**Moving Beyond the Barriers: Examining the Impact of Self-efficacy and Stereotype Reactance on Women’s Entrepreneurial Intentions**

**Abstract**

Negative gender stereotype has been recognized as one of the problems women entrepreneurs face when starting and growing a business. This research explains how women entrepreneurs overcome the negative gender stereotypes through the implications of stereotype reactance/protection theory (Kray, Thompson, & Galinsky, 2001; Javadian & Zoogah, 2014) and entrepreneurial self-efficacy. The results indicate that women with high levels of entrepreneurial self-efficacy do not experience stereotype threat and do not have lower venture creation intentions than men. Also, stereotype reactance among women entrepreneurs is found to positively impact their venture growth intentions. In addition, women with high levels of entrepreneurial self-efficacy have stronger venture growth intentions as stereotype reactance increased.

*Keywords: stereotype reactance, gender, entrepreneurial self-efficacy, entrepreneurial intentions*

**Moving Beyond the Barriers: Examining the Impact of Self-efficacy and Stereotype Reactance on Women’s Entrepreneurial Intentions**

Entrepreneurial intention, which has a significant impact on individuals’ decisions to start and grow ventures, is central to entrepreneurship research because it contributes to understanding of the complex process of entrepreneurship (Baron, 2004). Intentions are defined as the state of mind that focuses an individual’s attention and behavior on a specific object or behavioral strategy (Bird, 1988). Intentions result from beliefs and attitudes and lead to behavioral outcomes (Ajzen, 2001; Bird, 1988; Fishbein & Ajzen, 1975).

Research has shown that women generally have lower levels of entrepreneurial intentions than men (Jenning & Brush, 2013). Such differences have been attributed to specific problems faced by women entrepreneurs. In fact, to date, much of women entrepreneurship has been focused on problems and challenges faced by women entrepreneurs, the causes and roots of such problems, and on offering explanations for these problems (Jennings & Brush, 2013; James, 2012). Among the identified challenges are the gender stereotypes.

Gender stereotypes are the shared beliefs about the attitudes and characteristics associated with each sex (Powel & Graves, 2003). Such characteristics describe how men and women are, as well as how they should be (Schein, 2001; Heilman, Wallen, Fuchs, & Tamkins, 2004). Negative gender stereotypes, which are predominant in many societies (Heilman & Okimoto, 2007), influence cognitions, attitudes and behaviors (Devine, 1989; Wegener, Lark, & Petty, 2006). Once negative stereotypes have been established, they can influence individuals without any need of a reminder (Devine, 1989). Negative gender stereotypes, specifically, have a crucial impact on women’s behavior in many achievement-related domains, including entrepreneurship (Gupta et al., 2008; Nosek, Banaji, & Greenwald, 2002).

In entrepreneurial contexts, negative gender stereotypes have been shown to have a detrimental impact on women’s entrepreneurial intentions (Gupta et al., 2008). Such stereotypes impact women’s perceptions of their own entrepreneurial capabilities. Women who perceive themselves as similar to males have higher entrepreneurial intentions than those who see themselves as similar to females (Gupta, Turban, Wasti, & Sikdar, 2009). Similarly, negative gender stereotypes affect women’s evaluations of business opportunities and their assessment of business ideas (Gupta, Turban, & Pareek, 2013; Gupta, Goktan, & Gunay, 2014; Gupta & Turban, 2012). Women have lower levels of opportunity evaluation and evaluate masculine business ideas more favorably in the presence of masculine stereotypical information (Gupta et al., 2013; Gupta & Turban, 2012).

While much of the literature suggests that entrepreneurship is a masculine activity that usually occurs in a gender stereotypic context (Ahl, 2006; Baron, 1999; Baron, Markman, & Hirsa, 2001; De Bruin, Brush, & Welter, 2006; Fagenson & Marcus, 1991); yet, women continue to start and run businesses in increasing numbers. According to 2014 State of Women owned Business Report by American Express Open, the number of women owned businesses has grown 68% over the past 17 years with 11% increase in employment and 72% increase in revenues. Based on the current research on women entrepreneurship, we do not know how women confront the gender stereotypical context, and how they build and run ventures in increasing numbers despite the challenges caused by such context.

