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Business accomplishments, gender and entrepreneurial self-image

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Abstract

Drawing on Bem's psychological theory of self-perception, this paper presents and tests a model that examines the impact of business accomplishments and gender on entrepreneurial self-image and explores the definition of entrepreneurship according to Vesper's entrepreneurial typology. Regression techniques are used to identify those business accomplishments that university alumni associate with self-perceptions of entrepreneurship. Experience as a small business person (founding, running, and/or owning a small business) most clearly predicts entrepreneurial self-image. Results also support predictions of both direct and indirect effects of gender as well as direct effects of education and business degree. Results of a separate expert panel study are used to rank business accomplishments according to degree of entrepreneurship. Results of both studies reveal stark contrasts in the implied definition of entrepreneurship between entrepreneurship experts (academic and practitioner alike) and the general business community (as represented by the alumni). This raises questions about the

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meaning of the term “entrepreneurship”, what the word “entrepreneur”, in particular, conveys to the general public, and the implications for practice and future research.

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1. Executive summary

The objective of the paper is to further our understanding of the concept of “entrepreneur”. It provides insight into the perception of the concept by members of the *general business community* (business people) and compares this perception to that of *entrepreneurship specialists* (academics, policymakers and other professionals in the field of entrepreneurship). The paper seeks an answer to the following research question: “Do certain characteristics of individuals influence their *entrepreneurial self-image*, i.e., the extent to which they perceive themselves to be entrepreneurs?” The primary set of characteristics, the respondent’s business accomplishments, is derived from a typology of entrepreneurial activities as proposed by Vesper (1999). The paper draws upon Bem’s (1972) psychological theory of self-perception, positing that behavior influences self-image. Gender is used as a second individual characteristic to predict entrepreneurial self-image. The study tests for both direct gender effects (controlling for entrepreneurial activity) and indirect gender effects (through entrepreneurial activity) on entrepreneurial self-image.

The relationships between gender, business accomplishments, and entrepreneurial self-image are investigated using an exploratory study based on a nonrandom sample of 207 alumni of a large Midwestern U.S. university. As a measure of entrepreneurial self-image, respondents are asked whether they would call themselves an entrepreneur. They are also asked which of a series of business accomplishments they had either done in the past or are currently doing, representing different aspects of Vesper’s entrepreneurial typology (i.e., Founder, Acquirer, Runner, Take-Off Artist, Turnaround Artist, Intrapreneur, Innovator, Industry Captain, and Champion) as well as selected additional categories (i.e., Owner, Service Provider, and Family Business). For further analysis, the number of business accomplishments is reduced to meaningful scales using principal components analysis.

Regression analysis is used to identify those business accomplishments that university alumni associate with self-perceptions of entrepreneurship. We find that entrepreneurial self-perception is influenced by certain business accomplishments defined in the literature as being entrepreneurial but not others. Business owners, founders, and small to mid-sized business managers (combined in this study’s Small Business Person scale) are most likely to describe themselves as entrepreneurs. On the other hand, Corporate Entrepreneurs (including intrapreneurs, innovators, and champions) are not likely to call themselves entrepreneurs.

A separate expert panel study is set up to rank business accomplishments according to degree of entrepreneurship. Comparing the results of the expert panel study to that of the alumni study reveals a divergence of opinion in what is entrepreneurial according to the

experts and which business accomplishments create an identity as an entrepreneur among the general business community.

Gender, although weaker in its explanatory power, also appears to provide added explanation to the model, most clearly as a separate direct effect on entrepreneurial self-perception, but with a likely indirect effect (through Business Accomplishments) as well. In particular, we find that women tend to select different activities than men, choosing less frequently those activities both genders view as entrepreneurial. In addition, women are less likely to perceive of themselves as entrepreneurs, independently of activities undertaken. It may be that women also value the same business accomplishments differently than men do, although the present study cannot determine the extent of this third gender effect. In addition to the effects of business accomplishments and gender, the regression results reveal significant effects of certain human capital variables (education and business degree) on entrepreneurial self-perception.

Although some of the gender effects are small in absolute terms, the study demonstrates the importance of including gender as an explanatory variable in general research questions of interest in the field of entrepreneurship. At a more practical level, if these differences hold up in follow-up research, different guidelines for attracting, supporting, and counseling female entrepreneurs and small business owners should be considered by directors of small business service centers and other service providers.

2. Introduction

The present paper is motivated in part by the following question: “What is an entrepreneur?” This seemingly simple question, which is likely to be asked numerous times to most of our readers in the course of their professional work, continues to spark debate and disagreement within the scholarly community. The present paper is neither intended nor is likely to end that debate. However, it does attempt to provide new insights about the way in which the term “entrepreneur” is perceived by members of the general business community (i.e., business people) and how this perception compares to that of entrepreneurship specialists (i.e., academics, policymakers, or other professionals active in the field of entrepreneurship). The outcomes of our research are not meant necessarily to be used to further define the *scholarly domain* of entrepreneurship, i.e., what entrepreneurship researchers should study to gain knowledge about this phenomenon (see Davidsson, 2003). However, our results may help clarify what the general business community and perhaps society-at-large, may be thinking about when we use the term entrepreneur, thus expediting communication between scholars and those groups.²

² Some researchers may wish to further consider these multiple perspectives in light of the scientific paradigm of *realism*, i.e., the view that although there is a “real” world to discover, it can only be comprehended imperfectly via investigation and triangulation from different viewpoints or data sources (Healy and Perry, 2000).

To further our understanding of the popular view of the concept of entrepreneur, the primary research question of this paper is as follows: “Do certain characteristics of individuals influence their *entrepreneurial self-image*, i.e., the extent to which they perceive themselves to be entrepreneurs?” The primary set of characteristics, the respondent’s business accomplishments, is derived from a typology of entrepreneurial activities proposed by Vesper (1999). Although grounded in social–psychological research, unique to this study is the focus of the direct influence of business behaviors on entrepreneurial self-perceptions, as well as the influence of gender on those self-perceptions.

In order to validate the set of business accomplishments used in our study to represent activities with entrepreneurial potential, we include an expert panel study to supplement the review of the entrepreneurship behavior literature. Although one can argue that there is a two-way relationship between business accomplishments and entrepreneurial self-image, the focus in the present paper is on the influence of behavior *on* entrepreneurial self-image. From a theoretical perspective, our study is a new application of well-established psychological theories linking behavior and perception (James, 1890, 1950; Bem, 1972; Bandura, 1977, 1986). Moreover, to our knowledge, this is the first time that Vesper’s (1999) entrepreneurial typology is tested and used in empirical research.

Gender is a second individual characteristic used to predict entrepreneurial self-image. At the macro level, female and male entrepreneurs appear to differ with respect to the type of entrepreneurial activity they engage in and the way in which they manage this activity (Verheul and Thurik, 2001; U.S. Small Business Administration, 1995; OECD, 1998; Carter et al., 1997; Kalleberg and Leicht, 1991; Fischer et al., 1993). In addition, the management literature indicates that, as compared to men, women tend to underrate their own performance (Wohlers and London, 1989; Lindeman et al., 1995). Accordingly, we expect to find an indirect effect of gender (through entrepreneurial activity) on entrepreneurial self-image, as well as a direct gender effect (controlling for entrepreneurial activity). Several control variables, including age, education level, and business education, are also examined for possible effects on entrepreneurial self-image.

2.1. Structure of the paper

The paper is structured as follows. First, we introduce the concept of (entrepreneurial) self-perception and its relationship to business behaviors. Within this section, we elaborate on the theories linking behavior and self-perception. Second, we provide an overview of business accomplishments or behaviors that are classified as entrepreneurial in the literature, including a discussion of Vesper’s (1999) entrepreneurial typology. Using Vesper’s entrepreneurial typology as a basis, we propose a ranking of business accomplishments according to the degree of entrepreneurship based on the extant literature. Subsequently, we review the literature regarding the relationship between gender and entrepreneurship, including business behaviors as well as entrepreneurial self-image. On the basis of the theoretical discussion, we introduce a model and hypotheses for explaining entrepreneurial self-perception from activity and gender.

