opportunities for firms to access

knowledge that facilitates innovation (Gronum, Verreynne, & Kastelle, 2012; Wynarczyk et al., 2013).

Prior studies of women entrepreneurs have provided little clear evidence on the type and variety of business relationships maintained (Neergaard, Shaw, & Carter, 2005; Welter & Trettin, 2006). Renzulli, Aldrich, and Moody (2000) concluded that women's networks are less diverse than men's, which makes it more difficult for women to identify entrepreneurial opportunities and start companies. However, Sorenson, Folker, and Brigham (2008) suggested that, unlike men, women prefer networks with a broader range of people and more collaborative and cooperative relationships. Such networks enable women to acquire the resources to meet their business needs. Sappleton (2009) confirmed that both gender and belonging to a traditional versus nontraditional sector are significant predictors of the relational support that business owners can obtain. In a critical analysis of literature on networks, Foss (2010) suggested there are few major differences between the networks of female and male entrepreneurs and that there is likely to be greater variation within than between gender categories regarding network activities.

Studies of networks (e.g., Burt, 1992; Levin & Cross, 2004; Rodan & Galunic, 2004) have also analyzed how weak and strong contacts can influence innovation. While weak relationships permit access to more diverse information (Zaheer & Bell, 2005; Burt, 1992), close ones favour the quality of information transmitted (Hansen, 1999). Foss (2010) argued that literature on entrepreneurship and gender often perpetuates the idea that weak ties produce success for men, whereas strong ones hinder women's success. Other studies show, however, that strong networks developed by women and not related solely to family or friends influence various aspects of firm development positively. Greve (1995) observed that the strength of such relationships has a positive influence on small business start-ups. Close relationships with other firms increase the speed of information transfer, facilitating first-

mover advantages through innovative behaviour (Greve). Roomi (2009) stressed the value of trust and strong ties as being more important than weak ones in the growth stage of women-owned firms. Similarly, Durbin (2011) argued that the strength of network ties may affect the quality of knowledge exchanged in networks, its level of complexity, and its strategic relevance.

Based on the literature on innovation and women's entrepreneurship, we identified four types of close business relationships that can influence innovativeness in women-owned firms: same-industry entrepreneurs/managers, entrepreneurs/managers in a different industry, customers, and other collaborators (suppliers, financial institutions, business associations, and government entities).

Personal acquaintance with other entrepreneurs can have a positive influence on a firm's innovativeness, as they may act as role models or inspire new ideas. Close professional contacts with entrepreneurs/managers can also provide important resources for innovativeness. Since entrepreneurs rely on relationships with other entrepreneurs to combine ideas creatively to introduce innovations, previous relationships may increase the number of organizational relationships developed by entrepreneurs (BarNir & Smith, 2002). Geletkanycz, Boyd, and Finkelstein (2001) argued that business and managerial networks provide strategic benefits and a good base for attracting new partners and generating new strategic alliances.

In entrepreneurs' contacts with entrepreneurs/managers in the same industry, the benefits may depend on the resources shared. For example, firms in a cooperative agreement may share technological knowledge and skills, producing synergy to solve common problems outside the competitor's area of influence (Gnyawali & Park, 2009; Tether, 2002). Lechner, Dowling, and Welpe (2006) found that co-opetition networks have a significant—and the strongest—influence on sales in the years after foundation. These authors show that a

significant number of firms use competitors as subcontractors and receive subcontractor jobs from competitors while carrying out large projects with competitors. Thus, women entrepreneurs' networks with competitors could be based on the need for mutual learning and constitute a strategy to confront risk and uncertainty in establishing new products or innovative processes.

By maintaining relationships with entrepreneurs/managers from different industries, women entrepreneurs are likely to have fewer redundant ties (i.e., the same contacts and ties characterized by emotional closeness) and thus more access to new knowledge or information that fosters innovativeness. According to Capaldo (2007), firms should focus on diverse direct contacts to increase their potential to generate innovation. Capaldo showed that network diversity enables entrepreneurs to rely on multiple and varied sources to access different skills and mobilize heterogeneous competences.

In view of the above considerations, we propose the following hypotheses:

H1: Maintaining close relationships with managers/entrepreneurs from the same industry will have a positive influence on innovativeness in women-owned firms.

H2: Maintaining close relationships with managers/entrepreneurs from a different industry will have a positive influence on innovativeness in women-owned firms.

