Set Up to Fail: Explaining When Women-led Businesses Are More Likely to Fail

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ABSTRACT

Drawing on role congruity theory, we examine whether and when women-led ventures are more likely to fail than men-led ventures. We investigate the relationship between the gender of the leading entrepreneur and business failure and three important moderators of this relationship: whether the leadership assignment is consistent with merit, whether the venture operates in a female-dominated industry, and whether the venture is operated by a spousal team. Drawing on a unique, nationally representative data set of entrepreneurial firms sampled from the U.S. population in 2005 and followed yearly until 2011, we demonstrate that female entrepreneurs' businesses are more likely to fail than those of their male counterparts. Regarding the moderating effects, our results show that female entrepreneurs' businesses are more likely to fail when their merit-based competence is inferior to that of their cofounders. However, in the same scenario, male entrepreneurs are still able to lead their businesses successfully. We also find that women entrepreneurs' disadvantages in leading new businesses are amplified in contexts that many have expected to be supportive of women, including in industries dominated by women and within spousal teams. Together, our results suggest that women's disadvantages in leading their businesses may be perpetuated by gender beliefs that discount women's leadership. Based on our findings, we discuss our contributions to theory and practice, and we offer implications for future research.

Keywords: entrepreneurship, new venture, gender, women, leadership, role congruity theory

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Scholars of organizations have long been interested in leadership in task groups (Eagly & Karau, 2002; Kanter, 1977; Williams & O'Reilly, 1998). Studies have primarily examined teamwork in established formal organizations and in task groups as part of experimental settings. Results consistently show that gender remains a basis for distributing rewards and assigning leadership, despite the rise of meritocracy in modern society (Ridgeway & Berger, 1986; Ridgeway, Johnson & Diekema, 1994). Recent research on autonomous, naturally forming groups of entrepreneurial founders also provides evidence that gender trumps, or modifies, the effect of merit in organizing task relations, limiting women's access to positions of power (Loscocco & Bird, 2012; Thébaud, 2015; Yang & Aldrich, 2014).

Although we have learned a great deal from research on the causes of women's diminished likelihood to assume leadership positions, we know little about the consequences of such gender-based arrangements for entrepreneurial ventures. Most research on entrepreneurship has focused exclusively on gender inequality in entrepreneurial entry – the tendency to leave wage employment to launch one's own business (Budig, 2006; Carr, 1996; Jennings & Brush, 2013; Jennings & Cash, 2006). Substantial questions remain about whether women entrepreneurs, once they become leaders, are able to lead their teams and manage their businesses successfully, in comparison to equally qualified male entrepreneurs.

This study advances the literature by examining the relationship between the leading entrepreneur's gender and business failure. Our theoretical framework is based on role congruity theory (Eagly & Karau, 2002), which posits that gender beliefs prescribe expectations about men and women's competence, and such expectations are so pervasive that people make implicit

(often unconscious and automatic) assumptions about the different value that men and women can add in leadership roles. According to role congruity theory (Eagly & Karau, 2002), leadership is more challenging for women because the "think manager think male" paradigm remains in spite of progress women have made over the past decades (Eagly, Karau & Makhijani, 1995; Koenig, Eagly, Mitchell & Ristikari, 2011). These biases are problematic, particularly when one considers the results of a recent a meta-analysis on gender and perceptions of leader effectiveness which revealed that men and women leaders do not differ in perceived leader effectiveness, as reported by their subordinates (Paustian-Underdahl, Walker, & Woehr, 2014). Nevertheless, people generally associate leadership with masculine characteristics (Koenig et al., 2011) and this can create bias against women leaders (Ridgeway, 2009, 2011).

In business, new venture creation has historically been an arena for business*men*, and the stereotypical characteristics of successful entrepreneurs, such as "agentic," "pragmatic," and "risk-taking," are masculine traits (Bruni, Gherardi & Poggio, 2004; Calas, Smircich & Bourne, 2009; Yang & Aldrich, 2014). Because male leaders are assumed to be more competent (Benokraitis & Feagin, 1995; Glick & Fiske, 1996), they are perceived with more confidence and trust in task-oriented settings than their female counterparts (Berger, Conner & Fisek, 1982; Eagly & Johannesen-Schmidt, 2001). These biases create unfavorable perceptions about women leaders and their fit for leadership roles, thereby making it more difficult for them to successfully lead their teams (Eagly & Karau, 2002; Eagly, Makhijani & Klonsky, 1992; Heilman, 2001).

Our theoretical framework begins with the baseline proposal that ventures led by women are more likely to fail than ventures led by men. We then examine three important conditions that help explain when women-run businesses are more or less likely to fail than those led by men, including (a) meritocracy, (b) industry, and (c) spousal teams.

First, we theorize whether the success of women and men in leading their businesses is dependent on their competence relative to that of their cofounders. Role congruity theory (Eagly & Karau, 2002; Eagly et al., 1992; Heilman, 2001) posits that gendered expectations attached to female gender roles can lead people to discount women's competencies and make it more difficult for women to succeed. Such gendered expectations for leadership may interact with role inconsistency, leading to an even more pronounced gender bias against women. Role inconsistency happens when leadership assignment is not consistent with meritocracy (e.g., when leaders are outperformed by their cofounders on some aspects) (Umphress, Simmons, Boswell, & Triana, 2008). Such scenarios increase the possibility that women will be questioned more than their male counterparts regarding whether they can lead the team successfully (Castilla & Benard, 2010). Thus our first hypothesis posits that role inconsistency with meritocracy is more likely to disadvantage female entrepreneurs.

Second, we examine the success of women and men in different industries, because industry contexts are infused with gendered expectations for men and women's leadership. People may have difficulty succeeding when working in contexts where they are heavily outnumbered (e.g., tokens whose group comprises less than 15% of the group) (Kanter, 1977). Yet, research shows that men benefit from a glass escalator effect (Williams, 1992) and advance more quickly than equally qualified female peers in pink-collar (i.e., female dominated) settings (Hultin, 2003; Williams, 1992). To our knowledge, the glass escalator effect has never been tested in an entrepreneurship setting. We test whether this phenomenon holds for entrepreneurs by comparing the failure rates of male- and female-led businesses in male- and female-dominated industries.

Third, our last proposed moderator concerns gender roles in the family, because family is

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the context within which many new businesses are created (Aldrich & Cliff, 2003; Yang & Aldrich, 2014). Gender expectations regarding family presume men's breadwinner identity and women's support for their husbands' careers as well as primary responsibility for childcare and housework. Such gender expectations may make it difficult for women entrepreneurs to successfully lead a business compared to their male counterparts. Accordingly, our last hypothesis examines whether working in spousal teams would place women entrepreneurs at a disadvantage when leading their businesses.

Our study contributes to research on gender and entrepreneurship in several ways. We investigate a social justice issue by studying whether and when the dream of having one's own business is as attainable for women as it is for men. In doing so, we examine whether three domains that should be beneficial for women (meritocracy, female-dominated industries, and spousal teams) may in fact be trumped by gender roles and perpetuate gender inequality. This happens in subtle yet persistent ways people may not consciously realize (Ridgeway, 2011). Our context is increasingly important as women are making inroads into entrepreneurship. More women-owned businesses than men-owned businesses were established during the 1990s and 2000s, and by 2007, women-owned firms were almost 30% of firms in the U.S. (U.S. Department of Commerce, Economics and Statistics Administration, 2010).

We contribute to theory by expanding role congruity theory within the context of entrepreneurial teams. Experimental studies have relied on randomly constructed groups to investigate the effects of social beliefs about gender. In reality, social groups oriented toward collective goals are often comprised of people with pre-existing social relationships, and the tasks they attempt to solve are complicated by other features of their social contexts. Studying naturally forming social groups involved in new venture creation allows us to test meritocracy

explanations about entrepreneurs' qualifications as well as the industry in which the business operates as important factors influencing the survival of entrepreneurs' firms. Our research also exposes a contradiction in that environments which should provide support for women (i.e., female dominated industry, spousal teams) in fact advantage men and disadvantage women. The results speak to the literature on gender roles and explain how normative gender expectations influence men and women entrepreneurs' ability to run a successful business.

THEORETICAL FRAMEWORK AND HYPOTHESES

Role congruity theory is a theory of prejudice toward female leaders (Eagly & Karau, 2002; Eagly et al., 1992; Heilman, 2001). The theory posits that female leaders may be evaluated less favorably than male leaders, in part, because their gender roles are incongruent with stereotypical leadership roles. For example, women are expected to have predominantly communal qualities, such as warmth, friendliness, and consideration. However, these qualities are often contradictory to the stereotypical leadership roles, such as being competitive, aggressive, and ambitious (Heilman, 2001). According to Eagly and Karau (2002), role incongruity between women's gender roles and leadership roles creates two forms of prejudice toward female leaders. It not only leads to less favorable evaluations of women's potential for leadership but it also creates less favorable evaluations of the leadership behavior of women than men. Prejudice toward female leaders, along with many other factors, may have caused the underrepresentation of women in the leader positions: women constitute only 4% of the CEOs of the nation's largest firms indexed on the S&P 500 (Catalyst, 2016), although they make up approximately 50% of the U.S. workforce.