In the subsequent section, we discuss the methodology and results for validating the proposed ranking of business accomplishments according to degree of entrepreneurship,

based on the views of 162 respondents in an expert panel survey. Next, we present the methodology and results for testing the model and hypotheses with an exploratory study, based on a nonrandom data sample of 207 alumni of a large Midwestern U.S. university. Final sections present discussion of the results, directions for future research and conclusions.

3. Business behaviors and entrepreneurial self-perception

This paper draws upon the world of self-concept. According to James (1890, 1950), the ‘empirical self’, consisting of a material, social and spiritual component, is the key to understanding the experience of individuals.³ In the present paper it is argued that people come to know themselves by drawing information from their own behavior.

According to social learning theory, Bandura (1977, 1986) argues that there is *triadic reciprocal causation* among behavior, cognitive and other personal factors and the environment. This means that on the one hand, the environment and the perception of both this environment and self by an individual can influence the individual’s behavior. On the other hand, the behavior of an individual influences the environment as well as the way in which he or she perceives of him- or herself and the environment.⁴ In addition to Bandura, in the psychology literature, Bem (1972) provides evidence of behavioral influences on self-perception. More specifically, Bem’s self-perception theory states that: “individuals come to ‘know’ their own attitudes, emotions and other internal states partially by inferring them from observations of their own overt behavior and/or the circumstances in which this behavior occurs” (Bem, 1972, p. 5).

The relationship between entrepreneurial activity and perception has been studied mainly from the viewpoint that perception influences entrepreneurial activity (Boyd and Vozikis, 1994; Scherer et al., 1990, 1989; Krueger and Brazeal, 1994; Krueger, 1993; Chen et al., 1998). These studies focus upon and refer to the concept of *self-efficacy* as the perceived personal ability to perform a given task. In that context, it has been suggested that individuals make career choices based upon their perception of and the associated fit with a certain profession (Fagenson and Marcus, 1991). Chen et al. (1998, p. 297) argue that “. . . they assess their personal capabilities against the requirements of different occupations”. The choice to engage in entrepreneurial activity is thus interpreted as dependent upon whether individuals can identify with the characteristics and behaviors that are associated with entrepreneurship.

In the present study, we take the opposite perspective and explain entrepreneurial self-perception by way of prior business accomplishments (which may vary in the degree to which they are perceived as being entrepreneurial by different individuals). Although Bem’s self-perception theory has been used extensively in other types of research

³ See Smith (1992) for a detailed discussion of William James’s theory of self.

⁴ “This reciprocity does not mean that the different influences are of equal strength” (Wood and Bandura, 1989, p. 362).

applications⁵ within the field of entrepreneurship, relatively few empirical studies have focused upon explaining entrepreneurial self-perception from behavior. However, van Gelderen (2000) provides some evidence to support the claim that entrepreneurial behavior influences self-perception. His study investigates what people consider entrepreneurial about their behavior.

4. Definitions and typologies of entrepreneurial behaviors

Definitions of entrepreneurship vary widely (Hébert and Link, 1989; van Praag, 1999; Lumpkin and Dess, 1996). Kaufmann and Dant (1998) identify the following three classes of definitions: (1) those based on traits or qualities; (2) those based on the role or function of the entrepreneur in the economic process; and (3) those based on the behavior or activities of entrepreneurs. For the purpose of our paper, we take a behavioral approach to studying entrepreneurship, consistent with the mainstream scholarly perspective (Gartner, 1990).

4.1. *Entrepreneurial behavior or activities*

A wide range of business behaviors has variously been classified in the literature as “entrepreneurial”, including starting a business (i.e., new venture creation), innovation, business ownership, business growth and size achievement, and managing a large business. In this section, we will make a distinction between these different types of entrepreneurial activity.

Early on in the development of the field of entrepreneurship, many scholars propagated the view that new venture creation is at the heart of entrepreneurship (Chandler, 1990; Gartner, 1990, 1989, 1985; Low and MacMillan, 1988; McClelland, 1961; Schumpeter, 1934; Vesper, 1980). The problem with this notion of entrepreneurship is that new ventures are likely to vary with respect to growth realization and innovativeness. Along with “newness”, both growth (Carland et al., 1984; Dunkelberg and Cooper, 1982) and innovation (Hornaday, 1992; Schumpeter, 1934) are considered essential components of entrepreneurial behavior. Building on the concept of newness, but recognizing the need to view entrepreneurial behavior more broadly, Gartner et al. (1989) argue that most studies of new venture creation tend to ignore that there are other ways to achieve business ownership than through starting a new business from scratch, for instance, through the acquisition of an established business.

⁵ Self-perception theory has been applied extensively to social scientific research since the mid-1970s, but primarily to empirical research in applied social psychology (Dolinski, 2000; Uranowitz, 1975; Weiner, 1974) and clinical psychology (Robak, 2001; Schnall et al., 2002; Haemmerlie and Montgomery, 1987). It has been compared and contrasted with cognitive dissonance theory to explain human attitudes (Weiner, 1974). Self-perception theory has been applied not only to self-perceptions of both physical and cognitive behavior (see Damrad-Frye and Laird, 1989). Studies generally confirm predictions derived from the theory. More recently, it has been applied to marketing and consumer behavior research (Forehand, 1998; Laverie et al., 2002).

Cooper and Dunkelberg (1986) also distinguish between different paths to business ownership, including starting a new business, purchasing or inheriting a business and being promoted or brought in by existing owners. Building on these notions, Lumpkin and Dess (1996, p. 136) argue that “the essential act of entrepreneurship is new entry”, defining new entry as “entering new or established markets with new or existing goods or services”. This can be achieved “by starting a business, through an existing business or *internal corporate venturing*” (Lumpkin and Dess, 1996, p. 136). Implicit in this definition of new entry is the notion that entrepreneurship can exist within large businesses. This type of entrepreneurship is often referred to as *corporate entrepreneurship* or *intrapreneurship* where new ideas and responsibilities are implemented in existing, large businesses (Wennekers and Thurik, 1999; Stopford and Baden-Fuller, 1994; Stevenson and Jarillo, 1990). In this respect, “entrepreneurial activities in existing, large firms often take place by mimicking smallness” and “entrepreneurship occurs irrespective of firm size” (Wennekers and Thurik, 1999, p. 33). Other researchers even argue that managing a business is an entrepreneurial activity. According to McClelland (1965), managers can display entrepreneurial behavior in their wage jobs by taking responsibility for their actions and decisions and creatively solving problems. Moreover, Brandstätter (1997) stresses that entrepreneurial behavior is important in all leading positions within higher levels of organizations.

4.2. Vesper's entrepreneurial typology

In his keynote address at the 1999 Conference of the United States Association for Small Business and Entrepreneurship (USASBE), Karl Vesper proposes an entrepreneurial typology, embracing a broad range of these themes in entrepreneurial behavior (Vesper, 1999; see Table 1). Vesper does not try to rank these activities, but instead acknowledges that different types of entrepreneurial activity exist side by side (see also Cunningham and Lischeron, 1991). Vesper argues that researchers should adopt a view that separately identifies different types of entrepreneurs rather than solving the conundrum: “What is an entrepreneur”?

Table 1
Vesper's entrepreneurial typology

Name/type	Entrepreneurial activity
Starter	Enters an independent business by creating a new one
Acquirer	Enters an independent business by acquiring an ongoing concern
Runner	Manages a small to medium business beyond start-up
Take-off artist	Steers a company into a high-growth trajectory
Turnaround artist	Saves a failing company
Innovator	Makes something new happen that is not a company
Champion	Supports innovator
Intrapreneur	Takes initiative for business unit creation inside an established business
Industry captain	Runs a big business

Table 2
Ranking business accomplishments according to degree of entrepreneurship^a

Business accomplishments	Entrepreneurial characteristics			Score Rank	
	Opportunity perception	Risk-taking	Innovation		
Founder ^b	4 High	4 High	4 High	12	1
Innovator	4 High	2 Medium	4 High	10	2
Intrapreneur	4 High	2 Medium	3 Medium/high	9	3 (tie)
Take-off artist	4 High	2 Medium	3 Medium/high	9	3 (tie)
Acquirer	3 Medium/high	3 Medium/high	2 Medium	8	5 (tie)
Franchisee	3 Medium/high	3 Medium/high	2 Medium	8	5 (tie)
Runner	3 Medium/high	2 Medium	3 Medium/high	8	5 (tie)
Turnaround artist	3 Medium/high	2 Medium	2/3 Medium–medium/high	7.5	8
Champion	3 Medium/high	1/2 Low–medium	2 Medium	6.5	9
Industry captain	2 Medium	1 Low	1 Low	4	10
Service provider	2 Medium	1 Low	1 Low	4	10
Ownership	Indeterminate	4 High	Indeterminate	?	?
Family business	Indeterminate	Indeterminate	Indeterminate	?	?