Collaboration with customers is important in helping a firm to improve its product innovation performance (Foss, Laursen, & Pedersen, 2011). There are many benefits to maintaining close relationships with customers (Tsai, 2009). Understanding the needs of influential customers may help firms to generate new solutions (Greer & Lei, 2012) and identify market trends early on, thus increasing the chances of new product development and success (Yli-Renko, Autio, & Sapienza, 2001). These relationships help to identify market opportunities for technology development and may reduce the likelihood of poor product design in the early development stages. In contrast to a more formal approach to marketing,

scanning informal and external marketing information is necessary for young firms with resource constraints and, at the same time, effective for detecting and exploiting market opportunities.

Collaborating with suppliers in product development can enhance new product quality and improve market performance (Lasagni, 2012). Firms can also collaborate with public organisms and financial entities. Such contacts can provide resources that encourage innovativeness at all stages of firm development (Spencer, 2003; Tsai, 2009). For example, firms can interact formally and informally with universities and research institutes to gain new scientific knowledge that benefits product or process innovations (Lasagni, 2012). Carter, Brush, Gatewood, Greene, and Hart (2003) argued that women entrepreneurs who use professional advisors receive more information on forms of financing beyond personal sources (i.e., savings, family, friends). Maintaining relationships with collaborators linked to a firm's entrepreneurial activity can enhance organizational innovativeness. Taking into account these positions, we propose the following hypotheses:

H3: Maintaining close relationships with customers will have a positive influence on innovativeness in women-owned firms.

H4: Maintaining close relationships with collaborators will have a positive influence on innovativeness in women-owned firms.

The literature on women entrepreneurs' perceptions of their social acceptance indicates that stereotypes of women as less entrepreneurial than men can negatively influence women's entrepreneurship (Shinnar, Giacomin, & Janssen, 2012). Gender stereotypes of entrepreneurial behaviour can also have an impact on the outlook of women who are already entrepreneurs, shaping the relationships they view as relevant to improving the innovativeness of their firms. First, if women perceive negative gender stereotypes, they also perceive the need for external legitimation of their new initiatives and for conducting an

active search for new entrepreneurial opportunities. Developing strong interorganizational relationships with customers and collaborators, both inside and outside the industry, can help women to achieve legitimacy and the resources needed to develop their initiatives. External legitimacy increases the organization's status in the community, facilitating the acquisition of resources (Partanen, Chetty, & Rajala, 2011). Second, customers of and collaborators with women's firms are exposed to the influence of gender stereotypes, since they normally act in conditions of limited information and uncertainty (Shinnar et al., 2012). Women entrepreneurs can foster closer relationships with customers and collaborators to reduce these asymmetries of information and uncertainty and to counteract the barriers that stereotypes can generate about their new initiatives. Third, the perception that these stereotypes exist may lead women to view the environment as more hostile to the development of their initiatives (Langowitz & Minniti, 2007; Zhao, Seibert, & Hills, 2005); in this respect, prior research has shown that entrepreneurs in hostile environments develop more cooperative relationships in order to obtain resources and share costs and risks (Dyer & Singh, 1998). Finally, some studies have shown that women entrepreneurs can use stereotypes to their advantage, transforming them in the long term (e.g., Calás, Smircich, & Bourne, 2009). Women entrepreneurs can exploit positive stereotypes—such as the association of women with trustworthiness, kindness and attention to detail—to build strong relationships based on trust with customers and collaborators and, over time, to dismantle negative stereotypes. In other words, recognizing stereotypes enables women to use them in order to defy them (Calás et al., 2009).

These arguments lead us to propose:

H5: Perceiving gender stereotypes enhances the relationship between maintaining close business contacts and innovativeness in women-owned firms.