Drawing on role congruity theory, we argue that these less favorable evaluations of women's leadership may lead to a higher chance of failure among women-led ventures compared

to men-led ventures (Eagly & Karau, 2002; Eagly et al., 1992; Heilman, 2001). Although role congruity theory has often been applied to explain leadership in large and bureaucratic organizations, it may also apply to the entrepreneurship setting (Eagly & Johannesen-Schmidt, 2001). Entrepreneurship has historically been associated with business*men*, and the traits of successful entrepreneurs, such as being "agentic," "pragmatic," and "risk-taking," are stereotypically masculine characteristics (Bruni et al., 2004; Calas et al., 2009). Consequently, the role incongruity between women's gender roles and the leadership role in entrepreneurship may create prejudice toward women entrepreneurs, similar to negative attitudes toward women managers in established organizations (Eagly & Karau, 2002; Eagly et al., 1995; Koenig et al., 2011). Accordingly, women entrepreneurs are more likely to face challenges in leading their businesses compared to male entrepreneurs who have equal qualifications.

Building on this baseline argument, we examine three moderators of the relationship between the gender of the leading entrepreneur and firm failure: whether the leadership assignment is inconsistent with meritocracy, whether the venture operates in a female-dominated industry, and whether the venture is operated by a spousal team. All three conditions invoke gendered expectations for men's and women's task roles, and thus help explain when ventures led by women are more likely to fail than ventures led by men.

Meritocracy as a Moderator of the Entrepreneur Gender → Firm Failure Relationship

We begin by asking: what happens when role assignments are not consistent with meritocracy? Imagine two entrepreneurial teams with almost equivalent team-level competence. While one team assigns leadership based on merit promoting the most competent individual, the other one promotes an individual whose competence is inferior to that of other team members. The two scenarios may affect the performance of the leader differently, depending on the gender

of the leading entrepreneur.

Theories of gender emphasize that gendered expectations for competence create contingencies for team performance, allowing teams led by male entrepreneurs to perform better than teams led by female entrepreneurs, even when the leading person is not the most qualified based on merit. Role congruity theory (Eagly & Johannesen-Schmidt, 2001; Eagly & Karau, 2002; Eagly et al., 1992) maintains that because men's gender roles are more congruent with the leader role, male leaders will have an easier time leading their business even when they do not appear to be the most competent person based on merit. This is because individuals are more likely to favor men's leadership and gloss over their inferior competence (Glick & Fiske, 1996; Sidanius & Pratto, 1999). However, when the leading entrepreneur is a woman, if she is less competent than some of her cofounders, they will be more likely to question her qualifications and less willing to follow her lead. For example, research recognizes double standards of competence such that women, as lower status individuals, will have their competence scrutinized more than that of their male counterparts because of males' higher status (Foschi, 1996, 2000). When double standards are applied, individuals are more likely to penalize women when they fail to demonstrate competence because their higher status male counterparts get more benefit of the doubt. As Foschi (2000: 25) articulated, "The higher the status, the more convincing the demonstration of *incompetence* will have to be" for the high status group member (i.e., men) to incur the penalties that would be imposed on the lower status group members (i.e., women). Therefore, when assignments are not based on meritocracy, leading female entrepreneurs will be more likely to have difficulties leading their teams than their male counterparts (Umphress, Simmons, Boswell, & Triana, 2008).

However, when the leadership assignment is more consistent with meritocracy, having

procedures that assign leadership roles and tasks based on competence will level the playing field for women and allow them to succeed at a rate similar to that of their male counterparts. This reasoning is consistent with the findings of Yang and Aldrich (2014) who reported that when top management team members in a venture were evaluated based on performance standards, the statistically significant effect of gender favoring men to be the leader of the entrepreneurial venture was attenuated. Umphress et al. (2008) also found that participants were more likely to discriminate against women with superb qualifications when participants were not given directions and were left to their own devices to make selection decisions. However, this effect was attenuated when participants were instructed to focus on candidates' job-related qualifications. Therefore, making assignments based on meritocracy appears to level the playing field for qualified women, allowing them to perform at levels that are comparable to those of their qualified male counterparts. We advance the following hypothesis.

Hypothesis 1: When entrepreneurial leadership assignments are less consistent with meritocracy, entrepreneurial teams led by women are more likely to fail than entrepreneurial teams led by men. When leadership assignments are more consistent with meritocracy, this relationship will be attenuated.

Female-Dominated Industry as a Moderator of the Entrepreneur Gender → Firm Failure Relationship

In addition to meritocracy, another important contextual factor that matters particularly for small businesses, is the industry where the businesses operate. Industries are infused with gendered expectations for men and women's task positions because the primary tasks have been pervasively viewed as either male-typed or female-typed, and industries are often either predominantly masculine or feminine.

Theorizing the effect of a group's gender composition on individual performance, Kanter (1977) argued that tokens (15% or less of a group) and minorities (25% or less of a group) will receive a great deal of attention in teams, which could be either good or bad for the tokens. Imagine a male entrepreneur in the cosmetics industry or a female entrepreneur in the mining industry. Such individuals would be in the minority numerically because the overwhelming majority of employees and leaders in those industries would be of the opposite sex. The attention a token receives can be good if the person enjoys the limelight. Especially if the token performs well, they could be made a role model for others from their social group. However, tokens may also feel ignored, isolated, or disrespected by those around them if they are not performing optimally (Kanter, 1977). Whether tokenism results in positive or negative outcomes depends on the token's performance and the work context.

There are theoretical and empirical reasons to believe that being a token could result in different outcomes for men in female-dominated industries than for women in male-dominated industries. Role congruity theory (Eagly & Johannesen-Schmidt, 2001; Eagly & Karau, 2002; Eagly et al., 1992) maintains that people expect more from men by default while simultaneously holding women to a higher performance standard to be impressed. This implies that women leaders in small firms may have more difficulty succeeding compared to male leaders in male-dominated industries. Thus, role congruity theory would predict that because men are the typical employees in male-dominated industries and they are also higher social status group members compared to women, it will be easier for men to succeed than women. In other words, men's gender roles will be viewed as congruent with their task roles in a male-dominated industry, and they will be seen as a good fit for leading a business (Eagly & Johannesen-Schmidt, 2001; Eagly & Karau, 2002; Eagly et al., 1992). In contrast, females must prove themselves more given that

they are from a lower-status group, they are not stereotypically seen as leaders in that industry, and because they are subjected to double standards of competence (Foschi, 1996, 2000).

But what about female-dominated industries? There are competing theories here. Arguments based on tokenism (Kanter, 1977) would predict that male entrepreneurs will be more strictly scrutinized than their female counterparts in female-dominated environments. Just as women would have to prove themselves more in a male-dominated environment, males may also have to prove themselves in a female-dominated environment where questions about their competence may be raised. However, there are also reasons to believe that males in female-dominated industries may be more successful than females in female-dominated industries.

Because men have higher social status than women (Ridgeway et al., 1994), they are more likely to thrive in predominantly female industries compared to their female counterparts. Expectations about gender roles facilitate leadership positions for men because female leaders are often evaluated less favorably than male leaders (Eagly & Karau, 2002; Eagly et al., 1992; Heilman, 2001). Further, men have been shown to face less competition in female-dominated industries and be shielded from some obstacles experienced by their female counterparts because of the glass escalator effect (Barnett, Baron & Stuart, 2000). According to Williams (1992), people assume that males in predominantly female occupations do not wish to remain in those feminine jobs because they are not a good fit for those roles. It is also assumed that these men are only filling such occupations until they can advance to more prestigious roles (Simpson, 2004). For example, in pink-collar settings that employ women predominantly, coworkers often assume that males in traditionally female work want to get ahead and therefore promote them up the career ladder more rapidly than they do females (Hultin, 2003; Williams, 1992). Additional evidence of the glass escalator has been found by Hultin (2003) sampling a large Swedish

longitudinal data set. Consistent with role congruity theory, these studies show that believing men in predominantly female settings are a better fit for leadership roles will facilitate men becoming leaders and performing well (Eagly & Karau, 2002; Eagly et al., 1992; Heilman, 2001). Applying this logic in the entrepreneurship setting, we predict that male entrepreneurs will have advantages in both female-dominated industries and male-dominated industries. Overall, we make the following prediction.

Hypothesis 2: When new businesses are created in male-dominated industries, entrepreneurial teams led by women will be more likely to fail than entrepreneurial teams led by men. When new businesses are created in women-dominated industries, entrepreneurial teams led by women will still be more likely to fail than entrepreneurial teams led by men but the effects of female gender on business failure will be attenuated.

Spousal Teams as a Moderator of the Entrepreneur Gender → Firm Failure Relationship

Both theory and empirical evidence suggest that spousal relationships within the family context exert a strong influence on men and women's behaviors (Bianchi, Robinson & Milkie, 2006; Yang & Aldrich, 2014). Previous research on entrepreneurial team formation has shown that women prefer to start businesses with their husbands because they have limited social networks and the family context generally provides more social support and protection (Renzulli, Aldrich & Moody, 2000; Ruef, Aldrich & Carter, 2003). However, the higher level of gendered expectations associated with marriage may imprint task relations and dampen women's ability to lead their businesses (Bianchi, Milkie, Sayer & Robinson, 2000; Bittman, England, Sayer, Folbre & Matheson, 2003; Nock, 1998). Compared to friendship and kinship, spousal relationships are deeply imbued with symbolic displays of masculine and feminine accountability (Brines, 1994; Fenstermaker & West, 2002; Nock, 1998). In American culture, gender roles embedded in

spousal relationships have been institutionalized as "breadwinners" and "homemakers," indicating men's primary responsibility for earning most household income and women's economic (at least partial) dependence on their husbands (Berk, 1985; Gorman, 1999).