^a Rankings in this table are based on authors' review of the literature.

^b We choose to use the term *Founder* instead of Vesper's *Starter* as we make a distinction between starting a business which is not a franchise (*Founder*) and starting a franchise firm (*Franchisee*) in this study's analyses.

4.3. Degree of entrepreneurship

Although Vesper does not propose a ranking of entrepreneurial behaviors listed in his proposed typology, other entrepreneurship researchers have suggested that different behaviors or activities may represent different 'degrees of entrepreneurship' (Cooper and Dunkelberg, 1986). In particular, different activities may vary in degree of entrepreneurship, depending upon underlying requirements or characteristics, such as opportunity perception (Kirzner, 1979), imagination (Shackle, 1979), creativity (Torrance, 1962), innovation (Schumpeter, 1934), risk-taking (Knight, 1921/71; Cantillon, 1931; Hull et al., 1980; Sexton and Bowman, 1985, 1986; Stewart et al., 1999; Begley, 1995; Stewart and Roth, 2001),⁶ locus of control (Perry et al., 1986; Rotter, 1966), need for achievement (McClelland, 1961; Perry et al., 1986), need for autonomy, initiative, and persistence.

For our study, we single out opportunity perception, risk-taking, and innovation as most important in determining the degree of entrepreneurship. This selection is consistent with results in Gartner's (1990) study of the perceptions of the concept of entrepreneurship by experts. In fact, in the results of a factor analysis reported in Gartner's research, the three factors explaining the greatest amount of variation include items emphasizing risk-taking, innovation, and opportunity recognition (Gartner, 1990).⁷ More specifically, although Gartner

⁶ Note however that other research on risk-taking has posited that risk-taking propensity is *not* a distinctive feature of entrepreneurship. For instance, see the work of Brockhaus and Nord (1979), Brockhaus (1980), and Brockhaus and Horwitz (1986).

⁷ The factor analysis clusters 90 attributes in a smaller set of factors (or 'themes'). The eight-factor solution explains about 67% of the variance in response (see Gartner, 1990).

(1990) labels the first factor, “entrepreneur”, 6 of the 12 items associated with this factor mention risk. Similarly, the second factor, labeled “innovation”, includes a number of items related to innovative activity. Finally, two of the most highly correlated items in the third factor, labeled “organization creation”, mention opportunity recognition. Consistent with Gartner’s findings, we consider risk-taking, innovation, and opportunity perception as the primary indicators for degree of entrepreneurship. In the remainder of this section, we review the way in which each of these three characteristics relates to several of the activities listed in Vesper’s entrepreneurial typology as well as other activities mentioned in the entrepreneurship literature. At the end of this section, we present an initial rank ordering according to our interpretation of the literature (see Table 2).

4.3.1. Founding a firm from “scratch”

New venture creation, i.e., founding a firm from *scratch* (without any past history or linkage to a parent company), is often viewed as involving the highest degree of entrepreneurship. Founding a firm involves the processes of both perceiving an opportunity and acting upon the perceived opportunity (Kirzner, 1979). It involves innovation because something is created where nothing existed previously and resources are combined in a new way (Cooper and Dunkelberg, 1986). According to Carland et al. (1984), an entrepreneurial venture is in principle characterized by innovative practices.⁸ In addition, the founder is willing to personally absorb the risks involved in starting a new business (Cooper and Dunkelberg, 1986). Several scholars further argue that founders show higher risk-taking than nonfounders (Begley, 1995; Begley and Boyd, 1987; Hull et al., 1980).

Based on the rather large variance among start-ups in the degree to which they have innovative versus imitative strategies (Samuelsson, 2001; Aldrich, 1999), one could argue that because many start-ups are imitative in nature, those should be excluded from the notion of entrepreneurship or at least viewed as a separate category. However, Davidsson (2003) formulates the argument for viewing imitative entry as ‘new’. He notes that such entry drives the market process by giving consumers additional choices and challenging incumbent firms to change their behavior in response to new competition. In addition, he points out that no entrant is a perfect copy or ‘clone’ of an existing actor (Davidsson, 2003). In this sense, we use innovativeness not exclusively to refer to new products, but also to new markets and added value in the marketplace represented by the new firm.

4.3.2. Franchise start-up

A franchise start-up can be seen as an alternative to founding an *independent* firm (Kaufmann, 1999; Williams, 1998). Shane and Hoy (1996) refer to franchising as a form of *cooperative* entrepreneurship. Starting a franchise business can be considered less entrepreneurial than founding a firm from ‘scratch’ because it involves less innovation. Although a franchisee runs the risk of introducing the franchisor’s concept into new markets, the potential

⁸ There may also be differences between innovative firms regarding their degree of entrepreneurship, for instance, based on the contribution of innovation to firm growth. As Kirchoff (1994) notes, some innovations catch on and lead to growth whereas others do not.

for innovation is limited because maintenance of the franchisor's concept is important (Kaufmann and Dant, 1998). Moreover, starting a franchise business also involves less opportunity perception and risk-taking because the market concept has already been developed and tested, albeit not necessarily in the particular market where the entrepreneur is planning to start the franchise business.

4.3.3. Acquisition

Purchasing an existing business was considered only a "slightly important" attribute in Gartner's study of expert definitions (Gartner, 1990). This may reflect a shift in the literature of the past few decades towards viewing entrepreneurship as creating market impact or societal value rather than as owning and running one's own firm.⁹ However, as a potential entrepreneurial activity, it is listed specifically in Vesper's entrepreneurial typology and has been included in various entrepreneurship research studies. Acquiring a business can be viewed as entrepreneurial because the purchase of an established business is preceded by opportunity perception. Although the acquirer is not involved in the founding of the business and the risk of start-up is circumvented, risk-taking is involved as the business is operated at the purchaser's own cost and risk. However, there may be relatively little need for innovation because the business is already established and resources have already been put to use. The extent to which the acquirer is innovative depends upon his or her plans to implement changes, and to pursue growth strategies, e.g., through entering new markets and/or developing new products (Cooper and Dunkelberg, 1986). On the other hand, the purchase may be inspired by an innovative idea the purchaser wants to implement to add value to the existing business. Because the purchaser of a business can develop and implement his/her own ideas, the acquisition of an established business may be more entrepreneurial than the purchase of a franchise where innovation tends to be more limited. Acquisition may involve a healthy or a declining firm. When purchasing a declining firm with the intent of saving it, the acquirer faces additional challenges because the liabilities of the declining firm have to be translated or rendered into opportunities.

4.3.4. Intrapreneurship or corporate entrepreneurship

Like business founders, intrapreneurs can be considered entrepreneurial because they introduce something new, albeit within a large business and its boundaries. Intrapreneurship differs from other forms of entrepreneurship with respect to the context in which the entrepreneurial act takes place. Like managers, intrapreneurs act on behalf of an existing organization instead of themselves (Carrier, 1996). Because entrepreneurial ideas are implemented within the context of an existing organization, the ultimate risk is borne by the owner of the business instead of the initiator of the corporate venture. However, an intrapreneur may risk the loss of his or her job or career disruption if the venture fails. Furthermore, similar to other entrepreneurship ventures, successful corporate entrepreneurship requires alertness to business opportunities (Cunningham and Lischeron, 1991).

Innovation may overlap but is not necessarily the same as intrapreneurship, in that it does not necessarily require creation of a new venture. Innovation can also express itself in other

⁹ Per Davidsson, personal communication, 2003.

ways, including changes to products and processes or even the development of new products or processes within existing business units.