Method

Sample

We tested the study hypotheses using a sample of women entrepreneurs in Spain. Although the Spanish context is now generally similar to that for Europe overall, the former political regime had reinforced social and cultural norms that involve traditional stereotypes and female roles (Ortiz Heras, 2006). A high percentage of the older population still adheres to these norms and often transmits them to younger generations. Data from the latest 2012 Global Entrepreneurial Monitor (GEM) Report show that Spain has less favourable perceptions than other EU countries participating in the project of women's professional choice to create a company, seek self-employment, engage in business opportunities against men, and harmonize professional and personal life. Various studies also show that traditional gender-role stereotypes associated with entrepreneurship persist in Spain (Mueller & Conway Dato-on, 2013; López-Sáez, Morales, & Lisbona, 2008). This persistence makes our sample of Spanish women entrepreneurs interesting. To collect the data, we obtained the contact details of women registered at www.e-empresarias.net, a website provided by the Programme for Entrepreneurial Support for Women and promoted by the Spanish Women's Institute and the National Council of Chambers of Commerce. This national programme, implemented in all Spanish regions and provinces, introduces women entrepreneurs to new technologies by offering them free advice and creating women-specific networks. We sent an email questionnaire to all women registered for this web service. The research data were collected from June to November 2006. Of the 3136 questionnaires sent, approximately 20% were returned due to invalid email addresses. The 118 questionnaires finally received represented a 4.7% response rate, close to the 6% average for email surveys in other studies (Ozgen & Baron, 2007). We eliminated seven incomplete questionnaires and then four outliers, after

applying various methods to detect univariate and multivariate outliers. Thus, our final sample consisted of 107 cases.

Nonresponse bias was tested using archival data on the number of employees. The results of an unpaired t-test show that the t-statistics were nonsignificant (Armstrong & Overton, 1977). Because we measured the variables with scales, procedural remedies were used to minimize the potential effects of common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). First, to control for item ambiguity and to ensure comprehensible descriptions of the constructs, a pretest of the questionnaire was performed with six women entrepreneurs not included in the final sample. These results led us to reword some items. Second, the cover letter promised anonymity, and the questionnaire instructions stressed that there were no preestablished correct or incorrect responses; these procedures were intended to reduce evaluation apprehension and any editing of responses for social desirability, acquiescence, and consistency with respondents' beliefs about researchers' expectations (Podsakoff et al., 2003).

Descriptive analysis of the sample showed that the firms were concentrated primarily in social, governmental, and personal services (29.1%), real estate and business services (35%), and, to a lesser degree, commerce, hotels, and restaurants (14.6%) and construction and manufacturing (11.7%). As for firm size, 23.4% of the businesses had no employees, 56.1% had 1-5 employees, 15% had 6-9 employees, and only 4.7% had 10-49 employees. Among the motivations given for starting a business (a multiple-option response), 40.4% of the women stated entrepreneurial opportunity, 36.2% the desire for independence in their work, 36.6% a personal challenge, and 19.6% an alternative to being employed. Only 5.7% said they started the business due to economic need caused by unemployment. Lastly, 43% owned 100% of the firm, 35% had 50% equity, and only 1% of the women had less than a 10% stake in the company. To evaluate their decision-making power in the company beyond property

(often merely an investment or an instrumental property), the respondents were asked to indicate whether they participated actively in company decisions, and 97.1% responded in the affirmative.

Taking into account the low response rate obtained, we performed a detailed comparative analysis to check the representativeness of our data, based on a control sample. Given the lack of official statistics about women-owned firms at the national level and the absence of databases with this type of information, we used the only relevant data available—GEM data for the same year, 2006—to evaluate to what extent our sample was representative of the population of women entrepreneurs in Spain. From the total adult population surveyed by GEM Spain 2006, we selected women classified as business owners and involved in managing the business (women entrepreneurs). The control sample included 1033 cases. Comparing the sample distribution across economic activity, firm size (number of employees) and reasons for establishing the business, we found that our sample follows very similar distribution patterns to the GEM sample, except for some small differences regarding the distribution of sectoral activity.[2] The GEM sample's lack of information on women's role in the company could explain the small differences between the two samples.

Measures

Level of innovativeness. The scale used to measure innovativeness was composed of five items evaluated on a 7-point Likert-type scale (1 = totally disagree; 7 = totally agree) based on studies by Hurley and Hult (1998) and Hult and Ketchen (2001). *Innovativeness* was operationalized as a measure of organizational behaviour oriented to identifying new entrepreneurial opportunities. The items included address the extent to which the firm accepts the technological innovation developed within the organization, actively searches for innovative ideas about products and services, accepts innovation in management programmes

and projects, does not penalize new ideas that fail, and encourages organizational innovation. The scale's internal consistency, measured with Cronbach's Alpha test, yielded an acceptable value of 0.747. Additionally, we performed a confirmatory factor analysis (CFA) using LISREL to assess dimensionality and convergent validity. The measurement model resulted in a good fit (χ^2: 7.47; p=0.19; NFI: 0.96; NNFI: 0.97; CFI: 0.99; GFI: 0.99; RMSR: 0.059; RMSEA=0.067) and the loadings of each indicator to the construct were significant ($t > 1.96$, $p < 0.05$), with scores ranging between 0.64 and 0.90, thus indicating that the observed variables reflected their construct (Hair, Anderson, Tatham & Black, 1999). Finally, Composite Reliability (CR=0.890) and Average Variance Extracted (AVE= 0.582) indicated adequate internal consistency of the construct.