This research aims to explain how women entrepreneurs overcome the negative gender stereotypes through the implications of stereotype reactance/protection theory (Kray, Thompson, & Galinsky, 2001; Javadian & Zoogah, 2014) and entrepreneurial self-efficacy. Specifically, we examine how women entrepreneurs confront negative gender stereotypes and form venture creation and venture growth intentions in such masculine context. Taking such approach, this research addresses James’ (2012) call for more focus on women’s entrepreneurial successes rather than on their problems. This approach not only seeks to remedy the gap in the literature on this topic, but also strives to move beyond the problems women entrepreneurs face in order to focus on the *solutions* to those problems. Negative gender stereotypes in entrepreneurship are an indisputable problem for women; as a result, it is essential to discover precisely how women form the intentions to start and grow their businesses despite these stereotypes. In addition, A thorough analysis of the process women go through to form the intentions to build and grow businesses in a gender stereotypic context can lead to a better understanding of these processes and can be beneficial in promoting women’s entrepreneurship.

**Theoretical Background and Hypothesis Development**

Associations with different social groups impact individuals’ social identities (Ellemers, Spears, & Doosje, 2002). Based on their attachment to different social groups, individuals have different forms of social identities that prescribe their behaviors (Benjamin, Choi, & Strickland, 2007). Individuals’ social identification also depends on their perception of the group, and is impacted by the distinctiveness and prestige of the group (Ashforth, & Mael, 1989). Social identity leads to differential perceptions of self and others, depending on which identity is most salient (Crisp & Hewstone, 2001, Haslam & Turner, 1992). Although some kinds of group membership are viewed as identity enhancing, others may be viewed as identity jeopardizing, based on how that specific group is evaluated within the relevant social context (Ellemers et al., 2002).

Gender is one of the social groups to which individuals belong. It is perhaps the strongest basis for the categorization of people worldwide, and surpasses other demographic characteristics such as race and age by far (Randel, 2002). Women are affiliated with certain negative gender stereotypes. Negative gender stereotypes are the widely held beliefs about women’s inferior abilities, behaviors and attributes (Chalabaev, Stone, Sarrazin, & Croizet, 2008). Negative stereotypes about a group’s ability can lead to social inequalities in achievement (Chalabaev, Stone, Sarrazin, & Croizet, 2008). The impact of negative stereotypes on achievement has been examined using stereotype threat theory.

Stereotype threat is defined as being in a position to validate negative stereotypes about one’s group. Steele and Aronson (1995) introduced the definition of stereotype threat as “being at risk of confirming a negative stereotype about one’s group” (p. 797). Stereotype threat is considered a self-threat, which may interrupt or impede an individual’s performance. Steele (1997) argues that stereotype threat is a social-psychological threat that is activated when the subject is put in the stereotype-relevant domain (a threat in the air). As Smith (2004) argues, stereotype threat is the dilemma created when an individual who identifies with the specific domain knows that the negative stereotype about his or her group is the potential explanation for poor performance.

Although studies have shown that people often conform to negative stereotypes, there is evidence to suggest that in some instances, individuals actually react against the stereotypes and respond positively instead (Hoyt, 2005; Kray et al., 2001). Based on Brehm’s (1966) theory of psychological reactance, individuals respond to a perceived threat to their freedom by reasserting their freedom. Therefore, they may respond to the stereotyped expectation of inferiority by engaging in counter-stereotypical behaviors (Hoyt et al., 2010).

Engaging in counter-stereotypical behavior when individuals are confronted with negative stereotypes that disparage the performance of the stereotyped group is termed stereotype reactance (Kray et al., 2001). Stereotype reactance is the positive cognitive response to negative stereotypes and stereotype protection is the behavioral response resulting from cognitive response (Javadian & Zoogah, 2014). Stereotype protection is defined as “disconfirming a negative stereotype about one’s group, which assists the individual in maintaining his/her performance” (Javadian & Zoogah, 2014; p.413).

Stereotype reactance has been shown to positively impact the performance of those individuals who have engaged in counter-stereotypical behaviors. Kray et al., (2004) found that when women are bluntly presented with gender and bargaining stereotypes, they outperform men at the bargaining table. Hoyt (2005) found that female leaders exhibit positive reactance responses when they are confronted with explicit negative female leadership stereotypes. Similarly Oyserman, Harrison, and Bybee (2001) found that when African-Americans are aware of racism, connectedness and African-American achievements, they counter the negative stereotypes about math performance and demonstrate an improvement in their math performance instead. In such cases, the stereotyped group apparently copes with the negative stereotypes by eliciting an “I’ll show you” reactance response, which motivates these individuals to prove that the stereotypes are wrong (Hoyt et al., 2010).

