

What do women entrepreneurs want?[†]

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- Women are the majority owners in 30% of all privately held firms in the United States. These firms have \$2.5 trillion in revenues and employ 19.1 million individuals. However, despite the large number of women business owners, little is known about the motivations that women have for starting their own firms.
- This study uses an expectancy theory framework to examine the differences in motivations to start a firm between men and women. We propose that nascent entrepreneurs expend effort toward the creation of a new venture because they believe this will lead to a set of desired outcomes. We further argue that the desired outcomes of new venture creation differ by sex.
- Hypotheses are tested using data from the phone surveys of the Panel Study of Entrepreneurial Dynamics ($n = 441$). Our findings indicate that there are significant differences in motivations for starting a new business, with men being motivated by financial gains, self-realization, and autonomy, whereas for women status is an additional significant motivating factor. Our results confirm the explanatory power of expectancy theory in examining entrepreneurial start-up motivations.

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Introduction

Women are majority owners in 30% (6.7 million) of all privately held firms in the USA and own at least a 50% share in 46% (10.1 million) of such enterprises. These firms boast \$2.5 trillion in revenues and employ 19.1 million employees (CWBR, 2005). Yet despite the overwhelming evidence that women-owned firms are an important part of the US economy, surprisingly, little research has examined women-led firms or analyzed the motivations that women have for starting their own firm (Gatewood *et al.*, 2003). Consider-

ing the received research, the reasons that are offered for the systematic differences between women- and men-owned firms include human capital (Verheul *et al.*, 2005), social capital (Renzulli *et al.*, 2000), access to debt or equity financing (Brush *et al.*, 2002; Robb and Wolken, 2002), strategy (Chaganti and Parasuraman, 1996), industry sector (Anna *et al.*, 2000; Robb and Wolken, 2002), or personal motivations (Carter *et al.*, 2003).

To better understand motivations when starting a new venture, we adopt an expectancy theory perspective, following the *effort-performance-outcome* model (Gatewood, 1993; Gatewood *et al.*, 2002). We propose that nascent entrepreneurs expend effort toward the creation of a new venture because they believe this will lead to a set of desired outcomes (Gatewood *et al.*, 2002). Augmenting expectancy theory with social learning

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theory, we argue that the desired outcomes of new venture creation differ by sex (Hackett and Betz, 1981). In the following sections, we develop hypotheses that test the relationship between effort and the expected outcomes of the new venture creation process. We then describe our methodology, and present our findings and conclusions.

Theory and hypotheses

Expectancy theory and entrepreneurship

Expectancy theory is a dominant theoretical framework for explaining human motivation. The concept of expectance forms the basis for human behavior (Olson *et al.*, 1996). The theory assumes that action will be taken when an individual believes that his or her efforts will lead to successful performance, which will bring certain outcomes with direct positive value or will lead to other valued outcomes (Vroom, 1964; Olson *et al.*, 1996). Its popularity can be attributed to the logical appeal of its underlying assumption that the perceived consequences of actions rationally determine human behavior (Miller and Grush, 1988).

Expectancy theory (also referred to as VIE theory) explains motivation based on three relationships: *expectancy*, or the subjective probability that effort will lead to an outcome or performance; *valence*, interpreted as the importance, attractiveness, desirability, or anticipated satisfaction with results; and *instrumentality*, or the relationship between an outcome and another outcome (Vroom, 1964; Mitchell, 1974; Olson *et al.*, 1996). In application, it posits three relationships:

1. People believe that exerting a certain amount of *effort* can result in achievement of a particular level of *performance* (the relationship between effort and performance).
2. People must believe that a particular *performance* level will result in a specified desired *outcome* (instrumentality relationship).

Expectancy theory (also referred to as VIE theory) explains motivation based on three relationships: expectancy, or the subjective probability that effort will lead to an outcome or performance; valence, interpreted as the importance, attractiveness, desirability, or anticipated satisfaction with results; and instrumentality, or the relationship between an outcome and another outcome

3. The reward or desired outcome must be attractive for people to be motivated to attain it (valence–personal goals relationship; Gatewood *et al.*, 2002; Gatewood, 2004).