For innovations to be successful, organizations also need innovation *champions*, i.e., organization members who risk their own position to ensure the innovation's success (Schön, 1963; Burgelman, 1983; Shane, 1994). The champion sees and acknowledges the value of adopting new ways to organize and combine resources. According to Howell and Higgins (1990), champions show higher risk-taking and innovativeness than nonchampions within an organization. The degree of risk-taking and innovativeness is likely to be dependent upon the activities of the champion. Shane (1994) and Venkataraman et al. (1992) distinguish between different championing activities and roles.¹⁰

4.3.5. Ownership versus management

Several scholars have made a distinction between business owners and corporate managers (Carland and Carland, 1992; Smith et al., 1988). Owners are believed to show higher risk-taking than managers because their range of possibilities is larger and more uncertain (Bearse, 1982) and an owner has the ultimate responsibility for decisions (Gasse, 1982). Brandstätter (1997) argues that whether someone is seen as an entrepreneur is determined first by ownership, then by decision-making power and leadership functions and finally by the size of the company.¹¹ Hence, ownership is seen as more entrepreneurial than management, irrespective of firm size or characteristics.

4.3.6. Management of small versus large firms

It may be argued that there are differences in the degree of entrepreneurship between managers of different businesses. Different phases of a business involve different activities and related risks (Churchill and Lewis, 1983; Greiner, 1972; Garnsey, 1998). Based on the characteristics of opportunity perception, risk-taking and innovation one may propose that managers of small, young, and high-growth firms are perceived as more entrepreneurial than those of established large firms.

4.3.7. Tentative rankings based on the literature

On the basis of the underlying entrepreneurial characteristics of risk-taking, innovation, and opportunity perception, we propose a tentative ranking of business accomplishments. In addition to the business accomplishments previously mentioned, we include the category

¹⁰ Shane (1994) argues that champions provide people with autonomy from organizational norms and rules; build coalitions to support the innovation with managers from different functional areas; build a decision-making mechanism that includes all organization members; use informal means to persuade people to support the innovation and protect the innovation teams from interference by the organizational hierarchy. Venkataraman et al. (1992) distinguish between different types of champions, including champions of ideas, resource champions, champions of opportunistic behavior, and champions of incorporation.

¹¹ These conclusions are based on a study of IMAS (Institut für Markt und Socialanalysen), focusing on perceptions of what constitutes an entrepreneur by a sample of respondents drawn from the Austrian population in 1976 and 1986 (see Brandstätter, 1997).

‘service provider’ (e.g., accountant, banker, lawyer) as a type of anchor. Providing services to the business sector would least likely be viewed as entrepreneurial, either by the general public or by entrepreneurship scholars. We also include family business as a type of business accomplishment, for exploratory reasons, although there is little evidence in the literature to suggest that working in a family firm is more or less entrepreneurial than being involved in a nonfamily firm.

The results of the ranking are presented in [Table 2](#). The ranking is done as follows. For three characteristics (opportunity perception, risk-taking, and innovation), we discriminate between four levels (low, medium, medium–high, and high). We assign the values 1 through 4 to these levels, respectively. The score of the business accomplishments equals the sum of these values. This leads to the ranking of business accomplishments as more or less entrepreneurial in [Table 2](#). This ranking is based on our interpretation of the characteristics of the different entrepreneurial activities mentioned in the literature. On the basis of the previous discussion and [Table 2](#), it can be argued that founding a firm from scratch involves the highest degree of entrepreneurship, followed by innovating behavior, intrapreneurship, and managing a high-growth business (tied for third place), acquisition, starting a franchise business, and managing a small business (tied for fifth place), saving a failing business, supporting an innovator, and, finally, managing a large business and providing services to an entrepreneur (tied for last place).

Because ownership can involve a start-up, acquisition or franchise formula, it is difficult to determine the level of innovation involved. Accordingly, it is also difficult to rank the level of opportunity perception required. Hence, although ownership is included in the table, its ranking is left indeterminate. The ranking for family business is also left indeterminate, as there is much variation between family businesses, their degree of entrepreneurship depending upon, for instance, the size and phase of the business, and innovative capacity and ability.

5. Gender and entrepreneurship

In addition to business accomplishments, this paper explores the impact of gender on entrepreneurial self-image. This section summarizes past work on gender and entrepreneurship, including research on women in business, as well as research linking gender and self-perception in a business context.

5.1. *Women in business*

Statistics regarding the participation of women in entrepreneurship should be interpreted with caution. It has been argued that female start-up rates exceed those of men.¹² However, some of this increase is due to an overall increase of women in the labor

¹² See Center for Women’s Business Research <http://www.womensbusinessresearch.org> and Carter (2000).

market in most of the developed countries, including the United States. Despite the reported increase in female start-up rates, women still constitute a minority of the total number of self-employed people, accounting for approximately 25–35% of total business ownership in many Western countries (Carter, 2000).¹³ Reynolds et al. (2002) report that throughout the 37 countries participating in the Global Entrepreneurship Monitor, men are 50% more likely to be involved in entrepreneurial activity than women.¹⁴ In terms of the proportion of workers who are self-employed, women participate at a lower rate than men. For instance, in the United Kingdom, approximately 15% of the working male population is self-employed, compared with only about 9% of the working female population (Carter, 2000). Moreover, female-owned businesses have a lower performance in a number of areas relative to male-owned firms. Women-owned firms tend to engage in relatively underperforming sectors, such as retailing and services (U.S. Small Business Administration, 1995; OECD, 1998; van Uxem and Bais, 1996), are smaller in size (Carter et al., 1997; Kalleberg and Leicht, 1991; Fischer et al., 1993; Verheul and Thurik, 2001), exhibit lower growth levels (Fischer et al., 1993; Hulshoff et al., 2001), have a higher rate of discontinuing, and report lower profits (Carter et al., 1997).

Several reasons have been proposed to explain the performance differences between male- and female-owned firms, including the level of relevant business experience (Cliff, 1998; Cromie and Birley, 1992; Watkins and Watkins, 1983; Kalleberg and Leicht, 1991; Fischer et al., 1993; Verheul and Thurik, 2001), the proportion of the total workweek committed to the business (Brush, 1992; Goffee and Scase, 1985; Stigter, 1999), the propensity to take risks (Verheul and Thurik, 2001; Sexton and Bowman-Upton, 1990; Masters and Meier, 1988), age of the firm and the number of days a business operated (Watson, 2002), as well as the industry women are involved in (Watson, 2002; Verheul and Thurik, 2001). Other reasons refer to differences in values across gender, positing that women business owners are more likely to value quality and other goals not directly related to growth and economic performance (Brush, 1992; Du Rietz and Henrekson, 2000; Kalleberg and Leicht, 1991; Rosa et al., 1996; Verheul and Thurik, 2001; Verheul et al., 2002).

In summary, because the economic criteria of size and growth are often used as measures of success (Cliff, 1998; Buttner and Moore, 1997), and growth-orientation is considered an important entrepreneurial characteristic (Dunkelberg and Cooper, 1982), women may rate themselves as less entrepreneurial than men based on these objective differences, i.e., because they tend to manage small and low-growth businesses.

5.2. Gender and self-perceptions in business and entrepreneurship

Past research on gender differences in self-perception has mainly focused on managerial self-perception. In general, these studies indicate that women tend to underrate

¹³ For the United States, see US Small Business Administration (1995) and NFWBO (1996).

¹⁴ In the Global Entrepreneurship Monitor, entrepreneurial activity includes nascent entrepreneurs (starting or operating a business no older than 3 months) and new businesses (in existence for less than 3.5 years; see Reynolds et al., 2002, p. 38).

their skills or performance as compared to men (Wohlers and London, 1989; Lindeman et al., 1995). This underrating has been attributed to the fact that women often do not take credit for success, attributing success to external sources or luck rather than to effort or ability (Rosenthal et al., 1996; Parsons et al., 1982; LaNoue and Curtis, 1985). Moreover, Rosenthal et al. (1996) argue that it may be ‘proper female modesty’ accounting for the underrating by female managers.