Consistent with role congruity theory (Eagly & Karau, 2002; Eagly et al., 1992; Heilman, 2001), we propose that when entrepreneurs are leading businesses where their spouse is involved, gender expectations will differentially influence an entrepreneur's ability to lead. First, gendered family role expectations – male breadwinners and female homemakers – allow male entrepreneurs to devote more time to their businesses but detract from the time women entrepreneurs can devote to their businesses. Research shows that women spend more time on housework and childcare than men, a phenomenon termed "the second shift" (Hochschild, 1989; Hochschild & Machung, 2012). Analyzing data from the 2000 National Survey of Parents, Bianchi et al. (2006) concluded that gender specialization continues with "married fathers spending almost twice as many hours in the labor market each week as married mothers, but with mothers doing twice as many hours of non-market work as fathers" (Bianchi et al., 2006: 55).

Second, normative family expectations presume women's greater support for their husbands' careers than men's support for their wives' careers. Compared to their male counterparts, women are less likely to have a spouse who helps them with the business and takes care of the house and provides the necessary childcare while they focus on their business. To date, the majority of couples still exhibit the "traditional" model whereby men's careers are the top priority and the primary source of family income (Winkler, 1998; Winkler, McBride & Andrews, 2005). Data show that although 61% of all married couples are dual-earners (Winkler, 1998; Winkler et al., 2005), men are still the primary breadwinners in 76% of American families (Winkler et al., 2005). If women entrepreneurs are leading the spousal business, their husbands

are likely to maintain a full-time job elsewhere to provide for the family and fulfill breadwinner expectations. By contrast, if male entrepreneurs are leading the business it is more likely that their wife will devote time to help her husband's business succeed. This results in female entrepreneurs having less help than their male counterparts, which makes it more difficult for women-led business to survive.

Either of these situations alone, or a combination of both, would limit a female entrepreneur's ability to run their business within a spousal relationship (Loscocco & Bird, 2012; Loscocco & Smith-Hunter, 2004; Loscocco & Robinson, 1991; U.S. Department of Commerce, 2010). This would not be the case in non-spousal relationships because there would be no such breadwinner or homemaker expectations among the cofounders. Although there could still be differences in social status between men and women cofounders, the gender role expectations would not be as pronounced or confining to women as they might be among spousal teams. In fact, gender researchers have noted that the influence of gender is less central in kinship and friendship than in marital relationships (Bianchi et al., 2000). Research also shows that individuals in cross-gender friendships hold egalitarian values and believe in each other's competencies (Kalmijn, 2002). Accordingly, we make the following prediction.

Hypothesis 3: When entrepreneurial team members are connected by spousal relationships, entrepreneurial teams led by women are more likely to fail than entrepreneurial teams led by men. This relationship will be attenuated in non-spousal teams.

METHOD

We use data from the Panel Study of Entrepreneurial Dynamics II (PSED II) to analyze the effects of task assignment and leadership formation on the performance of entrepreneurial teams. PSED II is one of the few data sets designed to study new businesses and entrepreneurial

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teams. For a long time, research on entrepreneurship was constrained by the difficulties of

obtaining representative samples of entrepreneurial teams. Beginning in the early 1990s,

Reynolds and his collaborators demonstrated that it was possible to rigorously identify nascent

entrepreneurs attempting to start new businesses (Reynolds, 2007). The resulting panel research

design was eventually called the Panel Study of Entrepreneurial Dynamics I (PSED I). Based on

what investigators learned from that study, an improved research design was made for PSED II,

with more effective screening questions for identifying entrepreneurs and their co-owners.

Data and Sample

PSED II started in 2005 with the selection of nascent entrepreneurs based on screening a

representative sample of adults in the U.S. The research design for the PSED II consists of two

phases. In the first phase, a representative sample of 31,845 individuals living in the contiguous

48 states and the District of Columbia was screened to identify entrepreneurs. When an adult 18

years of age or older was identified and agreed to respond to the survey, a screening interview

was conducted to identify entrepreneurs, including qualifications questions, questions on

respondents' demographics, and information about their households.

A set of three general qualification questions was asked to identify individuals who were

creating a new business: (1) "Are you, alone or with others, currently trying to start a new

business, including any self-employment or selling any goods or services to others?" (2) "Are

you, alone or with others, currently trying to start a new business or a new venture for your

employer, an effort that is part of your normal work?" (3) "Are you, alone or with others,

currently the owner of a business you help manage, including self-employment or selling any

goods or services to others? If respondents said yes to at least one of the three questions, three

additional questions were used to ascertain whether respondents had taken any action in creating

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a new business, whether they would share ownership of the new businesses, and whether the new businesses had become fledging firms. About 87% (1,214) of those identified as entrepreneurs agreed to participate in the study (Reynolds & Curtin, 2009). By using these selection criteria, PSED II improved upon previous research designs by identifying a sample of valid nascent entrepreneurs who are active in business creation (Reynolds, 2007).

In the second phase, full interviews were conducted to collect information on all the entrepreneurs, and their social relationships (if applicable). During the phone interview, respondents were asked, "How many people will legally own this new business – only you, only you and your spouse, or you and other people or businesses?" If the respondent indicated others would share ownership in the venture, they were asked to identify up to five people who would have the highest level of ownership, and the ownership percentage to be held by each team member. The respondents were then asked to provide information about each cofounder, including ascribed and achieved characteristics.

The initial interview in 2005 was followed by six yearly follow-up interviews from 2006 to 2011. The same research questions were repeated in each follow-up interview. Thus PSED II is a longitudinal study of entrepreneurs and their new businesses.

We use information on the owner founders of new businesses to construct entrepreneurial teams. Nearly half of the new businesses in PSED II are owned by multiple owners, typically consisting of two to three owners. Among the multi-member teams, 65% are mixed-sex teams, 28% are all-men teams, and 6% are all-women teams. Within mixed-sex teams, 71% are spousal teams, and the other two major social relationships connecting team members are kinship and friendship. Nearly half of the businesses are created in wholesale and professional service industries. The distributions of male-led and female-led business suggest

some evidence for gender segregation across industries. Whereas male-led businesses are more likely to be created in professional service and construction industries, women-led businesses are more likely to be created in wholesale and retail industries, as well as education services and health industries. We begin with an analysis of all ventures, including those founded by solo entrepreneurs and entrepreneurial teams, but we will focus on entrepreneurial teams, including both mixed-sex and same-sex teams, to test the hypotheses because our research questions are about the effects of leadership on business survival.

Dependent Variable

Survival time. This is defined as the duration between starting time and termination date of an emerging business (Reynolds & Miller, 1992; Schoonhoven, Burton & Reynolds, 2009). We define the starting time as the conception date when nascent entrepreneurs initially began the business creation process. To determine the date of termination, we first evaluate entrepreneurial status: "Do you consider yourself to be actively involved with the new business (startup) or disengaged from it?" If the answer is "disengaged," we further use the question "Are there any other people still involved?" to differentiate business termination from individuals' exits. For terminated businesses, we obtain the termination time from the question "In what *month* and *year* did you end your active role in working on this business startup?" Thus the unit of a business's survival time is a month. For individual exit, a business is coded as surviving but treated as a *right-censored* observation at the point of individual exit because respondents who provide information on their businesses are no longer in the sample after their exits. Of the individuals who quit their businesses, only 8% reported that other people were still working on their new ventures. In most cases, an individual quit indicates termination of a new venture.

Independent Variables

Gender of the leading entrepreneur. This variable is measured by gender of the

entrepreneur who is in charge of the daily operations of the new business, coded 1 for men, 0 for

women. The question asked of the respondents was "Which of the owners would be considered

in charge of day to day operations of the new business?" Respondents were allowed to report (1)

one individual owner is in charge, (2) several owners jointly are in charge, or (3) all owners are

equally in charge. A valid measure of the lead entrepreneur should encompass two dimensions:

authority and responsibility. The self-reported answer regarding "Who is in charge of the daily

operation of a new business" indicates both authority and responsibility. Although respondents

are allowed to report multiple lead entrepreneurs, only 9% of multi-member teams, and 6% of

mixed-sex teams have more than one owner taking the lead. This finding is consistent with

previous research suggesting that leadership in task groups is mostly assumed by a single

individual in order to improve the efficiency of decision making and meet social traditions with

respect to internal authority (Bavelas, 1960; Gould, 2002).