Many empirical studies in entrepreneurship have used the expectancy framework. Shaver *et al.* (2001) found that entrepreneurs who believed in their skills and ability were motivated to exert the necessary effort. Douglas and Shepherd (2000) modeled the choice to pursue entrepreneurship as a utility function, which reflected anticipated income, the amount of work effort anticipated to achieve this income, the risk involved, plus other factors such as the person's attitudes for independence and perceptions of the anticipated work environment, for example the presence of funding or opportunities. Krueger *et al.* (2000) compared the predictive power of two models of entrepreneurial intentions: Ajzen's (1987, 1991) Theory of Planned Behavior and Shapero's (1982) model of the Entrepreneurial Event. They found strong statistical power for both models, which led them to propose that intentions are the single best predictor of any

planned behavior, including entrepreneurship, and that personal and situational variables typically have an indirect influence on entrepreneurship by influencing key attitudes and the general motivation to act (Krueger *et al.*, 2000: 412).

In this study, we follow Gatewood (1993) and Gatewood *et al.*, (2002) and conceptualize new venture creation as a process based on the effort-performance-outcome model. In this framework, the effort expended to start a business (performance) leads to certain desired outcomes. In expectancy theory terms, the first-level outcome, starting the new venture, then leads to second-level outcomes, conceptualized by the reasons, or desired outcomes of starting a new venture. In our model, these reasons include self-realization (intrinsic motivating factors), status, financial success, and autonomy.

In addition to testing a customary expectancy model, in our model we include entrepreneurial intensity. Entrepreneurial intensity is the 'degree of entrepreneurship', or the level of commitment and focus of an entrepreneur leading a new venture (Liao and Welch, 2004: 188). Work on entrepreneurial intensity indicates that background, attitudes, and a complex set of factors associated with previous work experience all contribute to entrepreneurial intensity (Cooper and Dunkelberg, 1986). By adding entrepreneurial intensity to the expectancy framework we not only augment the model, but in doing so we better explain the initial effort expended by the nascent entrepreneur when starting a new venture. Formally:

H1. Entrepreneurial expectancy and entrepreneurial intensity will be positively and significantly associated with starting a business; and starting a business will be positively and significantly associated with desired outcomes (i.e., reasons or motivations to start a business).

New ventures and gender

Social learning theory argues that as a result of women's different socialization experiences,

they may lack strong expectations of personal efficacy in relationship to many career-related behaviors, and therefore may not fully attain their potential (Bandura, 1977; Hackett and Betz, 1981). Bussey and Bandura (1999) argue that a variety of factors influence gender development (e.g., peers, media, educational practices, occupational systems), and explain differences in women's and men's socialization. In the entrepreneurial context, performance accomplishments and vicarious learning are two major sources of difference (Hackett and Betz, 1981). Performance accomplishments are those successful performances on a task that provides information increasing one's expectations of efficacy related to a specific task or behavior. For instance, boys might be more likely to gain experience in mechanical skills or sports, while girls might experience task accomplishment in home-related activities (Macoby and Jacklin, 1974). Vicarious learning includes role models, sex role, and occupational stereotypes that can increase efficacy expectations from observing others succeed (Hackett and Betz, 1981).

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A few empirical studies in entrepreneurship have tested these ideas. Early social learning experiences are related to career decisions, with males having a higher preference for entrepreneurship (Matthews and Moser, 1996). In a national study of entrepreneurial tendencies among youth, Kourilsky and Walstad (1998) found that females were less

interested in starting a business and less confident in their abilities. Chen *et al.* (1998) also reported female students had lower self-efficacy than male students. Shaver *et al.* (2001) found females scored lower on their confidence in starting a business than males, while Ljungren and Kolvereid (1996) concluded that during start-up, men were more likely to stress economic expectancies (risk and profitability) while women more often stressed personal expectancies (autonomy and challenge). Anna *et al.* (2000) found that women in traditional businesses (e.g., services, retail) had stronger career expectations of security and balance between demands of work and home than women in non-traditional businesses (e.g., manufacturing). Finally, role models, self-assurance, and marriage were positively related to the supply of female entrepreneurs while education and experience were negatively correlated with entrepreneurship (Shiller and Crewson, 1997).