Beyer (1990, 1998) and Beyer and Bowden (1997) argue that when (managerial) tasks and roles are perceived as more masculine than feminine, women are more likely than men to underestimate their competencies in these areas. Along these lines, several studies show that managers are perceived to have characteristics more commonly associated with men than with women (Schein, 1973, 1975; Powell and Butterfield, 1979, 1989). Within the area of entrepreneurship, Fagenson and Marcus (1991) find that women assign more weight to masculine attributes in the profile of a successful entrepreneur. A more recent study by Powell et al. (2002) finds that, although managerial stereotypes place less emphasis on masculine characteristics than earlier studies suggest, a good manager is still perceived to be predominantly masculine by both women and men. Hence, in spite of changes in the role of women in the United States and internationally over the past several decades, we may still find entrepreneurship to be associated with more masculine characteristics, such as autonomy, perseverance, high energy levels, self-confidence, and decisiveness (Chaganti, 1986; Hisrich and Brush, 1983), and thus likely to negatively affect the entrepreneurial self-image of women.

6. Model and hypotheses

We propose a model including the independent influence of both gender and business accomplishments on entrepreneurial self-image as well as the combined effect of gender and business accomplishments, i.e., the indirect effect of gender through accomplishments. The model is presented in Fig. 1.

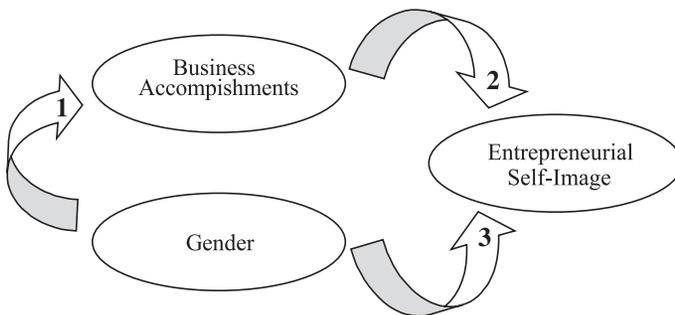


Fig. 1. Proposed model: influences on entrepreneurial self-image.

Based on this model, we test the following hypotheses. Hypothesis 1 represents the impact of certain business accomplishments on entrepreneurial self-image (arrow 2 in Fig. 1). Hypothesis 1 is exploratory in nature as we make no a priori predictions about the effect of specific activities on entrepreneurial self-image, nor do we predict their respective

Table 3
Description of variables

Name of variable	Description of variable
Entrepreneurial self-image ^a	The extent to which an individual perceives of him- or herself as an entrepreneur. <i>Question: would you call yourself an entrepreneur?</i> (1 = no, 2 = don't think so, 3 = maybe, 4 = possibly, 5 = definitely)
Gender	Whether an individual is male or female (male = 0 and female = 1).
Business accomplishments ^b	Respondents were asked the following: "Please check any of the following business accomplishments you have done in the past or are currently doing".
Founder ^c	Created a new business from scratch? (no = 0, yes = 1)
Franchisee ^c	Started a franchise business? (no = 0, yes = 1)
Acquirer ^c	Acquired an ongoing concern? (no = 0, yes = 1)
Runner ^c	Managed a small to mid-sized business beyond start-up? (no = 0, yes = 1)
Take-off artist ^c	Steered a company into a high-growth trajectory? (no = 0, yes = 1)
Turnaround artist ^c	Saved a failing company? (no = 0, yes = 1)
Intrapreneur ^c	Led an effort to create a business unit within an established company? (no = 0, yes = 1)
Innovator ^c	Made something new happen (e.g. new product, program) other than a new business unit or new company? (no = 0, yes = 1)
Industry captain ^c	Ran a large company? (no = 0, yes = 1)
Champion ^c	Supported subordinate innovator(s) or intrapreneur(s)? (no = 0, yes = 1)
Owner	Owned a major part of a business? (no = 0, yes = 1)
Service provider	Worked with/assisted entrepreneurs as a service provider? (no = 0, yes = 1)
Family business	Worked as member of a family business (2 or more family members, including yourself, active in the business)? (no = 0, yes = 1)
Control variables	
Age ^a	Age of the respondent (1 = 18–22; 2 = 23–27; 3 = 28–35; 4 = 36–45; 5 = 46–55; 6 = 56–65; 7 = over 65)
Education level ^a	What is the highest educational level attained? (0 = no degree; 1 = Bachelor's; 2 = Master's; 3 = PhD.)
Business degree ^a	Does the respondent have a business degree? (no = 0, yes = 1)
Introduction course ^a	Has the respondent followed an introduction course in entrepreneurship? (no = 0, yes = 1)

^a Asked only of respondents in the alumni study.

^b For this group of questions, alumni respondents were instructed as follows: "The following describe various types of business accomplishments. Please check any of the following that you have done in the past or are currently doing". Those in the expert panel received the following instructions: "Please rate whether or not you view each of the following business *accomplishments* as an example of entrepreneurship or entrepreneurial behavior". Respondents could rate the degree of entrepreneurship of the listed business accomplishments on a five-point scale where '1' = definitely; '2' = probably; '3' = maybe; '4' = don't think so; '5' = no.

^c Derived from *Vesper (1999)*.

weights. However, we would expect that those business accomplishments more clearly linked to entrepreneurship in the literature and/or more highly ranked by our panel of experts may have a higher influence on entrepreneurial self-image than those that are less highly ranked (see Tables 2 and 3).

Hypothesis 1: People with certain business accomplishments (e.g., the entrepreneurial activities as proposed by Vesper)¹⁵ will report a higher entrepreneurial self-image than those without such accomplishments.

We further argue that gender can have both a direct and an indirect effect on entrepreneurial self-image. The indirect effect refers to differences between men and women with respect to business accomplishments that lead, in turn, to differences in their entrepreneurial self-image (arrows 1 and 2 combined in Fig. 1), whereas the direct effect refers to gender differences in self-image that cannot be attributed to differences in business accomplishments (arrow 3 in Fig. 1). The direct effect is the effect of gender on entrepreneurial self-image when controlling for the effects of business accomplishments. The model builds on previous research efforts distinguishing between direct and indirect gender effects in other areas of entrepreneurial behavior, such as financing (Verheul and Thurik, 2001).

As discussed earlier in the paper, women tend to underrate their skills or performance as compared to men. They often do not take credit for success and attribute it to external factors or luck. Moreover, when tasks and roles are perceived as more masculine than feminine, women are more likely to underestimate their competencies in these areas. Irrespective of how it is measured, entrepreneurship is often perceived as more masculine than feminine, so that women may be expected to perceive of themselves less as entrepreneurs. However, past research also shows that women are less likely to own and run a business than men. Moreover, as they tend to focus on quality (Chaganti and Parasuraman, 1996; Brush, 1992), women are expected to be involved less often in managing a high-growth or large business. This leads to the formulation of Hypothesis 2a, representing the direct effect of gender on entrepreneurial self-perception (arrow 3 in Fig. 1) and Hypothesis 2b, predicting an indirect effect of gender on entrepreneurial self-image (arrows 1 and 2 combined in Fig. 1), with business accomplishments posited as (partially) mediating that effect. To summarize, we formulate Hypotheses 2a and 2b as follows:

Hypothesis 2a: Women have a lower entrepreneurial self-image than men, controlling for their particular business accomplishments (the direct effect).

Hypothesis 2b: Women have a lower entrepreneurial self-image than men due to differences in particular business accomplishments (the indirect effect). That is, business

¹⁵ In addition to the entrepreneurial activities of Vesper's typology in Table 1, in the empirical analysis, we include other activities (i.e., Owner, Service Provider, and Family Business) to create a better insight into the influence of activity on entrepreneurial self-perception (see Table 3).

Table 4
 Ranking business accomplishments as “entrepreneurial behaviors” according to an expert panel (n = 162)

Business accomplishment	Mean	Standard deviation	% rated ‘1’, ‘2’ by experts ^a	% rated ‘1’ by experts ^a	Literature ranking (Table 2)
(1) Founder	1.27	0.62	93.8	80.2	1
(2) Intrapreneur	1.95	0.99	73.9	40.4	3 (tie)
(3) Innovator	2.06	1.01	70.6	34.4	2
(4) Take-off artist	2.14	1.01	67.7	29.7	3 (tie)
(5) Franchisee	2.23	1.11	62.7	31.6	5 (tie)
(6) Runner	2.37	1.03	55.9	21.7	5 (tie)
(7) Turnaround artist	2.46	1.08	51.9	21.5	8
(8) Acquirer	2.58	1.21	50.3	21.7	5 (tie)
(9) Family business	2.82	1.20	36.9	17.2	?
(10) Champion	2.97	1.15	21.3	13.0	9
(11) Owner	3.12	1.13	19.6	9.2	?
(12) Industry captain	3.13	1.11	24.2	8.1	10
(13) Service provider	3.31	1.14	19.0	9.5	11

^a Experts were asked to rate whether or not each business accomplishment was viewed as an example of entrepreneurial behavior on a five-point scale where ‘1’ = definitely; ‘2’ = probably; ‘3’ = maybe; ‘4’ = don’t think so; ‘5’ = no.

accomplishments partially mediate the relationship between gender and entrepreneurial self-image.