Leadership assignment inconsistent with meritocracy. This is measured as the

number of merit-based criteria on which cofounders are more competent than the leading

entrepreneur. Note that because the cofounders are the owner founders who are founding the

same businesses with the leading entrepreneur, they are, by our definition, not the leading

entrepreneur in our data. We first identify six merit-based characteristics: (1) years of work

experience in the same industry where a new firm is created; (2) years of managerial experience;

(3) startup experience, indicated by the number of other new businesses created; (4) the number

of other businesses owned, (5) the highest level of education that an owner has completed; and

(6) years of full-time paid work experience. The first four measures directly concern task

competence relevant to leading or managing new businesses, which have been found to have

significant effects on new ventures' performance and survival (Brüderl, Preisendörfer & Ziegler, 1992; Cassar, Forthcoming; DeTienne & Cardon, 2012). Thus we expect these measures to be salient in entrepreneurs' decisions regarding leadership. The last two measures – education and general paid work experience – are not specific to the context of starting new businesses. However, they are credentials indicating basic human capital qualifications in capitalist labor markets (Pager & Shepherd, 2008). We take an inclusive approach, considering both general and specific human capital variables in our analysis. Thus, we identify which owner ranks highest in the team according to each of the six merit-based criteria and then count the number of merit-based criteria on which a cofounder rather than the leading person ranks highest. The measure ranges from 0 to 6. When the value of the variable is 6, the leading entrepreneur's competence is inferior to at least one of the cofounders' competence according to all six merit-based criteria.

Team type. Using information on the gender of each owner founder, and the social relationships between owners, we differentiate five types of entrepreneurial teams: solo entrepreneurs, spousal teams, non-spousal mixed-sex teams, all-men teams, and all-women teams. Because there are only 36 all-women teams, we decided to combine them with all-men teams to represent same-sex teams. In our analysis of the full sample, we treat non-spousal mixed-sex teams as the reference group and include three dummy variables for each of the other three team types. In our analysis of entrepreneurial teams, we treat non-spousal mixed-sex teams as the reference group and include two dummy variables for spousal teams and same-sex teams.

Industries dominated by men or women. PSED II identified the industry for each business by asking the respondent the 6-digit NAICS industry code for their business. Using the industry code, we added the variable – the percentage of women employees in an industry – collected from the U.S. Census Bureau to the PSED II data. An industry is treated as male-

dominated (coded as 0) if the majority of employees are male and female-dominated (coded as 1) if the majority of employees are female.

Control Variables

　　Startup activities. We control for two types of business activities conducted by entrepreneurs to develop routines for their startups: whether owners have started preparing a business plan, and whether they have signed an agreement regarding ownership shares. These two types of activities have been found to increase business survival in prior studies (Delmar & Shane, 2003; Yang & Aldrich, 2012). Both indicators are time-varying variables, coded using time information updated monthly.

　　Team size. Size was measured by the number of owner founders. We control for size because prior studies have suggested that new ventures founded by larger teams are more likely to succeed than those founded by small teams (Ruef et al., 2003). If male-led businesses are larger than female-led businesses, team size will explain why businesses led by men are more likely to survive than businesses led by women. Thus we control for the number of owner founders in our analysis.

　　Social support. Research has emphasized a positive relationship between how many supporters one has and the likelihood of them successfully creating a business (Kim, Longest & Aldrich, 2013). To control for this potential confounding factor (i.e., the gender difference in creating a successful business is, in part, explained by the level of support men and women receive), we included three measures of social support: (1) the number of employees hired by a new business; (2) the number of helpers, defined as people who do not have an ownership share, but have provided significant support, advice, or guidance on a regular basis to a new business; (3) the number of key non-owner founders, defined as people who do not have an ownership

share, but have made a distinctive contribution to the founding of this new business, such as planning, development, financial resources, materials, training, or business services.

Household conditions. We control for a variety of household conditions, including household income level using bands of income, the number of adults, and the number of children in the households. We use household income level rather than the absolute household income because some respondents refused to report the absolute household income but were willing to share the level of their income as a range. The ordinal variable we use has 22 income levels. These variables have been found to relate to new businesses' survival in previous research (Kim et al., 2013). Household income and the number of adults in a household relates to the amount of financial resources and human capital available to businesses. We also control for the number of children because entrepreneurs, especially men, may feel more pressure to create successful businesses when they have more dependents at home (Bianchi et al., 2006).

Employment status. We control for the leading entrepreneur's and the cofounders' employment status, measured by whether they have another full-time wage job outside the business. Having a full-time wage job may signal an entrepreneur's lack of commitment to the business, and thus affect his/her persistence in entrepreneurship. It may also directly affect how much time an entrepreneur can spend on the new business.

Time spent on new business. The cumulative number of hours entrepreneurs have spent on their businesses can affect business survival. Gendered family responsibilities in the household domain affect men and women's abilities to lead their teams by shaping the time and effort they can devote to their businesses. For example, the "doctrine of separate spheres" (Cowan, 1983), prescribes men's breadwinner identity and women's primary responsibility for childcare (Berk, 1985; Gorman, 1999; Thébaud, 2010) which can disproportionally affect the

time that men and women have to run their businesses. Thus we include two measures for time investment: (1) the total number of hours the leading entrepreneur has spent on the business; (2) the total number of hours the cofounders have spent on the business.

Average competence of entrepreneurial teams. We measure and control for the average competence of entrepreneurial teams based upon each of the six merit-based characteristics, because competence itself may be an important predictor of business failure.

Analytical Strategy

Survival analysis is ideal to test emerging organizations' survival because it uses information on both events and time (Allison, 2010; Blossfeld, Golsch & Rohwer, 2007; Cox & Oakes, 1984; Tuma, Hannan & Groeneveld, 1979). We chose the Cox Proportional hazard model because this model leaves the baseline survival function unspecified (Blossfeld et al., 2007), easily incorporates time-varying variables (Allison, 2010; Hosmer, Lemeshow & May, 2008), handles left-truncated and right-censored data (Guo, 1993), and effectively deals with survival time with ties (Collett, 2003).

The hazard rate of interest is the instantaneous death rate, or conditional death rate:

$$h(t) = \lim_{\Delta t \to 0} \frac{p(t \le T < t + \Delta t | T \ge t)}{\Delta t} = \lim_{\Delta t \to 0} \frac{\frac{p(t \le T < t + \Delta t, \ T \ge t)}{\Delta t}}{P[T \ge t]} = \lim_{\Delta t \to 0} \frac{\frac{p(t \le T < t + \Delta t)}{\Delta t}}{P[T \ge t]} = \frac{f(t)}{S(t)}$$

The formula indicates that the hazard rate is the ratio of the probability density function to the survival function, meaning the approximate probability that a new venture is terminated between the time interval [t, t + Δt], conditional on its probability of surviving to time t.

In Cox proportional hazards models, the hazard rate of failure at time t, $h(t)$, is:

$$h(t) = h_0(t) exp[\boldsymbol{\beta X}(t)]$$

where $h_0(t)$ is a baseline hazard function (shared across the population), $\boldsymbol{X}(t)$ is a vector of covariates (varying across individual observations), and $\boldsymbol{\beta}$ is a vector of the estimated regression

coefficients.

In our analyses, we are aware of potential methodological problems related to research design and data collection that may bias model estimation: left-truncation, right-censoring, and survival time with ties. Both left-truncation and right-censoring lead to incomplete panel data (Guo 1993). Left truncation occurs when emerging organizations have already been exposed to the risk of quitting for a certain period (depending on when they started) when they came under observation. While the conception date of emerging organizations (the date when nascent entrepreneurs initially launched business creation) is their original time of being at risk of termination, in practice emerging organizations can only be identified and sampled after they have existed for a certain period. Given the time lag between startups' conception dates and the beginning point of our observation, left-truncated data include disproportionate numbers of hardy organizations, which are those that survived long enough to be selected into the sample (Hannan, Carroll, Dobrev & Joon, 1998).

With left-truncated data, if the start time of being at risk is known, we can specify the length of elapsed time before entry into the observation with a conditional likelihood approach (Allison 2010; Guo 1993). The conditional likelihood approach excludes subjects from the risk set when they have not yet entered into our observation. We apply a conditional likelihood approach in our analysis, and specify the length of elapsed time in the pre-entry period as equal to the age of a startup at the date of the screening interview (Yang & Aldrich, 2012).

RESULTS

Insert Table 1 and Figure 1 about here

Table 1 shows descriptive statistics and correlations for all variables. We first describe the probability of failure for entrepreneurial firms based on the gender of the leading

entrepreneur. We then establish a baseline for hypothesis testing, clarifying the effect of having a male leader, after controlling for a variety of conditions. Then, we test our hypotheses.

Descriptive Results

Figure 1 displays the probability of failure for male-led and female-led businesses. Since the founding stage, new businesses led by women are more likely to fail than those led by men. For example, by the end of the second year since the founding date, about 15% of businesses led by women have been terminated, whereas 10% of businesses led by men have been terminated. By the fifth year since the founding date, 26% of businesses led by women have been terminated, whereas 15% of businesses led by men have been terminated. By the tenth year since the founding date, 49% of businesses led by women have been terminated, whereas 36% of businesses led by men have been terminated. In our models, we will examine the extent to which gender differences in business failure still remain after controlling for team-level and individual-level variables and the extent to which gender differences in business failure are moderated by conditions regarding team members' competence, the industry environment, and spousal teams.

Establishing a Baseline

We next examine the effects of having a male or female leading entrepreneur on new business failure and the moderating effects of meritocracy, the industry context, and spousal relationships by conducting proportional hazard models. Because the dependent variable is the time when a new business is terminated, the coefficients indicate the effects of independent variables on new business failure. Therefore, positive coefficients suggest that independent variables increase failure rates and decrease survival rates, whereas negative coefficients suggest that independent variables decrease failure rates and increase survival rates.