Role models, self-assurance, and marriage were positively related to the supply of female entrepreneurs while education and experience were negatively correlated with entrepreneurship

Other research finds women's intentions for launching and managing new businesses may differ from men's (Carter and Brush, 2004). Cliff (1998) found that personal considerations were more important than economic considerations for women in business expansion decisions, while Orser and Hogarth-Scott (2005) found women weighted the opinions of their spouses more heavily than men as a key ingredient for growth. Based on the expectancy theory argument, we reason that the different approaches to venture creation and

different desired outcomes among men and women nascent entrepreneurs shape different business expectancies (Brush, 1992; Cliff, 1998; Orser and Hogarth-Scott, 2005).

H2. In the entrepreneurial expectancy framework, desired outcomes (i.e., reasons or motivations to start a business) for starting the new venture will differ between men and women.

Methods

Sample

The data utilized for the current investigation were drawn from the National Panel Study of Entrepreneurial Dynamics (PSED), a longitudinal study of nascent entrepreneurs started in 1998. Nascent entrepreneurs were defined as individuals involved in attempting to start a new business within the past 12 months on their own (i.e., autonomous start-ups) as opposed to those doing so with sponsorship from existing firms. Motivated by a lack of understanding of who starts businesses, what process they undertake when starting a new business, and why some new businesses succeed while others fail, the objective of the PSED is to gain an introspective understanding of how nascent entrepreneurs create new businesses and what activities and behaviors they engage in during the process of enterprise creation. As part of a national survey, a total of 64,622 individuals in the United States were contacted through random-digit dialing by a marketing research firm. During these telephone interviews, two questions were used to identify those individuals who were in the process of starting a new venture:

1. 'Are you alone, or with others, now trying to start a business?'
2. 'Are you alone, or with others, now trying to start a new venture for your employer?'

Respondents who answered yes to either of these two questions were then asked two additional questions that determined whether

they were actively involved in the start-up process and whether they would share in the ownership of the new venture. Positive answers to both of these questions qualified an individual as a nascent entrepreneur to be requested to participate in the national panel study. Qualifying individuals were offered a monetary inducement (\$25) for their participation.

The PSED data were collected through a series of four waves of telephone interviews conducted at approximately one-year intervals by researchers at the University of Wisconsin between 1998 and 2003. In addition, a mail survey was also distributed after the first wave of phone interviews. To ensure that the entrepreneurs were 'nascent', those cases in which the business had had a positive cash flow for more than three months were classified as 'infant' businesses and were excluded from the sample. Given the complexity of the PSED, in 2004 a handbook was published as a guide for researchers using the PSED dataset (Gartner *et al.*, 2004). For researchers who are interested in examining the database, the first four iterations are available on the University of Michigan website (<http://projects.isr.umich.edu/PSED>) along with a codebook for deciphering the variables.

The sample of nascent-only entrepreneurs in the data from the phone surveys is 715. However, the sample was then reduced to $n = 441$, due to the reduced response rate in the mail survey and missing values. It is on this reduced sample that we present our descriptive statistics, reliability, and correlation analysis. Since we are specifically interested in differences between male and female nascent entrepreneurs, we then split the $n = 441$ sample by sex, leaving us with two subsamples of $n = 214$ for men and $n = 227$ for women, respectively.

Figure 1 illustrates an expectancy framework.

Measures

Both nominal and continuous measures are utilized in this study. We found strong support

for the reliability and internal validity of our measures. The standardized factor loadings are all above 0.64 (recommended minimum in the social sciences is usually 0.40); and all alpha levels are above the 0.60 threshold (Nunnally, 1970).

Independent variables — effort

Entrepreneurial intensity. Entrepreneurial intensity is a measure of how focused or committed the entrepreneur is to his/her start-up endeavor (Liao and Welsch, 2004). To measure intensity, we used three five-item Likert-type scaled questions (completely disagree to completely agree with a defined neutral point) that reflect the level of dedication that the nascent entrepreneur has toward the new venture:

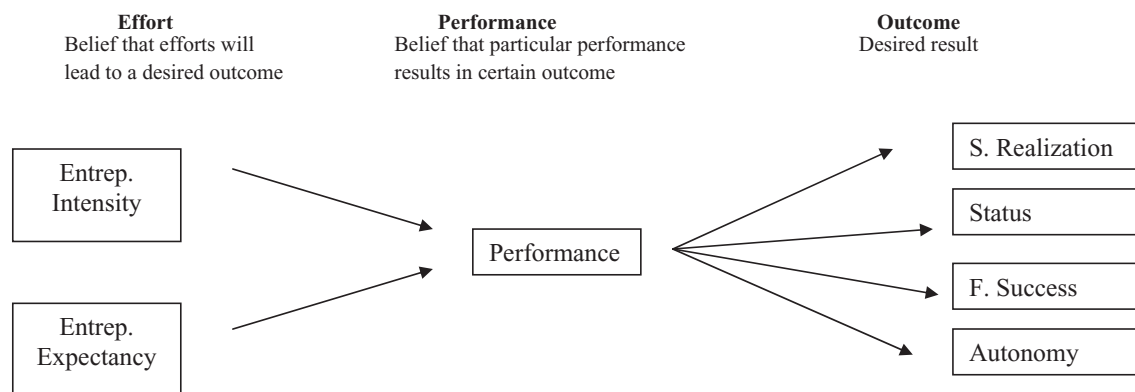
1. I would rather own my own business than earn a higher salary employed by someone else.
2. There is no limit to how long I would give a maximum effort to establish my business.
3. My philosophy is to 'do whatever it takes' to establish my own business.

The questions were confirmatory factor analyzed with factor scores of 0.64 or higher and a Cronbach's alpha of 0.65.

Entrepreneurial expectancy. Entrepreneurial expectancy is the belief that a particular action will be followed by a particular outcome (Gatewood, 2004). To measure expectancy, we used four five-item Likert-type scaled questions (completely disagree to completely agree with a defined neutral point):

1. If I work hard, I can successfully start a business.
2. My past experience will be very valuable in starting a business.
3. Overall, my skills and abilities will help me to start a business.
4. I am confident that I can put in the effort needed to start a business.

The four items were confirmatory factor analyzed with factor scores of 0.51 or higher and a Cronbach's alpha of 0.71.

**Definitions:****Effort:**

Entrepreneurial Intensity: How focused or committed the entrepreneur is to his/her start-up endeavor.
 Entrepreneurial Expectancy: The belief that a particular action will result in a particular performance.

Performance:

Starting a Business: The perceived relationship between first-level outcomes (starting a business) and second-level outcomes (what the nascent entrepreneur desires to achieve from starting the business).

Outcomes:

Self Realization: The pursuit of goals (typically beyond financial) that are of interest to the entrepreneur.
 Status: Status is an individual's position relative to others in a given social situation.
 Financial Success: Individual's intention to earn more money and achieve financial security.
 Autonomy: The desire for freedom, control and flexibility in the use of one's time.

Figure 1. An expectancy framework — whole sample.

Mediating variable — performance

Starting a business. Starting a business is the perceived relationship between first-level and second-level outcomes. First-level outcomes are ends in themselves (e.g., starting a business) while second-level outcomes are instrumental in achieving other results (e.g., reasons why entrepreneurs choose to start a business) (Gatewood, 2004). Following Gatewood (2004), we measured this using a single item:

1. If I start a business, it will help me to achieve other important goals in my life (completely disagree to completely agree with a defined neutral point).

Dependent variables — desired outcomes

To measure the reasons why nascent entrepreneurs chose to start their own business (second-level outcomes), we factor analyzed a series of questions that address reasons or motivations that nascent entrepreneurs have

when starting a new venture (also referred to as career reasons; Carter *et al.*, 2004).¹ In our analysis, we found four naturally occurring factors, which roughly correspond to the expectancy theory second-level outcomes discussed in Gatewood (1993).

Self-realization. Self-realization is the pursuit of goals that are of interest to the entrepreneur. In our classification, this measure, albeit expanded, corresponds to Birley and Westhead's (1994) need for personal development. We measured self-realization using seven questions. 'To what extent is the following reason important to you in establishing this new business:'

¹In contrast to the *Handbook of Entrepreneurial Dynamics*, in which the authors specified that their analysis should identify six factors, in this study we chose to use naturally occurring factors. To do so, we conducted exploratory factor analysis from which we identified four factors and then confirmatory factor analysis to check the internal validity of those factors.

1. to be innovative and in the forefront of technology;
2. to achieve something and get recognition;
3. to develop an idea for a product;
4. to fulfill a personal vision;
5. to lead and motivate others;
6. to have the power to greatly influence an organization;
7. to challenge myself?