Previous research has shown that when the target has sufficient self-efficacy to react against the stereotype, he or she responds to stereotypes with reactance as opposed to the more common vulnerability response (Hoyt & Blasovich, 2007; Kray et al., 2001, 2004). The cited studies had shown that when stereotype group have higher levels of self-efficacy are more likely to respond to negative gender stereotypes with reactance rather than vulnerability.

## Stereotype reactance and venture creation intentions

When the stereotype reactance theory is applied to the entrepreneurial context, it is expected that the woman who forms the intentions to start a business is in fact acting in counter-stereotypical ways. She is responding to the negative gender stereotypes with reactance by engaging in entrepreneurial activities. In other words, forming the intentions to start a business is contrary to the stereotyped expectations of disqualification. A woman who is interested in ;.starting a business is protecting herself from perceived stereotype threat by engaging in counter-stereotypical behavior. However, the question is what leads women to respond to negative gender stereotypes with reactance and not vulnerability.

Consistent with stereotype reactance research, we argue that entrepreneurial self-efficacy results in stereotype reactance response from women. In other words, when negative gender stereotype are present, entrepreneurial self-efficacy protects women’s entrepreneurial intentions from dropping. In general, individuals with higher levels of entrepreneurial self-efficacy have a higher chance of becoming entrepreneurs and running ventures (Markman, Balkin, & Baron, 2002). Those who believe that they have the capability to start and grow a new business are more likely to pursue such a course of action (Arora et al., 2011).

Accordingly, the beliefs that she has the ability to start business help the woman entrepreneur ignore the implication of negative gender stereotypes. In other words, a woman who perceives her entrepreneurial skills to be sufficient to start a business is more likely to have equal levels of venture creation intentions as a man when negative gender stereotypes are activated. On the other hand, a woman who perceives her entrepreneurial skills not to be sufficient to start a business is expected to be more vulnerable to the effects of negative gender stereotypes and thus have lower levels of venture creation as men.

Thus, when entrepreneurial self-efficacy of individuals is high, women tend to have equal levels of venture creation intentions compared to men when negative gender stereotypes are present. However, when entrepreneurial self-efficacy levels are low, consistent with previous studies, women have lower levels of venture creation intentions compared to men when negative gender stereotypes are present. In other words, women with high levels of entrepreneurial self-efficacy experience stereotype protection and those with lower levels of entrepreneurial self-efficacy experience stereotype threat. Thus, the following hypotheses are offered:

*H1: In low entrepreneurial self-efficacy condition, women have lower levels of venture creation intentions compared to men when negative gender stereotypes are present.*

*H2: In high entrepreneurial self-efficacy condition, women have equal levels of venture creation intentions compared to men when negative gender stereotypes are present.*

## Stereotype reactance and venture growth intentions

Certain negative gender stereotypes exist about women’s ability to grow a business. Venture growth is typically used as a criterion for evaluating organizational success (Venkatraman & Ramanujam, 1986). The performance of an entrepreneurial venture is evaluated through the growth of the business (Cooper, 1993). Since women-owned businesses tend to stay small in terms of assets, numbers of employees, and profits, women entrepreneurs are seen as inferior entrepreneurs compared to men entrepreneurs (Fischer, Reuber, & Dyke, 1993; Kalleberg & Leicht, 1991). This results in women being stereotyped as not very successful entrepreneurs. Research has shown that this stereotypical view explains why women entrepreneurs face discrimination in terms of acquiring the necessary resources to grow their business (Carter & Rosa, 1998; Coleman & Robb, 2012).

However, women do not always conform to the negative stereotypical expectations of them in regards to growing a business. Based on the stereotype protection theory (Javadian & Zoogah, 2014), stereotype reactance has positive implication for the stereotyped group by improving their behavior. Accordingly, if women entrepreneurs respond to negative gender stereotypes with reactance rather than vulnerability, it is expected that their venture growth intentions improves rather than declines. By reacting to negative gender stereotypes, women entrepreneurs engage in counter- stereotypical behavior, which will protect their growth intentions from the negatives effects of gender stereotypes. Thus, we suggest:

*H3: Stereotype reactance positively impacts venture growth intentions.*

The impact of stereotype reactance on venture growth intentions is dependent on women’s entrepreneurial self-efficacy. Entrepreneurial self-efficacy is crucial to growth intentions for two reasons. First, entrepreneurial self-efficacy is known to impact entrepreneurial behavior and actions (Boyd & Vozikis, 1994). As Bandura (1991) explains if a certain behavior is perceived to be beyond the ability of a person, he or she will not act. Given the link between entrepreneurial intentions and actions, Boyd and Vozikis (1994) argue that entrepreneurial self-efficacy influences entrepreneurial behavior through its impact on entrepreneurial intentions. Second, entrepreneurial self-efficacy is important to performance of new ventures. Research has shown that entrepreneurial self-efficacy increases risk taking (Krueger & Dickson, 1994) which is important to venture performance and growth (Bromiley, 1991). Entrepreneurial self-efficacy also influences venture performance positively through its effect on entrepreneurial orientation (Poon, Ainuddin, & Junit, 2006). Accordingly, entrepreneurial self-efficacy influences the actual growth of the venture by influencing entrepreneur’s intention to grow the venture.

We argue that women who have high levels of entrepreneurial self-efficacy are more likely to have improved venture growth intentions as result of stereotype reactance. In other words, entrepreneurial self-efficacy is argued to moderate the relationship between stereotype reactance and growth intentions. Women with high levels of entrepreneurial self-efficacy are more likely to have increased ventured growth intentions as a result of stereotype reactance. These women have the ability to not only react to stereotypes, but they also perceive their ability to grow their business to be sufficient. Accordingly, as stereotype reactance increases we expect women with high levels of self-efficacy to have higher levels of growth intentions compared to those who have low levels of self-efficacy since they believe they do have the ability to grow their venture. In fact those who believe they do not have the sufficient skills and abilities to grow their venture are less likely to form growth intentions despite their ability to react to stereotypes. Thus we offer the following hypothesis:

*H4: entrepreneurial self-efficacy moderates the relationship between stereotype reactance and growth intentions such that women with high levels of entrepreneurial self-efficacy have higher levels of growth intentions as their stereotype reactance increases compared to those who have low levels of self-efficacy.*

**Methodology**

Two separate studies were conducted to examine the hypotheses of this research. The purpose of the first study was to understand the effects of negative stereotype activation on venture creation intentions when entrepreneurial self-efficacy levels are high versus low. The second study aimed to examine the effects of reactance to negative stereotypes on venture growth intentions and the moderating role of entrepreneurial self-efficacy. In other words, the first study examines the process of stereotype protection in regards to venture creation intentions and the second study examines the process of stereotype protection in regards to venture growth intentions.

The first study used a sample of students drawn from two business schools. Three scenarios were developed and the study had a quasi-experimental design. The three scenarios each correspond to one of the gender stereotypes conditions: positive, negative and neutral. The scenarios related to gender stereotypes that are specific to venture creation. Both male and female students were asked to read a scenario and answer questions related to entrepreneurial self-efficacy and venture creation intentions. The second study used a sample of women entrepreneurs. The entrepreneurs were asked about their reactance to negative stereotypes and their venture growth intentions. Below are the details of each study and their results.

## Study 1

### Participants

Data was collected from undergraduate business and engineering students at two Northeastern universities. A total of 345 students were approached in class in one school and through email in the other. 310 students completed the survey (response rate: 89%) who responded to the two follow up questions correctly. Since the focus of study one was on potential entrepreneurs, surveys from respondents who already owned businesses were eliminated. This left 267 respondents out of which 149 were female and 118 were male. The sample was predominantly Black or African American (67.2%) with average fulltime work experience of 3 years. The majority of the students were in their senior year (60.2%), 9.2% were engineering students and the rest were from business school.

### Procedure

Participants were randomly assigned to three conditions where they were asked to read a short (fictitious) news article about entrepreneurship. The three stereotype activation conditions included: negative gender stereotypes, positive gender stereotypes and nullified stereotype. Using a news article to manipulate stereotypes had been used in previous research (Gupta et al., 2008; 2009; Smith & White, 2002) and the news article was adapted from previous research (Gupta et al., 2008).

In the negative condition, entrepreneurs were identified as having masculine characteristics such as aggressiveness, risk taking and independence. In the positive condition, entrepreneurs were identified as having feminine characteristics such as passion, affection and social adoptability. In the nullified condition entrepreneurs were identified as having neutral characteristics such as creative, steady and generous. After reading the article, to ensure the participants had read the article carefully, they were asked 2 questions on the content of the article. A total of 119 students responded to negative gender stereotype condition, 86 responded to positive gender stereotype condition and 62 responded to nullified condition.

These numbers are different since the surveys were distributed randomly. Following the two questions, the participants responded to a set of questions related to venture creation intentions and entrepreneurial self-efficacy.