7. Ranking business accomplishments as entrepreneurial behaviors according to an expert panel

7.1. Method

To validate the earlier proposed (literature) ranking of business accomplishments, we make use of an expert panel, including 216 respondents, each of whom were asked to give their opinion about the same list of business accomplishments used in the rest of the study (see Table 3).¹⁶ The classification of business accomplishments is based on the entrepreneurial typology as proposed by Vesper (1999), presented

¹⁶ Questionnaires were distributed to international experts on six different occasions: (1) Research in Entrepreneurship and Government Policy (Vlerick Leuven Gent Management School), Leuven, 27 August 2002 (29 respondents), (2) the 29th International Small Business Congress (RAI International Congress and Exhibition Centre), Amsterdam, 27–30 October 2002 (33 respondents), (3) the opening of the Rotterdam Incubation Centre Area010 (World Trade Centre Rotterdam), 5 November 2002 (43 respondents), (4) the 25th ISBA National Small Firms Policy and Research Conference (Brighton Business School), Brighton 13–15 November 2002 (25 respondents), (5) the RENT XVI (Research in Entrepreneurship and Small Business) Conference (Universitat Autònoma de Barcelona), Barcelona, 21–22 November 2002 (64 respondents), and (6) the UKBI 4th National Incubation Conference, Edinburgh, 25–26 November 2002 (22 respondents).

in Table 1. The following business accomplishments: *Founder*, *Acquirer*, *Runner*, *Take-Off Artist*, *Turnaround Artist*, *Intrapreneur*, *Innovator*, *Industry Captain*, and *Champion*, are drawn directly from Vesper's entrepreneurial typology. Three additional business accomplishments (i.e., *Owner*, *Service Provider*, and *Family Business*) are included in the analysis to create insight into the impact of the different business accomplishments on Entrepreneurial Self-Image. We also added the distinction between starting a new business from scratch (i.e., *Founder*) versus starting a franchise business (i.e., *Franchisee*).

Respondents in the expert panel were asked to indicate the extent to which each of the business accomplishments listed in Table 3 is an example of entrepreneurship or entrepreneurial behavior according to the following scale: (1) definitely; (2) probably; (3) maybe; (4) don't think so; (5) no; and (6) don't know.¹⁷ Respondents were considered 'experts', and were included in the study, if they had been working either as an academic or practitioner in the field of entrepreneurship for at least one year.¹⁸ Of the 216 respondents, 162 were included as experts in the study.¹⁹

7.2. Results of the expert panel study

Expert panel scores for each of the business accomplishments are displayed in Table 4. The ranking of the accomplishments according to the experts appears fairly similar to the rankings derived from a review of the literature (see Table 4, last column). Starting a (nonfranchise) business from scratch (i.e., *Founder*) is considered, by far, the most entrepreneurial, (with a score of 1.27), followed in descending order of mean, by *Intrapreneur* (1.95), *Innovator* (2.06), *Take-Off Artist* (2.14), *Franchisee* (2.23) and *Runner* (2.37). At least half of the expert raters also consider *Turnaround Artist* and *Acquirer* as 'probable' or 'definite' examples of entrepreneurship or entrepreneurial behavior. At the other extreme, only about 20% of the respondents 'probably' or 'definitely' consider *Service Provider*, *Champion*, or *Owner* as examples of entrepreneurship. Twenty-five percent of the expert panel respondents 'probably' or 'definitely' consider *Industry Captain* entrepreneurial. *Family Business* receives a higher rating, with a mean of 2.82, and with 36.9% 'probably' or 'definitely' considering it an example of entrepreneurial behavior. Because all 13 business accomplishment items are viewed as either 'probably' or 'definitely' an example of entrepreneurial behavior by almost 20% of the respondents in the expert panel, we decided to include all business accomplishments in further exploratory analyses based on the alumni panel dataset.

¹⁷ The answer: (6) "don't know" was coded missing.

¹⁸ Practitioners include the following: government officials or policymakers, consultants or service providers (e.g., bankers, accountants, or lawyers). Academics include researchers and/or instructors at the university level, excluding students. In an additional analysis, academics and practitioners were separated into two subsamples but the rank orderings remained essentially the same. Hence, the combined means are reported here.

¹⁹ The distribution of the 162 respondents is as follows: 18 (Area010 in WTC, Rotterdam), 23 (Vlerick Leuven Gent Management School, Leuven), 28 (ISBC, Amsterdam), 56 (RENT XVI, Barcelona), 21 (ISBA, Brighton), and 16 (UKBI, Edinburgh).

8. Testing the proposed model and hypotheses

8.1. Method

8.1.1. Data source and sample characteristics

To test the relationships between gender, business accomplishments, and entrepreneurial self-perception, about 2000 questionnaires were sent to various subsamples of alumni at a large Midwestern public university in the United States: 512 to MBA graduates (72 or 14% of which responded); 1200 to alumni identified as either a president or CEO in the Dun and Bradstreet database (118 or 10% of which responded); and 283 to recent graduates who had enrolled in an entrepreneurship course while at college (17 or 9% of which responded). Of these questionnaires, 331 were returned to sender, and 212 responded, of which 5 were unusable due to incomplete information. Of the total sample, 148 are male and 59 are female. The sample is nonrandom, but still useful from an exploratory standpoint.

Sample selection was hampered by the fact that in spite of the university's age (about 150 years old), as with many public universities of its type, the university kept incomplete information of its alumni. It had only recently set up an alumni office to track graduates. Selected subsamples were chosen to increase the likelihood that alumni would indeed be business founders and owners. The research team sent a cover letter, with an enclosed stamped return envelope, explaining that the Business Faculty of the university was interested in gathering additional information about the activities of its alumni. Although alumni were asked to complete the questionnaire regardless of whether or not they were a business owner, the letter also indicated that the purpose of the project was to identify alumni who had either started or run their own companies and also to identify alumni who might be eligible for recognition for their entrepreneurial achievements by the university.

The relatively low response rate for the overall population may be explained by several factors. First, due to the specific topic of the survey, and especially because few questionnaires were returned incomplete, there is the likelihood of a self-selection bias in that most of those responding were able to report one or more business accomplishments to his or her credit.²⁰ In hindsight, the content of the cover letter—which was constructed not only for research but also nonresearch purposes—as well as the content of the survey itself—a two-page survey, which in addition to background questions (name, address, educational history, gender, and age) was primarily aimed at identifying business accomplishments—likely skewed the response rate toward those individuals who already perceived of themselves as entrepreneurs. Nevertheless, the responses are of sufficient range to warrant inclusion in further analysis (see [Table 5](#) for report of means and standard deviations).

²⁰ This is supported by the fact that about 60% of the respondents reported having founded their own firms, which is higher than expected in the general population. For instance, [Delmar and Davidsson \(2000\)](#), referring to a U.S. sample from [Reynolds \(1997\)](#), indicate that 37.5% of the respondents reported involvement in any start-up or small business experience. The actual percentage of people having founded a business in that sample is likely to be even smaller.

The low response rate may be further explained by the fact that letters were sent out to company addresses instead of to individuals. In addition, due to budget constraints, only one mailing of the survey was carried out (with no prior announcement or follow-up). Finally, the relatively low response rate, especially for the subsample of recent graduates, may be attributed to the mobility of recent graduates, resulting in letters arriving at the wrong address.