Types of business relationship. Previous studies analyzing which business relationships have the potential to foster development of the entrepreneurial process indicate the presence of a wide range of contacts—customers, suppliers, industry associations, research organizations and government agencies. Yli-Renko et al. (2001) and Lee et al. (2001) highlighted the importance of relationships with customers and other collaborators (suppliers, financial institutions, public entities, etc.) in developing entrepreneurial capabilities, and the positive impact made by these relationships on the firm's performance. Other studies report the distinctive effects of intra- and extra-industry ties on performance and entrepreneurial capabilities (Stam & Elfring, 2008). We took these previous studies into account in selecting the types of business relationships in our analysis. Respondents were asked to assess on a 7-point Likert-type scale (1 = totally disagree; 7 = totally agree) the extent to which they maintained close relationships with all types of contacts: "We maintain close relationships with managers or entrepreneurs in the same industry or sector" (*Relsame*); "We maintain close relationships with managers or entrepreneurs from different industries or sectors" (*Reldifferent*); "We maintain close relationships with our customers" (*Relcustomers*); and

"We maintain close relationships with our collaborators (suppliers, financial institutions, chambers of commerce and government entities)" (*Relcollaborators*). Following Hansen (1999) and Levin and Cross (2004), we defined "a close relationship" as one in which the firms worked together as if they were one and the same company. To ensure that respondents understood the meaning of "close relationships," the questionnaire explained that the opposite of a close relationship would be a distant one and that the mid-point would be represented by a relationship characterized as somewhat close, in which the firms were in contact and trying to solve problems together.

Perception of gender stereotypes. To analyze the types of business relationship influencing innovativeness in women-owned businesses according to women's perception of gender stereotypes about entrepreneurship, we built a variable composed of the following four items: "there is a general social perception that women are more risk adverse than men"; "there is a general social perception that women do not have the same level of knowledge and abilities for firm creation that men do"; "given the attitudes generated by traditional gender roles, women are seen as less enterprising than men"; "creating a firm is not a socially accepted professional option for women." We derived these items from previous studies on gender stereotypes in entrepreneurship (e.g., Ahl, 2004; Bruni, Gherardi, & Poggio, 2004; Mirchandani, 1999). Respondents were asked to evaluate on a scale from 1 to 7 the extent to which they agree with these statements. The Cronbach's Alpha score for this variable was 0.787. According to the CFA results, the model obtained a good fit (χ^2: 3.11, p=0.21; NFI: 0.98; NNFI: 0.98; CFI: 0.99; GFI: 0.99; RMSR: 0.059; RMSEA=0.071) and the loading of each indicator to the factor was significant ($t > 1.96$, $p < 0.05$) and ranged between 0.48-0.91, indicating that the observed variables reflect their construct (Hair et al., 1999). The Composite Reliability (CR) was 0.785, and the Average Variance Extracted (AVE= 0.492) did not exceed the 0.50 threshold recommended. However, following Fornell and Larcker

(1981) we can accept the 0.4 threshold for AVE and that the convergent validity of the construct is still adequate if the CR is higher than 0.6. In conclusion, these results suggest an adequate internal consistency of the construct.

Control variables. We controlled for the effect of several variables that can influence the level of innovativeness. Firm size (*Size*) was expected to positively influence innovativeness because large firms accumulate more resources than small firms and this allows them to explore new opportunities (Lasagni, 2012; Tsai, 2009). Firm age (*Age*) can also impact innovativeness, as young firms tend to be more innovative than old firms even when they possess less-developed capabilities and resources (Gronum et al., 2012). The level of competitiveness perceived in the environment (*Compstrategy*) can also stimulate firm innovativeness (Auh & Menguc, 2005), as searching for new opportunities can be a strategic orientation to respond to competition. Finally, we expected firms that are more growth oriented (*Growth*) to be more innovative, because firms that seek to grow usually explore new ideas about products, services, technologies or management (Gronum et al., 2012; Gundry & Welsch, 2001). Growth orientation was measured subjectively on a 7-point scale (1 = totally disagree; 7 = totally agree) for the following statement: “Our most important goal is to grow.” To determine competition in the sector, we used an item that measures the frequency of changes in competitors’ strategies and market strategies, evaluated from 1 (never change) to 7 (change very often). Since our data on the number of employees is categorical (23.4% of the sample had no employees and over 70% were micro-enterprises with fewer than 10 employees), we believed the major differences would appear between firms with no employees and firms with employees, as the latter would share the common characteristics of microfirms. We therefore introduced the variable size coded as 0 for firms with no employees and 1 for those with employees. We also used a codified measure of firm