### Measures

*Venture creation intentions:* Six items developed by Zhao, Seibert, and Hills (2005) were used to measure venture creation intentions. This measure was used in other studies such as in Gupta et al. (2008), Gupta et al. (2009), Gupta and Bhawe (2007). Sample items included “I am ready to do anything to be an entrepreneur” and “I am determined to create a firm in the future.” The respondents rated on a 5-point Likert scale (1=strongly disagree, 5=strongly agree) the extent to which they were interested in starting a business. The internal consistency of the scale was .934.

*Entrepreneurial self-efficacy:* Six items developed by De Noble, Jung, and Ehrlich (1999)was used to measure entrepreneurial self-efficacy. This measure was used in several other studies such as in Hmieleski and Corbett (2008) and Hmieleski and Baron (2008). Sample items included “I can originate new ideas and products” and “I can recruit and train key employees.” The respondents rated on a 5-point Likert scale (1=strongly disagree, 5=strongly agree) the extent to which they were confident in the performing the tasks mentioned in the items. The internal consistency of the scale was .811. The variable was then turned into a dichotomous variable using the median of the scale (3.95). Participants whose response was below the medium were categorized as individuals with low levels of entrepreneurial self-efficacy (coded as zero) and those with responses above the median were categorized as individuals with high levels of entrepreneurial self-efficacy (coded as 1).

### Analysis and results

Before getting to the analysis, it is important to note that some of the hypotheses related to study one are null hypotheses. Given the theoretical support this research offered for the equality of venture creation intentions (stereotype protection), testing the null hypotheses is reasonable. Testing the null hypotheses is well established in psychology research (Grant, 1962). Null hypotheses have also been tested in management research published in management top tier journals (e.g. Hambrick, Cho, & Chen, 1996; Hubbard, Vetter, & Little, 1998; Lawless & Anderson, 1996; Wiersmea, 1992). In testing the null hypotheses, we followed previous research recommendations to improve the statistical power of the analysis. First, we established a beta level of .05 (Cohen, 1977), second, we reported the confidence intervals (Nickerson, 2000); and finally we reported power for every standard statistical test (Cashen & Geiger, 2004). In addition, equivalency test was conducted to assess the probability of the null hypothesis being true when comparing groups. Equivalency testing is a statistical procedure “used to determine whether two groups are sufficiently near to each other to be considered equivalent” (Rogers, Howard, & Vessey, 1993, p. 553).

To test hypotheses 1 and 2, data was split to high and low self-efficacy conditions. Then a 2 (gender) by 3 (stereotype condition) factorial analysis of variance (ANOVA) was conducted. Table 1 shows the means, standard deviation and 95% confidence intervals for venture creation intention and sample sizes for different conditions as they relate to high and low entrepreneurial self-efficacy conditions. In addition to comparing the mean differences, we examined whether means differed significantly across self-efficacy levels within each condition. We also examined whether the nullified condition means were statistically equivalent to the means in other two conditions within each gender group.

The purpose of this analysis was to examine whether the effects of negative gender stereotype on venture creation intentions varied when entrepreneurial self-efficacy of men and women were high versus low. When negative gender stereotypes were activated men with low entrepreneurial self-efficacy reported higher venture creation intentions (*M* = 3.56) than women with low entrepreneurial self-efficacy (*M* = 2.87). The mean difference (LSD) was .75 and significant (*p* <.01). Accordingly, women with low levels of entrepreneurial self-efficacy reported lower levels of venture creation intentions than men when the negative gender stereotypes are present. Thus, hypothesis 1 is supported.

When negative gender stereotypes were activated men with high levels of entrepreneurial self-efficacy reported higher levels of venture creation intentions (*M* = 3.86) compared to women with high entrepreneurial self-efficacy (*M* = 3.55). The mean difference (LSD) was .32 but not significant. To explore the reasons behind this non-significant finding, I examined whether the sample size of the study differs from what the statistical power testing recommends. The statistical power analysis for the effect size of .15 and the power (1- β) of .75 indicate that the total sample size for each of the conditions needs to be 29. The sample sizes considered here are 34 for men and 36 for women. Accorrdignly, the non-significance is not the result of low statistical power. However, finding a non-significance result cannot establish that the null hypothesis is true. In addition, equivalency testing needs to be conducted to assess the equivalency between two groups. Two groups are considered to be equivalent if the mean difference between two groups is so small that one population mean is equivalent to a second population mean (Gupta et al., 2008). It has to be noted that since access to the population was not possible in this case, the whole sample was considered as the population and the specific conditions under study was considered as the sample. In order to conduct equivalency test, two one-sided z tests was conducted. If the lower z value was greater than 1.65, the groups were considered equivalent (Rogers, Howard, & Vessey, 1993).