Because the study was aimed at creating a better understanding of career patterns of alumni, the sample consists primarily of highly educated individuals. In particular, of the 207 respondents, 193 (94.3%) hold at least a Bachelor's diploma. Of these 193 respondents, 90 hold a Bachelor's degree only, 102 also hold a Master's degree and one holds a PhD. Only five respondents hold no diploma, having been included in the sample although they never graduated.²¹ Of the people with a university degree (either Bachelor's or Master's), approximately 60% report having specialized in business.

Finally, compared to other entrepreneurship data, our sample is characterized by a relatively high average age, even among entrepreneurs. While, in our study, the average age is 50 years, [Evans and Leighton \(1989a\)](#) report an average age of an entrepreneur of 40 years. Moreover, [Storey \(1994\)](#) reports that people typically start a business between 25 and 40 years of age. This is confirmed by [Reynolds et al. \(1999\)](#) who argue that countries with more individuals in the age class of 25 to 44 years old tend to have higher start-up rates.²² However, in our study, most of the respondents (approximately 50%) fall in the age category of 46 to 55 years old (see [Table 5](#)). This relatively high age of the respondents in the sample may be related to the self-selection bias alluded to earlier. That is, because respondents were asked to indicate their business *accomplishments* (see [Table 3](#)), this may have influenced the age distribution in the sample because younger people would be less likely to have accomplishments to report, and, accordingly, may be more hesitant to fill in and return the survey. In summary, given the nonrandomness of the sample, and the response bias regarding age, education, and location, conclusions drawn from this study should be viewed as exploratory in nature.

8.2. Description of variables

This section describes the variables used to test the model and hypotheses (see [Table 3](#)).

8.2.1. Business accomplishments

The business accomplishments used for the expert panel study were also asked of alumni study respondents. However, for the alumni, respondents were asked to check off which activities they had either done in the past or were currently doing. A dummy variable was created for each accomplishment that was checked off (0 = not checked; 1 = checked).

²¹ For the remainder of the respondents (i.e., nine respondents), data on education level are missing.

²² It should be borne in mind that [Storey \(1994\)](#) and [Reynolds et al. \(1999\)](#) make use of start-up samples, where individuals are likely to be younger.

Table 5
Pearson correlation between all variables for the total sample

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
(1) Entrepreneurial self-image	1														
(2) Gender	-.23**	1													
(3) Corporate entrepreneur	.08	-.04	1												
(4) Small business person	.56**	-.18**	.11	1											
(5) Acquirer	.16*	-.19**	.18*	.24**	1										
(6) Turnaround artist	-.02	-.18*	.18*	.14*	.36**	1									
(7) Franchisee	.08	-.06	.04	-.001	-.05	.17*	1								
(8) Take-off artist	.13	-.11	.38**	.33**	.32**	.23**	-.08	1							
(9) Industry captain	.16*	-.15*	.26**	.28**	.16*	.24**	-.05	.36**	1						
(10) Service provider	.09	-.02	.13	.08	.11	.07	-.07	.14*	.16*	1					
(11) Family business	.12	.06	-.002	.24**	.03	.03	-.04	-.06	-.03	.09	1				
(12) Age	.20**	-.22**	.02	.27**	.19**	.12	.19**	-.004	.02	-.01	-.07	1			
(13) Education level	-.31**	-.03	.06	-.30**	-.14*	-.09	.07	-.13	-.10	.04	-.16*	-.05	1		
(14) Business degree	-.34**	-.12	.07	-.29**	-.04	.01	-.07	.02	.06	.02	-.11	-.25**	.33**	1	
(15) Introduction course	-.16*	.20**	-.11	-.21**	-.13	-.01	-.06	-.09	-.07	-.06	.13	-.45**	-.16*	.05	1
Mean	3.76	0.29	0.22	0.43	0.25	0.13	0.03	0.17	0.05	0.13	0.23	4.57	1.50	0.61	0.08
Standard deviation	1.57	0.45	0.29	0.36	0.43	0.33	0.18	0.37	0.23	0.34	0.42	1.00	0.56	0.49	0.28
n	198	207	206	206	206	206	206	206	206	206	206	207	198	201	207

*Correlation is significant at the .05 level (two-tailed).

**Correlation is significant at the .01 level (two-tailed).

8.2.2. Gender

Gender is measured using a single self-report item on the questionnaire.

8.2.3. Control variables

According to human capital theorists (Becker, 1964), knowledge increases the cognitive ability of an individual, resulting in more efficient and effective behavior. Davidsson and Honig (2003) suggest that individuals with higher levels of human capital are more self-confident. Although human capital has been studied in the context of entrepreneurial behavior and success (Evans and Leighton, 1989b; Bellu et al., 1990; Bates, 1995; Gimeno et al., 1997; Manolova et al., 2002), it has not been investigated in the context of (entrepreneurial) self-perception. People with higher levels of human capital may be expected to have a more highly developed self-perception, being aware of their own capabilities. A distinction can be made between different types of knowledge—tacit versus explicit (Polyani, 1966)—and, accordingly, between different types of learning or education. Davidsson and Honig (2003) refer to formal (e.g., university education), informal (e.g., work experience), and nonformal education (e.g., specific training).

In the present study, we include the following human capital factors: *education level*, *business degree* (whether at the Bachelor's or Master's level), and *introduction course* (i.e., whether or not the respondent had taken an introductory course in entrepreneurship while at the university). In addition, we include *age* of the respondent as a control variable. Because experience tends to increase with age, we want to separate these two effects.

8.3. Data analysis

In an effort to reduce the number of business accomplishment items to meaningful scales, we first perform a factor analysis with the alumni dataset, using principal components analysis and a Varimax rotated solution to identify independent factors.

The relationship between business accomplishments and entrepreneurial self-image, represented by Hypothesis 1 (arrow 2 in Fig. 1), is tested with Pearson product-moment correlation coefficients and is investigated in the regression analyses. Hypothesis 2a (representing the direct gender effect) and Hypothesis 2b (representing the indirect gender effect) are tested through a series of linear regressions introducing the explanatory variables (gender, business accomplishments, and controls) in blocks, comparing their respective contributions.

One can test for the mediating effect of variable, m (=business accomplishments), by demonstrating that the relation between the proposed antecedent, x (=gender), and consequence, y (=self-image), disappears if m is included in the model (James and Brett, 1984). There are two accepted protocols proposed in the literature for testing for mediating effects. In either approach, one must first test that the relationships between x and y , x and m , and m and y are all significant in bivariate tests of correlation. In the next step, according to the James and Brett (1984) procedure, m can be seen as completely mediating the relationship between x and y if the added effect of x (ΔR_x^2) in the model, $y=f(m,x)$, is not significant when x is added as the last block. An alternate approach, outlined by Baron and Kenny (1986), and used for instance by Nerkar et al. (1996), proposes to compare the results of the model, $y=f(x)$, with those of the model, $y=f(x,m)$. In this latter method, to support the inference that m

completely mediates the effect of x on y , the unstandardized coefficient B_x should be significant in the model, $y=f(x)$, but not significant in the model, $y=f(x,m)$. Furthermore, the unstandardized coefficient B_m in the model, $y=f(x,m)$ should be significant. In the present study, we will follow the James and Brett (1984) procedure.

Throughout the paper, we use both one- and two-tailed hypotheses. As critical values of the one-tailed test procedures always exceed that of the two-tailed test procedures, we leave out the one-tailed results for ease of presentation. The present study is exploratory in nature, and although we hypothesize a particular direction in some cases, we do not rule out the possibility that effects can be in either direction.