Insert Table 2 about here

We start with baseline models that examine the effects of having a male or female leading entrepreneur and all control variables. Table 2 presents three models: Model 1 contains all ventures, including those run by solo entrepreneurs and entrepreneurial teams; Model 2 includes ventures run by solo entrepreneurs; and Model 3 includes ventures run by entrepreneurial teams, either mixed-sex or same-sex. Model 1 shows that among all businesses, the hazard rate of failure for male-led businesses is 23% lower than for female-led businesses, after including controls. In other words, male-led businesses on average are 23% less likely to be terminated than female-led businesses (notice that 23% is equal to 1-exp(-0.26)). Three dummy variables were included in Model 1, comparing solo entrepreneurs, spousal teams, and non-spousal same-sex teams with the reference group, non-spousal mixed-sex teams. None of the three coefficients was significant, suggesting that the hazard rates of failure for the three types of businesses are not significantly different than those for non-spousal mixed-sex teams.

We then separated businesses run by solo entrepreneurs and entrepreneurial teams. The coefficient of the gender variable is not significant in Model 2 which only includes businesses run by solo entrepreneurs, but it is significant in Model 3 which only includes businesses run by entrepreneurial teams. Among businesses created by entrepreneurial teams, the hazard rate of failure for male-led businesses is 32% lower than for female-led businesses. The three models together suggest that businesses led by male entrepreneurs are more likely to survive than those led by female entrepreneurs, and the gender difference still holds among businesses created by entrepreneurial teams. Thus the results from the baseline models support that entrepreneurial teams are an appropriate setting to examine how team conditions moderate male and female entrepreneurs' abilities to lead their businesses successfully. Our analyses for hypothesis testing will focus on all ventures founded by entrepreneurial teams.

When Gender Trumps Merit

Building on the baseline findings, we examine the extent to which the gender difference in business failure is moderated by the level of consistency between leadership assignment and individual members' competence. In Hypothesis 1, we proposed that when leadership assignments are less consistent with meritocracy, entrepreneurial teams led by women are more likely to fail than those led by men. This relationship will be attenuated when leadership assignments are more consistent with meritocracy. To test Hypothesis 1, we included a two-way interaction of the gender of the leading entrepreneur and the number of merit-based criteria where cofounders are more competent than the leading entrepreneur in Model 1 of Table 3.

Insert Table 3 and Figure 2 about here

We found support for Hypothesis 1, as Model 1 of Table 3 shows that women-led businesses are more likely to fail than male-led businesses when the cofounders are more competent than the leading entrepreneur on merit-based criteria. To interpret the interaction results, we plotted the interaction in Figure 2. The vertical axis in Figure 2 represents the hazard rate of failure. We plotted the moderator variable at plus and minus one standard deviation as is common (Aiken & West, 1991). Other variables were constrained to their mean values. Since the baseline hazard varied over time, we used a fixed point in time, the average survival time, $(h_0(30))$, for the plot (Trevor, 2001). Two important findings are worth noting. First, the failure rate of male-led businesses is rather constant, nearly independent of the extent to which the male leader is more competent than other team members. It suggests that male leadership is rather robust, nearly unaffected when cofounders are more competent than the male leader in terms of work experience, startup experience, and other qualifications. Second, the failure rate of female-

led business dramatically increases when cofounders are more competent than the female leader on merit-based criteria. For example, the failure rate of female-led businesses increases by 17% when the cofounders are more competent than the female leader according to an additional merit-based criterion, and the failure rate of female-led businesses increases by 62% when the cofounders are more competent than the female leader on another three merit-based criteria (19% is equal to exp(0.16)-1; and 67% is equal to exp(0.16*3)-1). These findings support the argument that women leaders are scrutinized more and thus are more vulnerable when they fail to demonstrate superior competence to their team members on a variety of aspects.

Female-Dominance in Industries Amplifies Male Advantages in Business

Hypothesis 2 proposes that when new businesses are created in male-dominated industries, entrepreneurial teams led by women will be more likely to fail than those led by men. When new businesses are created in women-dominated industries, entrepreneurial teams led by women will still be more likely to fail than those led by men but these effects will be attenuated. To test Hypothesis 2, we included a two-way interaction of the gender of the leading entrepreneur and a dummy variable for women dominated industries in Model 2 of Table 3.

The results provide partial support for Hypothesis 2, as Model 2 of Table 3 shows that men-led businesses are more likely to survive than female-led businesses in both male-and female-dominated industries. However, men-led businesses have a greater advantage in industries dominated by women and, contrary to our expectations, women-led businesses have a greater chance of failure in women-dominated industries compared to men-dominated industries. The gender ratio of the hazard rate (defined as the odds of failure for male-led businesses relative to that for female-led businesses) is 0.70 among businesses founded in male-dominated industries (0.70 is equal to exp (-0.35)), but only 0.25 among those founded in female-dominated

industries (0.25 is equal to exp(-0.35-1.05)). In other words, among businesses in male-dominated industries, the failure rate for businesses led by men is 70% of that for businesses led by women. Among businesses founded in female dominated industries, the failure rate for businesses led by men is only 25% of that for businesses led by women. In other words, the gender gap is much larger in female-dominated industries than in male-dominated industries.

Insert Figure 3 about here

To help interpret the interaction effects, we plotted the hazard of failure for men-led and women-led businesses in the two industries in Figure 3. To be consistent with Figure 2, we constrained control variables to their mean values, and used the average survival time, 30 months, as the fixed point in time, ($h_0(30)$), for the plot (Trevor, 2001). Figure 3 shows that women-led businesses are more likely to fail in either male-dominated or female-dominated industries, but their failure rates are much higher in female-dominated industries. The interaction effects also show that both men-led and women-led businesses are more likely to fail in female-dominated industries than their counterparts in male-dominated industries. Because female-dominated industries are primarily service and sales industries whereas male-dominated industries are primarily construction, technology, and finance industries, businesses in female-dominated industries, in general, have lower chances of survival.

Spousal Relations Disadvantage Women Entrepreneurs

Based on expectations about gender roles within a marriage, we proposed in Hypothesis 3 that when team members are connected by spousal relationships, entrepreneurial teams led by women will be more likely to fail than teams led by men. This relationship will be attenuated in non-spousal teams. To test Hypothesis 3, we included a two-way interaction of the gender of the

leading entrepreneur and a dummy variable denoting spousal teams in Model 3 of Table 3.

We found support for Hypothesis 3, as Model 3 of Table 3 shows that male-led businesses are less likely to fail than female-led businesses when the new businesses are created by spousal teams. The gender ratio of the hazard rate (defined as the odds of failure for male-led business relative to that for female-led business) is 0.67 among nonspousal mixed-sex teams (equal to exp(-0.40)), but only 0.42 among spousal teams (equal to exp(-0.42-0.47)). In other words, among nonspousal mixed-sex teams, the failure rate for businesses led by men is 67% of that for businesses led by women. Among spousal teams, the failure rate for businesses led by men is only 42% of that for businesses led by women. The gender gap in business failure is larger in spousal teams than in non-spousal teams. The interaction of team type and the gender of the leading entrepreneur is presented in Figure 4. To be consistent with previous figures, we constrained control variables to their mean values, and used the average survival time, 30 months, as the fixed point in time, ($h_0(30)$), for the plot (Trevor, 2001). The plot shows evidence supporting Hypothesis 3 that entrepreneurial teams led by women are more likely to fail than those led by men. The association between female-led businesses and business failure is more strongly positive in spousal teams compared to non-spousal teams.

Insert Figure 4 about here

DISCUSSION

Theoretical Implications

Our findings support role congruity theory (Eagly & Karau, 2002; Eagly et al., 1992; Heilman, 2001) because men appear to have an advantage when leading entrepreneurial teams. Their firms are more likely to survive when (a) the leading entrepreneur is surrounded by a team

with a higher competence level than their own, (b) in predominately female industries, and (c) in spousal teams. When the leading entrepreneur is male and his employees have more qualifications than he does, those male leaders are better able to lead their firms reliably and for a longer period of time than their female counterparts. This demonstrates that male leaders have an advantage leading their business venture to success, which supports role congruity theory.

The present findings extend role congruity theory to an entrepreneurial field setting and to the firm level. Role congruity theory maintains that expectations about gender influence the perceptions that others have about one's potential contributions to a group, including as a group leader. Our findings extend role congruity theory to an entrepreneurial setting with tangible financial outcomes for the entrepreneurs involved. The findings show that role congruity theory can be applied in entrepreneurial groups formed through prior social connections.

Our results also extend role congruity theory (Eagly & Karau, 2002; Eagly et al., 1995; Eagly & Mladinic, 1989) and suggest that it needs to go further in predicting the success of men. Not only are women evaluated more harshly than men in leadership positions, as the theory suggests, but gender effects seem to trump other characteristics which would seem (on the surface) to favor women. For example, even in predominantly female industries where one might expect a barrier to entry for men and a knowledge advantage for women, male-led businesses are more successful. Therefore, gender trumps industry effects even in industries where one might think women would have an advantage. Women may self-select into female industries, perhaps because the barrier to entry is lower. However, this may not lead to business success and may suppress the advantages they should obtain from their gender being congruent to the task.