age and the GEM criterion (Reynolds et al., 2005) to differentiate between young firms (less than 3.5 years), coded as 1, and established firms (more than 3.5 years), coded as 2.

Analysis and Results

Table 1 shows the descriptive statistics and correlation matrix for the data analysis.

Insert Table 1 here

The hypotheses were tested using a moderated hierarchical regression analysis and the procedure suggested by Aiken and West (1991). We performed the linear regression in three steps: (a) regression with only the control variables (model 1); (b) adding the variables related to the different types of business relationship (model 2); (c) including the interaction terms in the regression equation (Model 3). The variables were mean-centred to minimize the risk of multicollinearity in equations with interaction terms (Aiken & West), and the effect of multicollinearity was tested to ensure that the variance inflation factors (VIF) of the variables did not exceed 2, thus enabling us to discount the effects of this factor on the results.

Table 2 shows the results of the regressions performed to test the hypotheses. The control variable effects revealed no significant influence on innovativeness. In model 2, incorporating the variables related to networks improved the total variance explained in innovativeness (R^2 = 0.243). The regression coefficients for the variables of close relationships with managers/entrepreneurs in other industries (0.342, $p<0.01$) and relationships with customers (0.228, $p<0.05$) were positive and statistically significant, supporting *H2* and *H3.* Including interaction terms in the regression equation (Model 3) increased the Adjusted R^2 (0.065). The regression coefficients corresponding to the variables of close relationships with managers/entrepreneurs in other industries (0.243, $p<0.05$) and relationships with customers (0.246, $p<0.05$) were positive and statistically significant, thus supporting *H5*.

Insert Table 2 here

To verify our findings, the sample was segmented using the median of the variable perception of gender stereotypes, following the procedure proposed by Perin, Sampaio, Barcellos, and Kügler (2010). Separate regression analyses were performed for the samples of women whose score on the scale of perception was lower (54 cases) or higher than the median (53 cases), respectively. At high levels of perception of gender stereotypes, relationships with managers/entrepreneurs in other industries (0.431, $p<0.001$) and relationships with customers (0.496, $p<0.001$) were positively related to innovativeness and statistically significant. At low levels of gender stereotype perception, however, neither relationship was significant (0.128 and -0.053, respectively). The following section discusses the results obtained.

Discussion

Summary

This study explores how business relationships improve innovativeness in women-owned firms, and contributes to the literature on women entrepreneurs and innovation by showing how women's close business contacts that are relevant to innovativeness depend on their perceptions of gender stereotypes about entrepreneurs.

The results demonstrate that maintaining close contacts with managers/entrepreneurs in different industries and with customers plays a significant role in explaining innovativeness in women-owned firms. When women entrepreneurs perceive stronger stereotypes that depart from the masculine profile of the entrepreneur, the relationship between the two types of close contact and innovativeness is stronger.

Women entrepreneurs who are aware of society's perception of them may orient their entrepreneurial behaviour toward strengthening close relationships with business contacts to

help them achieve various goals, such as improving their legitimacy in different areas. Shepherd and Zacharakis (2003) argued that gaining legitimacy among stakeholders (suppliers, distributors, customers, employees, society, etc.) can help firms to access resources and respond to competitive threats. Close contacts with customers or managers and entrepreneurs can encourage the sharing of resources, ideas, or new innovative projects.