Results of the analysis indicated no equivalency between men and women’s venture creation intentions (z < 1.65, p > .05) with high levels of entrepreneurial self-efficacy. Accordingly, while no significant difference was found between men and women’s venture creation intentions when entrepreneurial self-efficacy was high, the two groups were not found to be equivalent, thus, hypothesis 2 was not supported. While women’s venture creation intentions was not found to be equal to men when entrepreneurial self-efficacy is high, unlike low entrepreneurial self-efficacy condition, men were not found to have significant higher intentions than women.

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*Insert Table 1 Here*

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## Study 2

The second study examined the interaction effects of stereotype reactance and entrepreneurial self-efficacy on venture growth intentions.

### Sample and procedure

Email was sent to 914 women entrepreneurs across the United States. The entrepreneurs were randomly assigned to two different surveys, one measuring reactance to negative stereotypes and relative deprivation and another measuring vulnerability to positive gender stereotypes and relative gratification. The entrepreneurs were also asked to answer questions related to venture growth intentions. A total of 150 women entrepreneurs responded to the survey (16% response rate) and 105 of them completed the survey. Data was screened for outliers, normality, linearity, homoscedasticity, and independence using IBM SPSS. Eventually, 92 responses were suitable for analysis. The majority of the respondents were white (88%) with average age of 54 years. 39% of the sample had graduate degrees, 13% took some graduate courses, 30% had bachelor degrees, 7% had associate degrees, 12% took some college courses and 2% had high school diplomas. The businesses were located in different states with the majority of the businesses (17%) located in California. The average business age was 14 years and the majority of businesses were in professional, scientific or technical services fields (26%).

### Measures

*Stereotypes Reactance*: 4 items were adopted from Spencer (1993) to measure women entrepreneur’s vulnerability to negative gender stereotypes. The items were reversely coded to reflect stereotype reactance. The scale had been used in other studies such as in von Hippel, Kalkoerinos and Henry (2013) and von Hippel et al. (2011). Sample items included “Some people feel that I am less willing to take business risks because I am a woman" and “Some people feel that my business can never become as big as a man’s business because I prioritize maintaining relationships over focusing on business matters.” The participants were asked to indicate their level of agreement with each item. Respondents rated on a 5-point Likert scale (1= strongly disagree, 5= strongly agree) the extent to which they agreed with the negative gender stereotypes related to women entrepreneurs. The internal consistency estimate for the scale was .870.

*Behavioral Growth Intentions:* To measure the behavioral intention to grow a business, a scale with 3 items were adopted from Guimond and Damburn (2002). The respondents were asked to indicate their willingness to carry out actions related to venture growth. Sample items included “Analyzing the market to identify growth opportunities” and “Attracting and hiring qualified employees to expand my business.” Respondents rated on a 5-point Likert scale (1= not interested at all, 5= very much interested) to the extent to which they were willing to take the stated actions. The internal consistency estimate for the scale was .761.

*Entrepreneurial self-efficacy:* Six items developed by De Noble, Jung, and Ehrlich (1999)was used to measure entrepreneurial self-efficacy. This measure was used in several other studies such as in Hmieleski and Corbett (2008) and Hmieleski and Baron (2008). Sample items included “I can originate new ideas and products” and “I can recruit and train key employees.” The respondents rated on a 5-point Likert scale (1=strongly disagree, 5=strongly agree) the extent to which they were confident in the performing the tasks mentioned in the items. The internal consistency of the scale was .811.

### Data analysis

Correlations and descriptive statistics for each variable in the model are provided in table 2. Since there were no very high correlations (e.g., >.7) among the predictor variables, multicollinearity was not an issue.

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*Insert table 2 about here*

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To test the relationships proposed in hypotheses 3 and 4, we used Hay’s Process plug in SPSS. The overall model for the interaction effect of stereotype reactance and entrepreneurial self-efficacy on growth intentions is significant (*F* (3,89)= 4.92, *p*<.01, R2=.14). The independent variable stereotype reactance has a significant positive relationship with growth intentions (*b*= 1.37, *t* (92) =2.74, *p*= .007). Thus hypothesis 3 is supported. The moderator, entrepreneurial self-efficacy has a significant positive relationship with growth intentions (*b*= 1.30, *t* (92) = 3.41, *p*= .001). The interaction of stereotype reactance and entrepreneurial self-efficacy was also found to be significant (*b*=-.31, *t* (92) = -2.61, *p*= .01). After plotting the interaction effect (see figure 1), we found that as stereotype reactance increases, individuals with high levels of self-efficacy have higher levels of growth intentions compared to those who had low self-efficacy. Accordingly, H4 is supported.