We also find results similar to the glass escalator effect (Hultin, 2003; Williams, 1992) which demonstrates that males in predominantly female settings advance at a faster rate than

their equally qualified female counterparts. The finding that male-led businesses in predominantly female industries are more likely to succeed than female-led businesses further suggests that men are given the benefit of the doubt more so than women. It appears that there are double standards (Foschi, 1996, 2000) because women are held to a more challenging standard in order to achieve the same level of success as their male counterparts.

The results also have implications for research on gender and family, implying that the family structure can perpetuate inequality between spouses in a family business. Gender role expectations of males as breadwinners and females as caregivers likely influence how much the entrepreneurs can devote themselves to their business, how much help they receive from their cofounders in spousal teams, and whether women are the leaders of those ventures. Gender stereotypes are taken for granted and they perpetuate the existing gender status structure which facilitates success for male leaders more so than female leaders (Ridgeway, 2009, 2011).

Practical Implications

We demonstrate some of the challenges that female-led businesses face. Research on entrepreneurship has demonstrated the challenges of starting a new business, including the liability of newness and smallness (Brüderl & Schussler, 1990; Freeman, Carroll & Hannan, 1983; Singh, Tucker & House, 1986; Yang & Aldrich, 2011). Our results seem to suggest a *liability of a womanness* given the main effect showing male-led businesses survive longer. The origins of inequality in entrepreneurial businesses appear to be grounded in the broader social inequality in gender roles. This makes the matter both subtle and persistent because gender roles are deeply embedded in most social domains of our society (Heilman, 2001; Nosek et al., 2007). In fact, our findings seem to justify having males as the leaders in organizations even when others are more competent than them. This is troublesome from a social justice perspective and

implies that the dream of being one's own boss is not as attainable for women as it is for men.

Therefore, our results present a dilemma with respect to the assignment of leadership roles in the workplace. Common sense and fairness may suggest that meritocracy is the way to assign leaders. In other words, those who are the most highly qualified for the position should be the leaders. However, our findings say something to the contrary. Because new ventures with male leaders are more likely to survive even when those men are less qualified than their teams, our findings support a leadership advantage for male leaders. These findings may partially explain why the women in these businesses (who have stronger qualifications in many instances than the leading male entrepreneur) tolerate being the supporters of less qualified men who are running the business. Women may realize that male leaders may facilitate better firm performance in the long run. In the family context, women may also simply be following their prescribed gender role as caregiver (in the case of women with small children) while letting their spouse satisfy their prescribed gender role as the primary breadwinner (Bianchi et al., 2006).

We make a few suggestions to improve opportunities for women to lead entrepreneurial teams. One suggestion is to make people aware of how deeply embedded gender stereotypes are held at the implicit/subconscious level which perpetuates traditional gender roles. Nosek et al. (2007) found that 76% of participants taking the implicit association test of subconscious bias more quickly associated males with careers and females with family. Because gender stereotyping happens quickly, automatically, and frequently, stopping these biases requires bringing it to the person's focal (i.e., conscious) awareness.

Other suggestions are to provide a more formalized business structure and remind people that qualified individuals can lead entrepreneurial teams regardless of their gender. Yang and Aldrich (2014) found that the more formalized a business' performance review process is, the

more objective it is, and the greater the chances of a qualified female being the leader. Research also shows that even people who are predisposed to showing prejudice against well-qualified women will do so significantly less when they are reminded that they need to focus on job related qualifications in order to select an employee for a position and ignore irrelevant non-job-related factors (Umphress, Simmons, Boswell & Triana, 2008).

Limitations and Future Research

One limitation of the present study is that we do not measure the intervening variables to capture the reasons why we observe the present findings. Our results show that female-led ventures are significantly more likely to fail than male-led ventures controlling for the amount of time the leading entrepreneur and their cofounders spend on the business. Therefore, even if second shift arguments (Hochschild, 1989; Hochschild & Machung, 2012) are valid such that women have less time to devote to their businesses than men, results show that there is a significant and independent effect of gender on business failure. Why? A few possible intervening mechanisms influencing the results observed include: subconscious biases about women which can influence both the female entrepreneurs as well as others around them, low expectations about female entrepreneurs, undermining of female entrepreneurs, reduced effort on the part of employees of female entrepreneurs, or a lack of confidence on the part of the female entrepreneurs. It is interesting to note that there was no effect of gender on business failure in the analysis of solo entrepreneurs (Table 2, Model 2). Therefore, the issues are present when others are working with them. Women may experience threats to their leadership from within the team in the form of internal strife if people doubt the leader, as well as challenges from outside the team which may come from investors or customers if they lose faith in the business. Several mechanisms may contribute to the failure of women-led businesses, and future research can

uncover these mechanisms.

Another limitation is the generalizability of the sample. All participants are entrepreneurs and, therefore, may have different characteristics or be in different situations compared to leaders of larger, more established organizations. Role congruity theory would predict that our findings generalize to other settings due to the social status differences between men and women. Nonetheless, future research should determine to which settings our findings best generalize. It is important to know if our results generalize beyond the entrepreneurial setting to all team types.

We also do not know to what extent the eventual failure of a business is an acceptable outcome or even the goal of the entrepreneur. One possibility is that the family caregiver role is a hindrance to female entrepreneurs' ability to achieve business success. Another possibility is that female entrepreneurs may start the business to supplement family income when their children are small with the intention of obtaining a full-time job once the children are older and more independent. Research shows that women sometimes start businesses as a means of obtaining work-family balance (Loscocco & Bird, 2012). In fact, 37% of women in our data said they started a business for flexibility in personal and family life compared to 26% of men. Future research may examine the different motives women have for starting new businesses and whether women see the challenges of entrepreneurship as a problem, an opportunity, or both.

Conclusion

Findings from a nationally representative sample of new businesses show that male-led businesses are more likely to survive than female-led businesses. This is true when the male entrepreneur is surrounded by a team that is more competent than he is, in predominantly female industries, and in spousal teams. Overall, our findings suggest that the road can be rocky for female entrepreneurs.

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Table 1

Descriptive Statistics and Correlations

	Variables	M	SD	1		2		3		4		5		6		7		8	
1	Survival time of a business	29.3	26.19																
2	Gender of the leading entrepreneur [a]	0.67	0.47	0.04	*														
3	No. of merit-based criteria on which cofounders are more competent than the leader	2.38	1.63	0		0.23	***												
4	The leading entrepreneur has another full-time job	0.35	0.48	-0.01		0.13	***	-0.05	***										
5	Cofounders have other full-time job	0.69	0.77	-0.01		-0.1	***	-0.06	***	0.04	**								
6	Household income level	8.08	4.67	0.03	*	0.06	***	0.05	***	0.02		0							
7	No. of adults in the household	2.17	0.73	-0.03		0.1		-0.02		-0.05	***	0		0.01					
8	No. of children in the household	0.96	1.25	0.01		-0.07	***	-0.14	***	0.08	***	0.03	*	-0.07	***	0.1	***		
9	Made a business plan	0.72	0.45	0.22	***	-0.02	**	0.05	**	0	**	0.02		0.05	***	-0.03		-0.03	*
10	Signed an agreement	0.2	0.4	0.14	***	0.02	***	0.1	***	-0.07	***	0.08	***	0.12	***	-0.05	***	-0.02	
11	No. of owners	2.51	0.93	0.05	***	0.12	***	0.1	***	-0.08	**	0.37	***	0.03	*	0.03		0	
12	No. of non-owner founders	0.9	1.91	0.03	*	0.06		-0.02		0.05		-0.02		0.09	***	0.13	***	-0.02	
13	No. of people provide help	0.78	1.61	-0.02		0	***	-0.07	***	0		0.01		-0.01		0.04	***	0.02	
14	No. of employees	1.04	7.16	0.02		0.06		0.01		-0.09	***	-0.08	***	0.04	**	-0.03	*	-0.04	*
15	Hours spent on bus. by the leader	1720	4676	0.14	***	0.01		0.02		-0.03	*	-0.06	***	0.09	***	-0.05	***	0.08	***
16	Hours spent on bus. by cofounders	644	2021	0.07	***	-0.09	***	-0.07	***	-0.11	***	-0.07	***	-0.08	***	-0.05	***	0.07	***
17	Women-dominated industry	0.37	0.48	-0.07	***	-0.13	***	-0.07	****	-0.05	***	-0.02		-0.1	***	-0.03	*	0.01	
18	Avg. years of work experience in the industry of the startup	8.18	8.87	0.02		0.05	**	0.06	***	-0.09	***	0.00		0.06	***	-0.04	**	-0.09	***
19	Avg. education level	3.34	0.94	0.02		0.03	*	0.09	***	-0.02		0.14	***	0.25	***	-0.13	***	-0.10	***
20	Avg. years of work experience with pay	20.23	10.12	-0.01		-0.03	*	0.16	***	-0.13	***	0.01		0.14	***	-0.10	***	-0.29	***
21	Avg. No. of business started before	1.06	1.47	-0.01		0.11	***	0.18	***	-0.11	***	-0.06	***	0.09	***	-0.05	***	-0.13	***
22	Avg. No. of business owned before	0.43	0.80	0.01		0.15	***	0.10	***	-0.08	***	0.02		0.16	***	-0.07	***	-0.06	***
23	Avg. years of managerial experience	11.09	8.22	0.04	***	0.02		0.17	***	-0.12	***	-0.06	***	0.23	***	-0.11	***	-0.31	***

$N = 5047$, * $p < .05$. ** $p < .01$. *** $p < .001$. Two-tailed tests.