Factor scores were at the 0.50 level and higher with a Cronbach's alpha of 0.81.

Status. Status is an individual's position relative to others in a given social situation. We follow Gatewood (1993), who posits that status is a second-level outcome or reason for desiring to start a business in her new venture framework. In our model, status corresponds to Shane *et al.*'s (1991) new firm formation typology, which presents four reasons why individuals desire to start their own firms. Our measure of status is a combination of what Shane *et al.* (1991) label as recognition (need to have status, approval, and recognition from those in the community) and roles (individual's desire to follow family traditions or emulate the example of others) (Carter *et al.*, 2003). We measured status using four questions. 'To what extent is the following reason important to you in establishing this new business?'

1. to achieve a higher position for myself in society;
2. to continue a family tradition;
3. to be respected by my friends;
4. to follow the example of a person I admire?

Factor scores for this measure are 0.47 and higher and Cronbach's alpha is 0.68.

Financial success. Perhaps the most popular reason for starting a new business, financial success involves reasons that describe an individual's intention to earn more money and achieve financial security (Carter *et al.*, 2004). In our study, we follow Scheinberg and MacMillan (1988) and Birley and Westhead

(1994), who both label financial success as Perceived Instrumentality of Wealth. To construct our measure, we used four questions. 'To what extent is the following reason important to you in establishing this new business?'

1. to give myself, my spouse, and children financial security;
2. to build a business my children can inherit;
3. to earn a larger personal income;
4. to have a chance to build great wealth or a very high income?

Factor scores for this measure are 0.56 and higher with a Cronbach's alpha of 0.75.

Autonomy. Autonomy is an individual's desire for freedom, control, and flexibility in the use of one's time (Schein, 1978). We follow Scheinberg and MacMillan (1988), Shane *et al.* (1991), and Birley and Westhead (1994), who all discuss the importance of autonomy as a reason for nascent entrepreneurs to start a new business (Carter *et al.*, 2004). Our measure has three questions. 'To what extent is the following reason important to you in establishing this new business?'

1. to have greater flexibility for my personal and family life;
2. to have freedom to adapt my own approach to work;
3. to grow and learn as a person?

Factor scores for this measure are 0.58 or higher and Cronbach's alpha is 0.62.

Table 1 presents descriptive statistics and zero-order correlations for the variables in our model.

Analysis and results

Measurement model

To best capture the theoretical interdependencies between our constructs, we used structural equation modeling to test our hypotheses. This method allows for a fine-grained analysis of the hypothesized relationships within the context of the entire model. It is a particularly attractive choice when

Table 1. Means, standard deviations, and correlations for the variables in the model

	Mean	S.D.	1	2	3	4	5	6	7
Entrepreneurial Intensity	2.32	2.29	1						
Expectancy	4.32	2.42	0.332**	1					
Starting a Business	4.00	0.85	0.384**	0.463**	1				
Self Realization	3.21	6.22	0.281**	0.305**	0.275**	1			
Status	2.09	3.53	0.272**	0.123**	0.145**	0.556**	1		
Financial Success	3.54	3.91	0.294**	0.214**	0.311**	0.446**	0.393**	1	
Autonomy	4.13	2.3	0.209**	0.182**	0.241**	0.426**	0.295**	0.322**	1

$N = 0.469$ * $p < 0.05$; ** $p < 0.01$ two-tailed tests.

testing mediating variables in that all of the relevant paths are tested simultaneously and complications such as measurement error and feedback are incorporated directly into the model (Baron and Kenny, 1986).

We followed the two-stage structural equation modeling procedure recommended by Anderson and Gerbing (1988). In the first stage, the measurement model was estimated using confirmatory factor analysis in order to test whether the constructs exhibited sufficient reliability and validity. The second stage identified the structural model(s) that best fit the data and tested the hypothesized relationships between the constructs. Due to our particular interest in the differences between men and women with respect to overall motivations, we ran structural equation models on both the full sample and on a split sample of men and women, respectively.

We checked the data for violations of the normality assumption, for missing data, and for outliers. To compensate for the over-samples of women and minorities in the PSED dataset, we weighted the data following the weighting scheme developed by Shaver (2004), before using the variance-covariance matrix as the input for the structural equation models.