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*Insert figure 1 about here*

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**Discussion**

The literature on women’s entrepreneurship has mostly focused on problems and challenges, the causes and roots of such problems, and on offering explanations for these problems (James, 2012). This research attempted to show how women surmount the challenges they face, and how they form intentions to build and grow ventures despite such challenges.

We found that when entrepreneurial self-efficacy is low, women experience stereotype threat and have lower venture creation intentions than men. When entrepreneurial self-efficacy was high, the stereotype threat was not evident. While women and men with high levels of entrepreneurial self-efficacy were not found to have equal venture creation intentions, no difference in their entrepreneurial intention was found. Accordingly, it can be argued that entrepreneurial self-efficacy cleared the threat in the air caused by negative gender serotypes and stereotype threat is only evident when entrepreneurial self-efficacy is low.

This research also attempted to respond to recent calls to extend the stereotype research to organizational settings. Our research was not limited to the laboratory setting and examined the effects of stereotype reactance in an entrepreneurial setting. Our analysis suggests a positive relationship between stereotype reactance and venture growth intentions. Also, as stereotype reactance increased, women with high entrepreneurial self-efficacy had higher levels of venture growth intentions compared to those with low entrepreneurial self-efficacy. Accordingly, stereotype reactance is more effective when accompanied by entrepreneurial self-efficacy.

Consequently, the question raised in this research in regards to increasing number of women business owned firms and their size, despite the existence of negative gender stereotypes, is answered through entrepreneurial self-efficacy. Women’s entrepreneurial self-efficacy is helping them overcome the challenges related to stereotypical context of entrepreneurship.

This research is beneficial in practical terms since it offers an understanding of optimum functioning of women entrepreneurs. Showing that women entrepreneurs can actually overcome challenges in terms of starting and growing ventures can encourage other women to join the context. In addition, while entrepreneurial self-efficacy have been shown as important to individuals’ entrepreneurial activities, the results of this study highlight the specific importance of entrepreneurial self-efficacy for women entrepreneurs. Policy makers and specially educators can play a crucial role in helping women improve entrepreneurial self-efficacy. Entrepreneurial education has been shown to be specifically important in this regard. Unfortunately, most of the entrepreneurship textbooks are fraught with the masculine models, which are mainly concerned with masculine characteristics of entrepreneurship. Moreover, majority of entrepreneurs examples mentioned in the textbooks are men (e.g. Steve Jobs, Mark Zuckerburg). Female entrepreneurs such as Mary Ash and Coco Chanel are rarely pointed out in entrepreneurship textbooks. We need to emphasize and highlight the feminine side of entrepreneurship and use more female examples in the textbooks. Taking such approach will not only help women overcome negative gender stereotypes but will also help them realize their own advantages in starting and growing a business. This would hopefully contribute to the increasing numbers of women owned firms and their growth.

## Limitations and future study suggestions

It should be noted that there is a fine line between high entrepreneurial self-efficacy and overconfidence. The effects observed in this research as the result of high entrepreneurial self-efficacy might in fact be the result of overconfidence. Overconfidence, which is the individuals’ tendency to exaggerate the extent of what they know is true, has negative implications for performance (Fischoff, Slovic, & Lichtenstein, 1977). In the entrepreneurship context, it has been argued that overconfidence causes the entrepreneurs to misunderstand the potential for their venture, which leads to their failure (Singh, 2008). In the context of this study, if the observed effects are the result of overconfidence and not high entrepreneurial self-efficacy, the ultimate result may be venture failure. It is important to note that the likelihood of entrepreneurial success is at its optimum level when the confidence levels are at medium levels (Singh, 2008). If what was identified in this research as high levels of self-efficacy is overconfidence indeed, the likelihood of successful venture creation declines.

In addition, we measured entrepreneurial intentions and not entrepreneurial behavior. While entrepreneurial intentions are the main driver of entrepreneurial behavior, we encourage future research to also examine the impact of stereotype reactance on entrepreneurial behavior. This approach helps better understand the chronic effects of stereotypes on individual’s behavior. Moreover, this research only examined stereotype protection as one the possible reactance responses to negative stereotypes. However, stereotype reactance may also lead stereotyped individuals to increase their efforts beyond normal performance levels and exceed performance expectations. For example, it may lead women to perform better than men despite the existence of negative gender stereotypes. A more detailed examination and discussion of this phenomenon is both warranted and necessary and we encourage future research to address this phenomenon.