[a] 0 = female, 1 = male.

Table 1 (Continued)

Descriptive Statistics and Correlations

	Variables	8		9		10		11		12		13		14		15		16	
9	Made a business plan	-0.03	*																
10	Signed an agreement	-0.02		0.15	***														
11	No. of owners	0		0.04	***	0.23	***												
12	No. of non-owner founders	-0.02		0.06	***	-0.03		-0.02											
13	No. of people provide help	0.02		0.08	***	-0.04	*	0.02		0.16	***								
14	No. of employees	-0.04	*	0.04	**	0.07	***	0.2	***	0.09	***	0.08	***						
15	Hours spent on bus. by the leader	0.08	***	0.04	**	-0.01		0.06	***	-0.02		0.04	*	0.15	***				
16	Hours spent on bus. by cofounders	0.07	***	0.03		0.03	*	0.02		-0.01		0.06	***	0.15	***	0.58	***		
17	Women-dominated industry	0.01		0.02		0.03		-0.04	*	0.04	**	0.08	***	0.11	***	-0.07	***	-0.05	***
18	Avg. years of work experience in the industry of the startup	-0.09	***	0.08	***	0.02		0.00		0.02		-0.02		-0.10	*	0.04	*	0.10	***
19	Avg. education level	-0.10	***	0.10	***	0.11	***	0.12	***	0.07	***	-0.04	***	0.23	***	-0.06	***	0.01	
20	Avg. years of work experience with pay	-0.29	***	0.02		0.02		0.04	***	-0.04	***	-0.08	***	-0.33	***	-0.03	***	0.01	
21	Avg. No. of business started before	-0.13	***	0.06	***	0.10	***	0.11	***	0.05	***	-0.05	***	0.31	***	0.00	***	0.01	**
22	Avg. No. of business owned before	-0.06	***	0.06	***	0.12	***	0.13	***	0.07	***	-0.07	***	0.09	***	-0.04	***	-0.04	***
23	Avg. years of managerial experience	-0.31	***	0.05	***	0.08	***	0.07	***	0.02		-0.04	***	0.04		-0.01		0.00	

	Variables	17		18		19		20		21		22	
18	Avg. years of work experience in the industry of the startup	0.00											
19	Avg. education level	-0.01		0.06	***								
20	Avg. years of work experience with pay	-0.01		0.37	***	0.18	***						
21	Avg. No. of business started before	-0.02		0.10	***	0.18	***	0.27	***				
22	Avg. No. of business owned before	-0.03	*	0.02		0.19	***	0.13	***	0.65	***		
23	Avg. years of managerial experience	-0.02		0.36	***	0.27	***	0.66	***	0.37	***	0.27	***

$N = 5047$, * $p < .05$. ** $p < .01$. *** $p < .001$. Two-tailed tests.

[a] 0 = female, 1 = male.

Table 2
The Effect of the Leading Entrepreneur's Gender on the Failure Rate of New Businesses

DV (Termination = 1) Independent Variables	Model 1 All Ventures			Model 2 Solo Entrepreneurs			Model 3 Teams		
Gender of the leading entrepreneur (1 = Male)	-0.26	(0.11)	*	-0.17	(0.15)		-0.38	(0.17)	*
No. of merit-based criteria cofounders are more competent than the leader	0.08	(0.05)					0.10	(0.05)	*
Solo Entrepreneurs	-0.17	(0.42)					-0.25	(0.30)	
Spousal teams	-0.22	(0.28)					0.20	(0.27)	
Non-spousal Same-sex Teams	0.11	(0.26)							
Women-dominated industry	0.39	(0.11)	***	0.20	(0.14)		0.75	(0.16)	***
Cofounder has another full-time job	0.15	(0.11)		0.09	(0.15)		0.22	(0.16)	
The leading entrepreneur has another full-time job	0.28	(0.12)	*				0.29	(0.13)	*
Total No. of hours spent on new business by the leading entrepreneur	-0.26	(0.03)	***	-0.26	(0.04)	***	-0.27	(0.05)	***
Total No. of hours spent on new business by cofounders	0.00	(0.04)					0.01	(0.04)	
Household income level	-0.01	(0.01)		0.01	(0.02)		-0.03	(0.02)	
No. of adults in the household	0.09	(0.06)		0.01	(0.08)		0.23	(0.12)	*
No. of children in the household	-0.03	(0.05)		-0.01	(0.07)		0.01	(0.07)	
Make a business plan	-0.20	(0.11)		-0.08	(0.15)		-0.43	(0.18)	*
Sign an agreement	-0.86	(0.23)	***	0.14	(0.61)		-1.02	(0.25)	***
No. of employees	-0.01	(0.03)		-0.09	(0.11)		0.00	(0.02)	
No. of owners	-0.20	(0.12)					-0.25	(0.13)	*
No. of non-owner founders	-0.04	(0.02)	*	-0.05	(0.03)		-0.05	(0.05)	
No. of people provide help	0.03	(0.03)		0.03	(0.03)		0.03	(0.05)	
Avg. years of work experience in the industry of the startup	-0.04	(0.01)	***	-0.04	(0.01)	***	-0.04	(0.01)	***
Avg. education level	-0.05	(0.06)		-0.02	(0.07)		-0.09	(0.09)	
Avg. years of work experience with pay	0.01	(0.01)		0.00	(0.01)		0.02	(0.01)	*
Avg. No. of business started before	0.04	(0.05)		0.01	(0.06)		0.10	(0.07)	
Avg. No. of business owned before	-0.15	(0.10)		-0.11	(0.14)		-0.17	(0.13)	
Avg. years of managerial experience	0.00	(0.01)		0.00	(0.01)		-0.01	(0.01)	
N	10287			5240			5047		
Akaike Information Criterion	6352			3180			2601		

Note: * *p* < 0.05; ** *p* < 0.01; *** *p* < 0.001 (Two-tailed tests). Standard errors are in parentheses; Coefficients are logarithm of hazard ratio.
Team type (Reference group = Non-spousal Mixed-sex Teams)

Table 3
The Effect of the Leading Entrepreneur's Gender and Moderating Conditions on the Failure Rate of New Businesses

DV (Termination = 1) Independent Variables	Model 1 Merit			Model 2 Industry			Model 3 Team Type		
Gender of the leading entrepreneur (1 = Male)	-0.10	(0.30)		-0.35	(0.18)	*	-0.40	(0.17)	*
No. of merit-based criteria cofounders are more competent than the leader	0.16	(0.08)	*	0.06	(0.06)		0.06	(0.06)	
Spousal teams	0.19	(0.09)		-0.18	(0.28)		-0.16	(0.37)	
Non-spousal Same-sex Teams	0.13	(0.27)		0.12	(0.26)		0.29	(0.43)	
Women-dominated industry	0.74	(0.16)	***	1.42	(0.27)	***	0.75	(0.16)	***
Gender × No. criteria cofounders more competent than leader	-0.14	(0.07)	*						
Gender × Spousal teams							-0.47	(0.22)	*
Gender × Non-spousal Same-sex Teams							-0.25	(0.51)	
Gender × Women-dominated industry				-1.05	(0.33)	***			
Cofounder has another full-time job	0.18	(0.12)		0.18	(0.12)		0.18	(0.12)	
Leading entrepreneur has another full-time job	0.19	(0.16)		0.27	(0.16)		0.19	(0.16)	
Total No. of hours spent on new business by the leader	-0.24	(0.04)	***	-0.25	(0.05)	***	-0.22	(0.05)	***
Total No. of hours spent on new business by cofounders	-0.02	(0.04)		-0.01	(0.04)		-0.02	(0.04)	
Household income	-0.03	(0.02)		-0.04	(0.02)	*	-0.03	(0.02)	
No. of adults in the household	0.24	(0.11)	*	0.24	(0.11)	*	0.22	(0.11)	*
No. of children in the household	-0.01	(0.06)		-0.01	(0.06)		-0.01	(0.06)	
Make a business plan	-0.59	(0.18)	***	-0.58	(0.18)	***	-0.61	(0.18)	***
Sign an agreement	-0.97	(0.25)	***	-0.88	(0.25)	***	-0.94	(0.25)	***
No. of employees	-0.01	(0.02)		0.00	(0.02)		-0.01	(0.02)	
No. of owners	-0.11	(0.12)		-0.11	(0.12)		-0.14	(0.12)	
No. of non-owner founders	-0.07	(0.05)		-0.07	(0.05)		-0.06	(0.05)	
No. of people provide help	0.03	(0.05)		0.04	(0.05)		0.02	(0.05)	
Avg. years of work experience in the industry of the startup	-0.03	(0.01)	***	-0.04	(0.01)	***	-0.04	(0.01)	***
Avg. education level	-0.08	(0.09)		-0.07	(0.09)		-0.08	(0.09)	
Avg. years of work experience with pay	0.02	(0.01)	*	0.02	(0.01)	*	0.02	(0.01)	*
Avg. No. of business started before	0.10	(0.07)		0.09	(0.07)		0.10	(0.07)	
Avg. No. of business owned before	-0.17	(0.13)		-0.16	(0.13)		-0.15	(0.13)	
Avg. years of managerial experience	-0.01	(0.01)		-0.01	(0.01)		-0.01	(0.01)	
N	5047			5047			5047		
Akaike Information Criterion	2512			2553			2545		

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (Two-tailed tests). Standard errors are in parentheses; Coefficients are logarithm of hazard ratio.
Team type (Reference group = Non-spousal Mixed-sex Teams).