Tables 2 and 3 present the path coefficients and fit statistics for the measurement models.

Hypothesis tests

To test our two hypotheses we ran a series of structural equation models. In hypothesis 1,

we hypothesized that the expectancy motivation theory will link effort and intensity expended toward the creation of the new venture and work experience to performance and that performance will lead to desired outcomes (e.g., reasons or motivations to start a new venture). We found that the model fit reasonably well with the data (see **Table 2**) and that with respect to the reasons for starting a new venture, the paths leading to the mediating variable starting a new venture (performance) from entrepreneurial intensity and expectancy were both significant (path estimate 0.097, $p < 0.000$; path estimate 0.133, $p < 0.000$, respectively). In addition, the paths leading from the mediating variable starting a new venture to the second-order outcome or reasons to start a new venture were also all significant. Therefore, we find strong support for the overall expectancy model as a way to understand entrepreneurial motivations to start a new venture.

In hypothesis 2, we posited that the reasons for the establishment of a new business would vary by sex. To test this we split the sample by sex and ran separate structural equation models on the men-only and women-only samples. In the female-only sample we found significant results between entrepreneurial intensity and starting a new venture and between expectancy and starting a new venture (path estimate 0.104, $p < 0.000$; path estimate 0.150, $p < 0.000$), and all of the paths between the mediating variable performance and the dependent variables self-realization, role/status, financial success, and autonomy were also significant (see **Table 3**). However,

Table 2. Structural equation model results: model statistics

Model	χ^2	d.f.	χ^2 /d.f.	p	GFI	AGFI	NFI
Expectancy Model Whole Sample (H1)	8.272	3	2.757	0.041	0.995	0.951	0.988
Expectancy Model Men Only (H2)	9.988	5	1.998	0.076	0.987	0.928	0.965
Expectancy Model Women Only (H2)	11.405	4	2.851	0.022	0.986	0.903	0.974
Recommended value			<2.0	≥ 0.05	≥ 0.90	≥ 0.90	≥ 0.80

Table 3. Structural equation model results: path estimates

Path	Expectancy Model — Whole Sample (H1)	Expectancy Model — Men Only (H2)	Expectancy Model — Women Only (H2)
Entrepreneurial Intensity → Starting a Business	0.097***	0.088***	0.104***
Expectancy → Starting a Business	0.133***	0.113***	0.150***
Starting a Business → Self Realization	1.164**	1.964***	4.018***
Starting a Business → Status	0.360*	0.325	0.659*
Starting a Business → Financial Success	1.218***	0.943**	1.351***
Starting a Business → Autonomy	0.573***	0.730***	0.576***

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; two-tailed tests.

in the male-only sample, while entrepreneurial intensity and expectancy both led to starting a new venture (see **Table 3**), we found that three of the paths between starting a new venture and desired outcomes were significant (self-realization, financial success, and autonomy) and that status was not significant (path estimate 0.325, $p < 0.12$) (see **Table 3**).

Taken together, the results from our hypothesis testing suggest that nascent entrepreneurs expend effort toward the creation of a new venture, because they believe the establishment of a new venture would lead to some desired outcomes. Relative to men, women associate a greater number of desired outcomes with the establishment of a new venture and in particular perceive that starting a new venture is associated with status, whereas men are primarily focused on self-realization, financial success, and autonomy. Our findings are discussed next.

Discussion

In this article we tested an expectancy theory model of entrepreneurial behavior as it applies

Relative to men, women associate a greater number of desired outcomes with the establishment of a new venture and in particular perceive that starting a new venture is associated with status, whereas men are primarily focused on self-realization, financial success, and autonomy

to nascent entrepreneurs' motivation to start a new business. Our results suggest that:

1. Expectancy theory is a good theoretical framework to help understand entrepreneurial start-up motivations.
2. The reasons why nascent entrepreneurs want to launch a new business are different

between men and women. Below, we discuss each of these findings.