Contrary to expectations, our study shows that neither close relationships with managers in the same industry nor close relationships with collaborators have a significant influence on the development of innovativeness in women-owned firms in general, regardless of women's perception of gender stereotypes regarding entrepreneurship. For managers, this result can be explained by the fact that women-owned firms occupy less central positions in their networks (Moore & Buttner, 1997). Women are thus isolated from valuable flows of information and resources and lack opportunities to identify information asymmetries and be the first to know of new market conditions (Tsai, 2001). Similarly, innovativeness of women-owned firms may not benefit from the advantages of close relationships in their industry due to their marginal position in industry networks. Furthermore, the absence of a significant effect on innovativeness of close relationships with managers and entrepreneurs in the same industry may mean that redundant information is shared, as a result of which the innovative orientation of firms in the same sector is unaffected or suffers a negative influence. As for close relationships with collaborators (such as suppliers, financial institutions, chambers of commerce, or government entities), the literature on gender suggests that women face more difficulties than their male peers in accessing support networks (Benschop, 2009; Mirchandani, 1999). For example, various studies show that women experience greater difficulty than men in accessing consultants' advice (Reuber, Dyke, & Fischer, 1991), or in obtaining financial resources, because financial institutions view women as lacking in credibility (Coleman, 2000; Marlow & Patton, 2005). . This may explain why financial

bodies, support organizations, and other general contacts are not included amongst the close contacts developed by women entrepreneurs. Our study thus highlights which types of contacts are associated with higher levels of innovativeness in women-owned firms. Studies such as Partanen et al. (2011) indicate that managers decide on the strength of tie needed in each relationship and the resources they expect to obtain from each tie. Moreover, managers can use their portfolio of relationships to gain resources and legitimacy. Increasing their efforts to maintain close relationships with customers and managers/entrepreneurs in other industries can enable women entrepreneurs to acquire useful contacts for their business goals.

Additional interpretations may also be offered to explain why perceptions of gender stereotypes condition the relationship between the types of business contacts that women entrepreneurs develop and the innovativeness of their firms. Perceptions of a specific social conception of woman entrepreneurs could be related to gender-blindness (Lewis, 2006), a phenomenon that assumes a gender-neutral social context (Kelan, 2009). Some women avoid the masculine paradigm underlying entrepreneurship and conceive their experience of entrepreneurship as the ability to abide by "universal" standards of good business. These women attempt to avoid being considered different from the masculine norm. Our results suggest that women who do not acknowledge differences between the roles of men and women entrepreneurs orient their behaviour toward avoiding any action that is stereotypically associated with women. This result is striking, because women usually use personal network contacts for different purposes than men, even in nonbusiness matters (Shaw et al., 2009). Women entrepreneurs, therefore, may show more prejudice in establishing close contacts with customers and other managers or entrepreneurs, perhaps preferring relationships that are more distant. Developing close relationships can lead to uses beyond the strictly professional, which these women entrepreneurs might interpret as seeming less business-focused to those outside the firm and thus negatively impacting stakeholders' perceptions of them, their

reputation and legitimacy, and ultimately their performance. As Lewis (2006) suggested, despite commitment to a gender-neutral stance, women involved in entrepreneurial networks are very aware that their business behaviour is constantly subject to evaluation and as a result they make every effort to create the right impression.

In contrast, women entrepreneurs who recognize social stereotypes may feel gender strengthens credibility and the achievement of their goals, and thus is not an issue to avoid or negate. As a result, they may choose not to avoid developing close relationships and rather, may even foster them. Calás et al. (2009) stressed this idea, summarizing the findings of Blake and Hanson (2005) that women entrepreneurs in male-dominated sectors can succeed alone on their own terms, which include taking advantage of feminine stereotypes and upholding them as a resource. What is more, through knowledge of their local context, these women can overcome widespread social norms about women in entrepreneurial activities.

Contributions to Scholarship

Although the literature on innovation has grown exponentially in recent decades, few researchers have analyzed the relationship between gender and innovation. Our study contributes to the literature in this respect in several ways. First, it extends our understanding of innovativeness and more generally that of innovation in SMEs by analyzing the relationships between different types of links with external agents and innovative behaviour. Several studies have noted a relatively poor current understanding of innovation in SMEs (Edwards, Delbridge, & Munday, 2005; Wynarczyk et al., 2013). We studied women-owned firms as a distinctive context for SME innovativeness through which to understand the influence of the specific socio-economic and cultural structures in which these firms are embedded. Our study suggests that women entrepreneurs' promotion of closer interbusiness relationships (rather than weak ties) is associated with improved and more innovative firm

behaviour. Furthermore, our research extends the work conducted in previous studies such as that by Alsos, Ljunggren, and Hytti (2013) by advancing knowledge of innovation activity in low-tech settings and service firms.