The other limitation of the study is related to measuring business growth. Business growth intentions were measured through economic indicators. However recent literature has criticized such approach. It has been recommended that business growth and performance needs to be measured though both social indicators as well. In doing so, we may actually find that men and women’s businesses perform equally. Thus, we recommend future research to consider both financial and social indicators in measuring business growth intentions. Furthermore, future studies may also examine stereotypes as they relate to other minority groups such as racial groups.

Finally, as this research showed, entrepreneurial self-efficacy contributed to women’s overcoming of challenges. Future studies can actually look at women’s improvements in regards to entrepreneurial self-efficacy using longitudinal studies. If such improvement exists, we may be able to better understand the recent increases entrepreneurial activities of women.

## Conclusions

To date, much of women entrepreneurship has been focused on documenting the differences between male and female entrepreneurs and their ventures (Jennings & Brush, 2013). The literature on women’s entrepreneurship has mostly focused on problems and challenges, the causes and roots of such problems, and on offering explanations for these problems (James, 2012). Previous research has failed to provide an explanation for how women overcome such problems. This research explained how women entrepreneurs overcome the negative gender stereotypes through the implications of stereotype reactance/protection theory (Kray et al., 2001; Javadian & Zoogah, 2014) and entrepreneurial self-efficacy.

The results indicated that entrepreneurial self-efficacy helps women overcome the stereotype threat. Specifically, when negative gender stereotype were present, women with high levels of entrepreneurial self-efficacy did not have lower venture creation intentions compared to men. Moreover, stereotype reactance among women entrepreneurs was found to positively impact their venture growth intentions. Women with high levels of entrepreneurial self-efficacy were found to have stronger venture growth intentions as stereotype reactance increased.

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**Table 1:** Means, standard deviation and 95% confidence intervals for entrepreneurial intention and sample sizes for different conditions as they relate to entrepreneurial self-efficacy (ESE)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Men** | | | | | |
|  | Negative gender stereotype | | Positive gender stereotype | | Nullified condition | |
| Parameters | High ESE | Low ESE | High ESE | Low ESE | High SE | Low ESE |
| *M* | 3.86 i2 | 3.56 i2 | 3.67 e2 | 2.99 f2 | 3.98 a1 | 2.97 b1 |
| *95% CI* | 3.54 - 4.18 | 3.23 - 3.89 | 3.25 - 4.08 | 2.56 - 3.42 | 3.42 - 4.55 | 2.31 - 3.65 |
| *N* | 34 | 29 | 20 | 17 | 11 | 7 |
| *SD* | 0.16 | 0.16 | 0.21 | 0.22 | 0.29 | 0.34 |
|  | **Women** | | | | | |
|  | Negative gender stereotype | | Positive gender stereotype | | Nullified condition | |
| Parameters | High ESE | Low ESE | High ESE | Low ESE | High ESE | Low ESE |
| *M* | 3.54 j2 | 2.82 k2 | 3.72 g2 | 3.06 h2 | 3.94 c1 | 2.86 d1 |
| *95% CI* | 3.22 - 3.88 | 2.42 - 3.21 | 3.34 - 4.10 | 2.68 - 3.44 | 3.49 - 4.40 | 2.51 - 3.21 |
| *N* | 36 | 20 | 27 | 22 | 19 | 25 |
| *SD* | 0.17 | 0.2 | 0.19 | 0.19 | 0.23 | 0.18 |

*Note:* Means with different letter subscripts differ from each other across self-efficacy levels at the .05 alpha levels under each stereotype conditions for the corresponding gender. Means with the first subscript 1 are statistically equivalent to the control group mean for the same gender whereas, the first subscript 2 indicates no statistical equivalence with the control group mean for the corresponding gender.

**Table 2**

Descriptive statistics and correlations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | Mean | S.D. | 1 | 2 |
| **1. Entrepreneurial Self-Efficacy** | 4.17 | .50 |  |  |
| **2. Stereotype Reactance** | 2.98 | 1.08 | -.104 |  |
| **3. Growth Intentions** | 4.46 | .71 | .252\* | .086 |

Notes: n = 153. \* p < .05, \*\* p < .01

***Figure 1: Interaction effect of entrepreneurial self-efficacy (ESE) and stereotype reactance (SR)***