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Figure 1

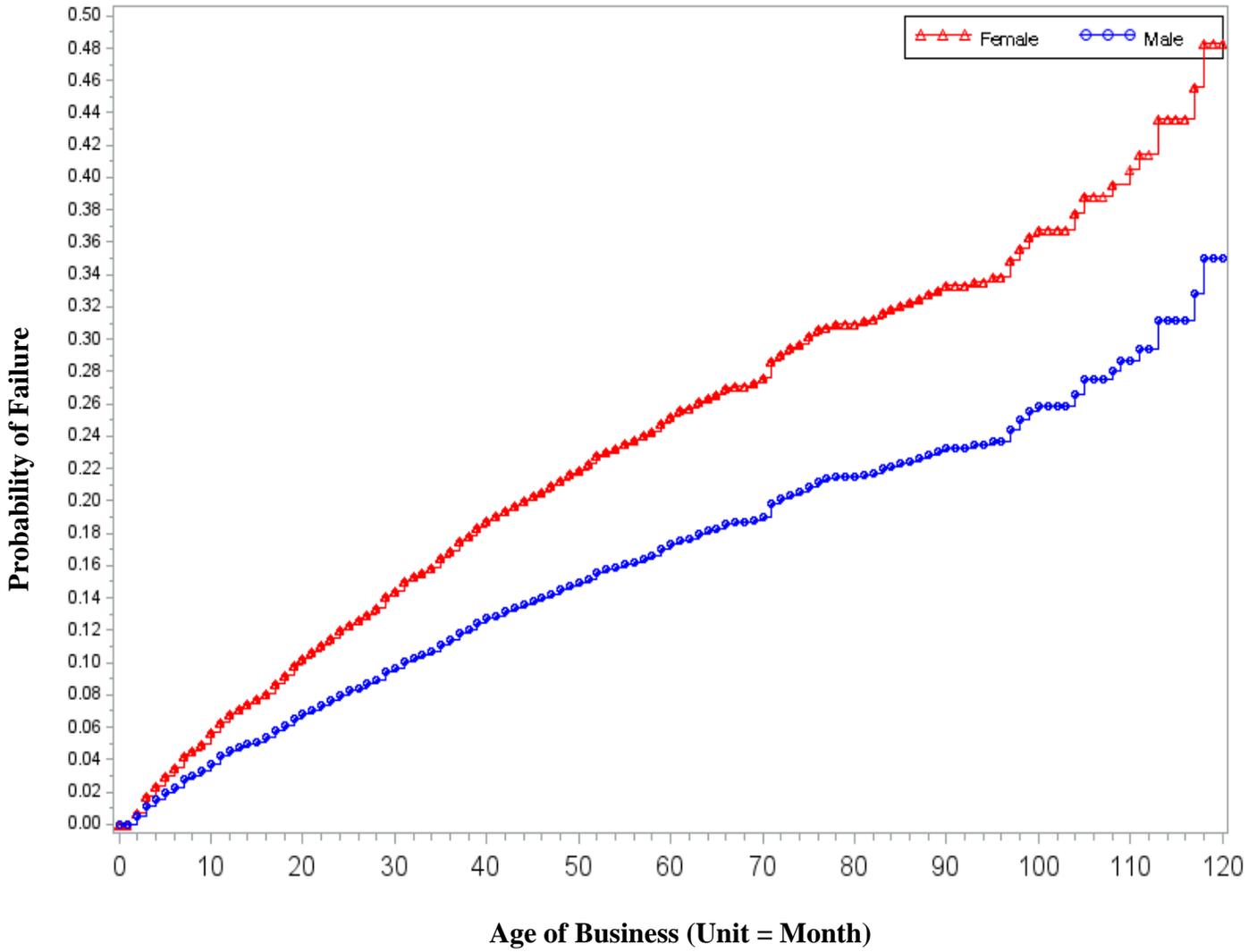**The Probability of Failure for Women-led and Men-led New Businesses**

Figure 2

Two-way Interaction of the Gender of the Leading Entrepreneur and Meritocracy

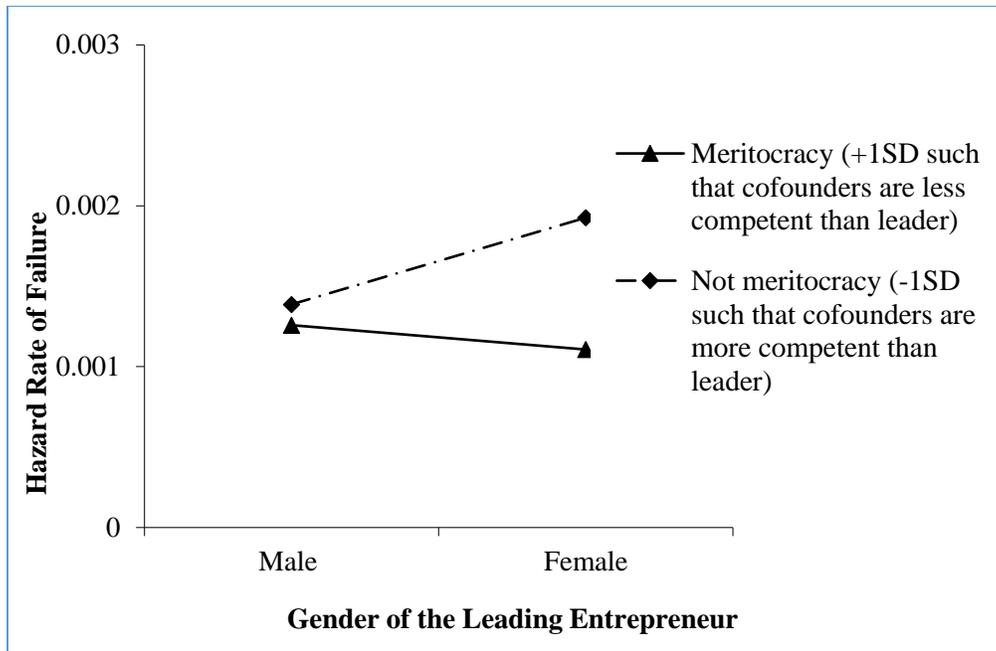**Predicting a New Business's Hazard Rate of Railure**

Figure 3

Two-way Interaction of the Gender of the Leading Entrepreneur and Industry Type

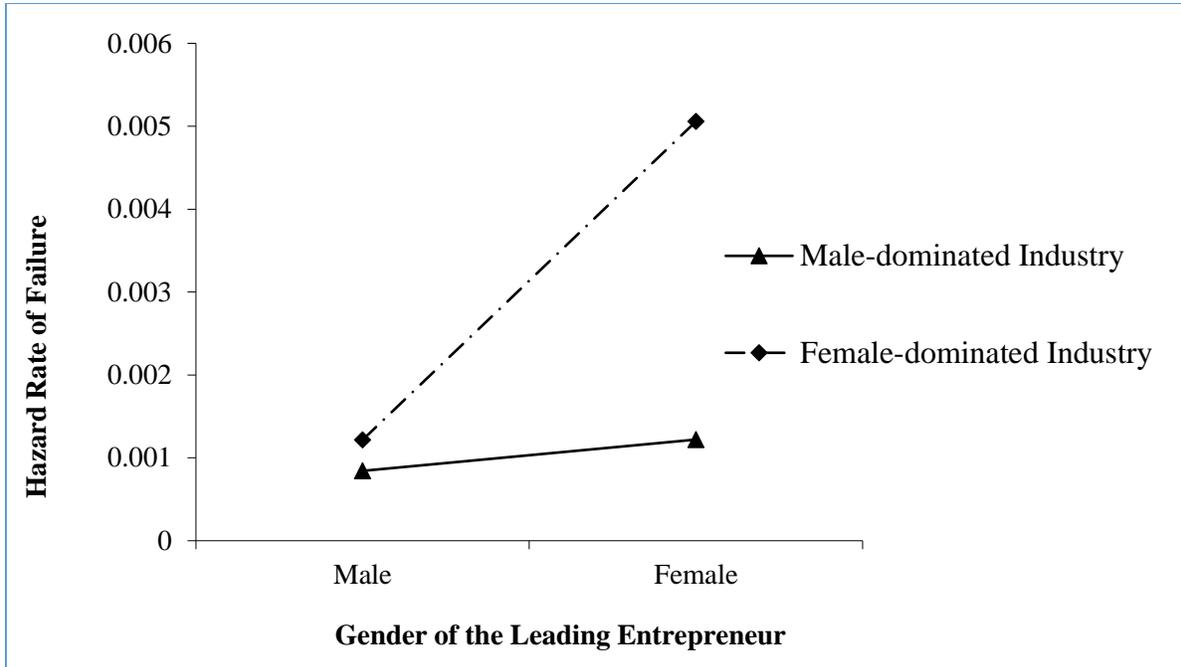**Predicting a New Business's Hazard Rate of Failure**

Figure 4

Two-way Interaction of the Gender of the Leading Entrepreneur and Spousal Team

Predicting a New Business's Hazard Rate of Failure