Second, our research deepens the current understanding of women's entrepreneurship as concerns the value of business relations for innovativeness, particularly how women entrepreneurs' perceptions of social acceptance can influence their close relationships with specific types of contacts. We consider social context to be an explanatory factor that indirectly conditions women entrepreneurs' business relationships. Whereas earlier studies have analyzed individual factors conditioning women entrepreneurs' relationships to explain their degree of access to relationships or the kind of relationship established, our study advances the role of social context as a factor determining how these relationships are used (Ahl, 2006). Neergaard et al. (2005) indicated that women's self-awareness might lead them to restrict their networks. Our results suggest that women entrepreneurs can also strengthen their business networks to improve fundamental capabilities such as innovativeness. Various studies have demonstrated the prescriptive function of stereotypes in establishing expected behaviour, and the fact that men's and women's gender stereotypes strongly influence entrepreneurial intentions in contemporary society (Gupta, Turban, Wasti, & Sikdar, 2009; Mueller & Conway Data-on, 2008). Our results show that stereotypes also condition how contacts are used. Like Calás et al. (2009) and Blake and Hanson (2005), we found that women entrepreneurs' awareness of gender stereotypes can lead them to exploit these stereotypes to their advantage.

Third, our comparison of groups of women entrepreneurs reinforces the heterogeneity of women's entrepreneurship (Hughes & Jennings, 2012) by providing a more fine-grained understanding of their innovative behaviour.

Applied Implications

Based on the research results, we recommend government actions to foster women's entrepreneurial development, taking into account the existence of differing groups of women entrepreneurs and their perceptions of stereotypes in their social context. Strong relationships that enable resource exchange and collaboration agreements with customers and other contacts may be a key factor for innovativeness. The development of such actions should, however, take into account the following issues. First, women entrepreneurs' use of a wider range of relationships to develop new entrepreneurial initiatives may result from the greater effort required to legitimate them to customers and collaborators. While developing more diverse contacts may influence innovation positively, the constant need to legitimate oneself to new contacts can detract unnecessarily from the resources and efforts applied to developing new projects, and ultimately limit development possibilities in women's firms. Government can provide essential aid by eliminating barriers that hinder women entrepreneurs' efforts to establish business contacts and by facilitating the development of these contacts. Nevertheless, such actions may be insufficient and ineffective in the long term if gender stereotypes are not actively dismantled.

Second, this study suggests that some women do not feel that society perceives women entrepreneurs differently from men or refuse to admit that gender determines their entrepreneurial behaviour. Belief in gender neutrality may lead women who hold these views to take on greater demands to fulfil their responsibility in a culture of merits that rewards the same behaviour for all entrepreneurs, independent of gender. These women will be less sensitive to government initiatives that "classify" them as special or at a "disadvantage" vis à vis male entrepreneurs and may reject positive discrimination measures by governments.

Policies and government actions to promote the wealth and diversity of entrepreneurial models can gradually generate a culture that breaks down existing business stereotypes.

Initiatives to encourage men and women entrepreneurs to work together to develop innovative projects or to exchange business experiences can increase the cross-gender recognition of valuable ideas and business initiatives. A more favourable social consciousness of the role of women entrepreneurs, independent of their characteristics or those of their businesses, would also facilitate the creation of new social rules that legitimate women entrepreneurs and their firms. More importantly, such measures would foster women's pride in creating a new understanding of entrepreneurship that includes feminine behaviour without undermining its credibility.

Limitations and Directions for Future Research

This study suggests several directions for future research. First, while we analyze the types of business relationships that women sustain, a study in greater depth could determine the extent to which these relationships provide access to resources (e.g., knowledge) essential to improving innovativeness (Edwards et al.. 2005). Secondly, this study considers only some types of contacts, whereas other studies, such as Becker and Dietz (2004), have argued that R&D cooperation with different partners has a positive effect on innovation. A study considering such relationships independently would open up new paths for analyzing innovation in women's firms. Third, further studies could usefully replicate our research in other countries to investigate whether the persistence or reformulation of gender stereotypes of women entrepreneurs has a similar influence to that found in Spain. For example, Mueller and Conway Data-on (2013) found that the traditional pattern of gender stereotypes is not consistent across cultures and that countries such as the United States may have more heterogeneity in gender-role orientation amongst both women and men. Analysis could also explore androgynous orientations in different countries.