Expectancy theory model of entrepreneurial behavior

This study provides a strong and robust test of the data using the expectancy theory effort-performance-outcome framework (hypothesis 1). The expectancy model produced in the test of our first hypothesis is significant, which suggests that entrepreneurial intensity and entrepreneurial expectancy, which represent the commitment to the endeavor and the belief that working hard will lead to success, were significantly and positively associated with the expectation that the launch of the new venture would lead to desired outcomes. This expectation, in turn, was positively and significantly associated with all of the desired outcomes we explored: self-realization, financial success and status, and autonomy. This follows previous literature, which shows that entrepreneurs are motivated to start ventures to fulfill a need for personal development (Scheinberg and MacMillan, 1988; Birley and Westhead, 1994), to achieve financial success (Scheinberg and MacMillan, 1988; Birley and Westhead, 1994; Carter *et al.*, 2004), and to have autonomy or independence (Scheinberg and MacMillan, 1988; Shane *et al.*, 1991; Birley and Westhead, 1994). Overall, our results confirm the explanatory power of expectancy theory in examining entrepreneurial start-up motivations.

Entrepreneurial outcomes differ by sex

While hypothesis 1 confirms the validity of using an expectancy framework to understand motivations to start a new venture, when we split the sample, we found that there are significant differences in motivations for starting a new venture between men and women. With respect to starting a new venture, men are motivated by self-realization, financial success, and autonomy, while women are

We found that there are significant differences in motivations for starting a new venture between men and women

motivated by all of our desired outcomes (self-realization, status, financial success, and autonomy). One interpretation for the difference in the significance in status between the two samples is that entrepreneurship is perceived as a 'male' domain (Verheul *et al.*, 2005). Given previously established relationships between entrepreneurial activity and perception, it may be that for women, the perception is that starting a new venture will lead to additional status because it is a task more often associated with masculine behavior (Dickerson and Taylor, 2000; Verheul *et al.*, 2005). In addition, the desire to achieve status through the creation of a business venture among women may be induced by the gender-based horizontal and vertical market segregation which influences the number and type of labor opportunities for women (Verheul *et al.*, 2005). When there is disequilibrium between the aspirations of an individual and the perceived valuation of the labor market offerings, an individual is likely to be pushed into pursuing entrepreneurial opportunities (Lee and Venkataraman, 2006).

Alternatively, our results support moral development theory which argues that men are socialized through education, school, and work to value separation, material success, autonomy, and rational thinking while women are socialized to value connections, non-material aspects of life, and achievement (Gilligan, 1982; Smith, 2000; DeMartino and Barbato, 2003). Existing research on gender role socialization shows that traditional attitudes about gender roles and accompanying stereotypes influence career choices and occupational self-efficacy (Hackett and Betz, 1981). Therefore, gender differences are more likely to

The desire to achieve status through the creation of a business venture among women may be induced by the gender-based horizontal and vertical market segregation which influences the number and type of labor opportunities for women

arise when role pressures and tasks are gender-stereotypical. Venture creation is traditionally a domain where women are unlikely to have self-efficacy building experiences and in which gender role pressures may influence perceived efficacy. Hence, women's likelihood of developing self-efficacy to succeed in this domain is limited by the percentages of men and women in the occupation and therefore, differences in motivations would be expected.

Implications and conclusions

In this article, the entrepreneurial expectancy theory of motivation explains the differences between men and women with respect to their motivations in starting a new business. Our findings indicate that there are significant differences based on sex. The sex-based differences support our contention that motivations for starting a new venture are different between men and women, thereby suggesting that a finer-grained analysis, based on sex, is appropriate when looking at start-up behaviors.

However, as with all empirical research, our study has a number of limitations. In particular, we are relying on survey data, and as a result our model is not as rigorous a test of an expectancy framework as an experiment in a pure laboratory setting. In addition to our

method, our study was constrained by the data available in the PSED dataset. Another weakness is our 'starting a new business' measure, which, while continuous, is a single-item measure. As with all research using the PSED, the design presents the researcher with the trade-off between unparalleled access to data about a large number of nascent entrepreneurs and the data collection limitations.

An appreciation of the differences based on sex, in starting and growing a new venture, is essential for researchers to understand the cognitive basis for new venture creation

Limitations notwithstanding, our findings suggest that there are significant sex-based differences in motivations to start a business. Our findings support an expectancy lens toward entrepreneurial motivations, and call for a finer-grained, sex-based perspective. An appreciation of the differences based on sex, in starting and growing a new venture, is essential for researchers to understand the cognitive basis for new venture creation.

Biographical notes

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