Besides its significant contributions, this study presents some limitations. Firstly, the small sample size may influence the finding that certain relationships were not significant. For example, the results show that relationships with managers or entrepreneurs in the same industry do not significantly influence innovativeness. Since these relationships may involve family members or friends, future studies should analyze the role of these relationships and their effect on innovativeness in women-owned firms. The effects of specific types of relationships with entrepreneurs and managers in the same sector could also be studied in greater depth. A larger sample size would enable the segmented analysis of the results based on the sector and characteristics of women's firms.[3] Finally, the data were obtained in 2006, and some variables studied may have changed since then.

In conclusion, this study shows that analyzing the impact of business contacts on innovativeness in women's firms without including factors relating to the social context can produce an incomplete picture of the situation and thus constitute an inadequate treatment of women entrepreneurs' actions, disregarding important distinctive elements inherent to women's entrepreneurship.

Notes

1. Previous studies (e.g., West & Noel, 2009) stress that entrepreneurs in small firms have the greatest influence on the strategy and direction a firm adopts and therefore that the firm's behaviour generally reflects the individual behaviour of the entrepreneur. We use this argument to extrapolate assumptions from individual to firm.

2. The detailed descriptive analysis of the two samples is available on request from the authors.

3. We performed one-way ANOVAs on the full sample to compare the means of the following variables: innovativeness, business relationships, and the perception of gender stereotypes. We used the four categories employed in the sample description and included a fifth, named "Other." The results of the ANOVAs reveal significant differences in the level of innovativeness and relationships with customers. Given the small size of the sample in some sectors, however, the results should be treated with caution. Furthermore, because these results could differ for another group of sectors, they should be tested in subsequent research.

JEL Classification: L26, D85, M13, O39

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Table 1

Means, Standard Deviations, and Correlations

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Innovativeness	5.88	0.91	1.00								
2. Relsame	4.98	1.79	0.175	1.00							
3. Reldifferent	5.54	1.46	0.402**	0.261**	1.00						
4. Relcustomers	6.03	1.22	0.323**	0.120	0.156	1.00					
5. Relcollaborators	5.99	1.25	0.235*	0.109	0.246*	0.457**	1.00				
6. Compstrategy	4.22	1.48	-0.006	-0.104	0.053	0.011	0.054	1.00			
7. Growth	5.16	1.71	-0.032	0.048	-0.085	0.062	-0.079	0.006	1.00		
8. Size	0.77	0.43	0.122	0.136	0.265**	0.031	0.219*	-0.004	-0.058	1.00	
9.Age	1.55	0.50	0.012	-0.010	0.024	0.084	0.055	0.213*	-0.094	0.024	1.00
10.Perception	4.21	1.71	0.156	0.153	0.139	0.096	0.007	0.268**	-0.054	0.143	0.165

*Pearson correlations are reported; * significant p< 0.05;** significant p <0.01*

Table 2

Results of the Regression Analysis

	Model 1		Model 2		Model 3	
	Stand. coeff.	*t-statistic*	Stand. coeff.	*t-statistic*	Stand. Coeff.	*t-statistic*
Control variables						
Age	-0.031	(-.273)	-0.086	(-0.843)	-0.023	(-0.224)
Size	0.001	(0.006)	-0.109	(-1.064)	-0.068	(-0.675)
Compstrategy	0.012	(0.112)	0.002	(0.024)	-0.062	(-0.620)
Growth	-0.069	(-0.634)	-0.060	(-0.609)	-0.023	(-0.245)
Business relationships variables						
Relsame			0.024	(0.241)	0.021	(0.214)
Reldifferent			0.342**	(3.231)	0.312**	(3.057)
Relcustomers			0.228*	(2.012)	0.224*	(1.998)
Relcollaborators			0.124	(1.093)	0.161	(1.431)
Perception					0.005	(0.043)
Moderating effects of perception of gender stereotypes						
RelsamexPerception					-0.058	(-0.563)
ReldifferentxPerception					0.243*	(2.245)
RelcustomersxPerception					0.245*	(2.186)
RelcollaboratorsxPerception					-0.128	(-1.100)
R^2	0.005		0.243		0.345	
Adjusted R^2	-0.041		0.169		0.234	
Change in adj. R^2	-		0.210		0.065	
F-statistic	0.109		3.283**		3.116**	

** significant p <0.05; ** significant p<0.01.*