9. Results

9.1. Factor analysis and scale formation for business accomplishments

Table 6 presents a seven-factor solution for the different business accomplishment items included in the questionnaire. Although the eigenvalues for Factors 6 and 7 are relatively low

Table 6
Factor analysis matrix of business accomplishments^a

Business accomplishment	Factors						
	1	2	3	4	5	6	7
	Small business person	Corporate entrepreneur	Acquirer/turnaround artist	Franchisee	Industry captain	Service provider	Family business
Founder	.62	-.21	-.18	-.19	.40	-.09	.12
Intrapreneur	.15	.65	.17	-.07	.12	.10	.05
Innovator	-.05	.78	.12	-.02	.09	-.18	-.05
Take-off artist	.42	.43	.33	-.16	.15	.13	-.36
Franchisee	.06	-.01	.004	.93	-.05	-.05	-.05
Runner	.81	.10	.22	.12	-.04	.15	-.05
Turnaround artist	-.06	.08	.67	.35	.42	.02	.12
Acquirer	.22	.12	.82	-.12	.12	.08	-.02
Family business	.18	.02	.04	-.06	-.05	.08	.91
Champion	.001	.66	-.31	.28	-.05	.34	.06
Owner	.72	.14	.09	.07	.12	-.14	.28
Industry captain	.17	.22	.09	-.05	.83	.11	-.10
Service provider	.01	.03	.08	-.06	.10	.92	.06
Eigenvalues	2.87	1.62	1.21	1.19	1.02	0.92	0.79
Cronbach α^b	.64	.52	.51	–	–	–	–

Only factor loadings $\geq .1$ are presented. Factor loadings $\geq .6$ are highlighted in bold.

^a Principal component analysis, Varimax rotated.

^b Cronbach α is computed including the highlighted activities.

Table 7
Results of regression analyses on entrepreneurial self-image

Explanatory variables	<i>B</i> value	<i>t</i> value	ΔR^{2a}
Constant	4.64**	7.03	–
Controls			0.21**/0.07**
Age	– 0.07	– 0.65	
Education level	– 0.51**	– 2.65	
Business degree	– 0.63**	– 2.89	
Introduction course	– 0.42	– 1.06	
Business accomplishments			0.32**/0.16**
Small business person	1.72**	5.29	
Corporate entrepreneur	0.44	1.28	
Acquirer	0.14	0.55	
Turnaround artist	– 0.94**	– 2.75	
Franchisee	0.94	1.82	
Industry captain	– 0.02	– 0.05	
Service provider	0.29	0.95	
Family business	– 0.05	– 0.21	
Gender	– 0.67**	– 3.07	0.05**/0.03**
R^2	.413		
Adjusted R^2	.369		
<i>F</i> statistic	9.36**		

B values refer to the unstandardized coefficients of the explanatory variables.

The unstandardized coefficient (*B*) for the influence of gender only on Entrepreneurial Self-Image amounts to $-.78^{**}$ ($P < .01$).

^a Change in R^2 when adding this variable first/last to the model (including all variables, i.e., business accomplishments, controls, and gender).

**Significant at the .01 level.

(0.92 and 0.79, respectively), seven factors are specified to have a better view of the independence of several of the business accomplishments, providing support for the decision to separately include these accomplishments in further analyses. When items with the highest factor loadings ($>.60$) for each factor are combined into scales, the resulting Cronbach α reliability coefficients are .64, .52, and .51 for Factors 1, 2, and 3, respectively. Although these reliabilities are not particularly high, Factors 1 and 2, in particular, appear fairly reasonable to interpret on the basis of their content. Factors 4 to 7 are made up of one item only. Although Acquirer and Turnaround Artist load on the same factor (Factor 3), they are included separately in the analyses because of low face validity for the factor: acquiring a business does not necessarily imply that the purchased firm is in distress and needs to be ‘saved’. In addition, someone saving a failing business is not necessarily a business owner, but can be a manager. The business accomplishment Take-Off Artist is omitted from further analyses because it does not clearly load on any of the seven factors specified. Furthermore, Take-Off Artist is highly correlated with several of the other items or factors, which would have resulted in a problem of multicollinearity if included in the overall regression analysis.

Eight business accomplishment variables are thus identified for further analyses: *Small Business Person* (consisting of Founder, Runner, and Owner), *Corporate Entrepreneur*

(consisting of Intrapreneur, Innovator, and Champion), Acquirer, Turnaround Artist, Franchisee, Industry Captain, Service Provider, and Family Business. Although the Cronbach α reliability coefficients are relatively low, the factors identified in the analysis have face validity. Furthermore, by combining these items, the resulting correlation among most of the factors is relatively low. In addition, the formation of scales reduces the number of variables in the regression analysis simplifying the presentation of results. The resulting regression model is fairly similar whether or not individual business accomplishments or factors are used.

9.2. Descriptive and bivariate statistics

In addition to the standard deviations mentioned earlier, Table 5 also reports the means and correlation coefficients between the major variables in this study.

9.3. Test for Hypothesis 1: relationships between business accomplishments and entrepreneurial self-image

Hypothesis 1 is tested first by examining the relationships between each of the business accomplishments and Entrepreneurial Self-Image. Although no predictions are made a priori, reviewing the bivariate correlation statistics presented in Table 5 provides support for the relationship between Entrepreneurial Self-Image and three of the business accomplishment variables, including Small Business Person ($r=.56$, $P<.01$), Acquirer ($r=.16$, $P<.05$), and Industry Captain ($r=.16$, $P<.05$).

Table 7 presents the results of an ordinary least squares (OLS) linear regression analysis predicting Entrepreneurial Self-Image based upon three blocks of variables: Business Accomplishments, Gender, and Controls (e.g., Age, Education Level, Business Degree, and Introductory Course). The last column of Table 7 presents the change in R^2 for each block when entered first or last. Although Business Accomplishments as a block explains 32% of the total variance (when entered first) and 16% (when entered last), this is primarily attributable to the Small Business Person factor, with a negative contribution to Entrepreneurial Self-Image by the Turnaround Artist variable ($B = -.94$; $P < .01$). Hence, although Hypothesis 1 is supported, this is primarily due to the contribution of Small Business Person activity, with the contribution of Turnaround Artist activity actually being opposite to the predicted direction. None of the other business accomplishments posited as entrepreneurial by Vesper's typology (Innovator, Champion, and Intrapreneur, combined into the factor, Corporate Entrepreneur; Acquirer; and Industry Captain) nor the additional business accomplishment variables added in our own typology (Franchisee, Service Provider, and Family Business) have a statistically significant contribution to Entrepreneurial Self-Image in the regression model.

9.4. Test for Hypothesis 2: gender effects on entrepreneurial self-image controlled for business accomplishments

As shown in Table 5, the bivariate relationship between Gender and Entrepreneurial Self-Image is significant and negative ($r = -.23$; $P < .01$), suggesting a significant total

gender effect. As shown in Table 7, the unstandardized coefficient for Gender is significant ($B = -.67$, $P < .01$), even when the effects of Business Accomplishments and the selected human capital variables are controlled for. Hence, the results support the inference that Gender has a direct effect on Entrepreneurial Self-Image (see Hypothesis 2a).²³

The results also support a partial mediating effect of certain business accomplishments in the relationship between Gender and Entrepreneurial Self-Image, reducing the change in R^2 of Gender by two percentage points, from 0.05 to 0.03. This effect is primarily due to the Small Business Person variable, which is positively correlated with Entrepreneurial Self-Image and negatively correlated with Gender (see Table 5). In summary, there is weak support for a partial mediating effect of business accomplishments as stated in Hypothesis 2b, but primarily due to the Small Business Person activity variable.²⁴

The human capital variables, Education Level and Business Degree, also influence Entrepreneurial Self-Image. Interestingly, they both negatively influence Entrepreneurial Self-Image. Hence, the higher the level of education an individual attains, the lower the individual's entrepreneurial self-perception. Note that because the majority of the respondents (93%) have either a Bachelor's or Master's degree, the negative influence of Education Level on Entrepreneurial Self-Image largely represents the difference between people with Bachelor's and Master's degrees. In addition, the type of education seems to influence Entrepreneurial Self-Image, with people having a business degree being less likely to perceive of themselves as entrepreneurs. Age of the respondent does not appear to influence Entrepreneurial Self-Image when included with other control variables.

10. Discussion

10.1. Further discussion of results

Some interesting patterns emerge in our study. Entrepreneurial Self-Image is influenced by certain business accomplishments defined in the literature as being entrepreneurial. This is consistent with self-perception theory (Bem, 1972). However, the list of accomplishments is much narrower than those generally considered within the academic community, and in particular, those proposed by Vesper. More specifically, those reporting business accomplishments as business owners, founders, and small to mid-sized business managers (combined in a Small Business Person scale) are most likely to describe themselves as entrepreneurs. On

²³ The unstandardized coefficients (B values) for Business Accomplishments are fairly similar whether or not the Gender variable is included in the model.

²⁴ In a separate regression analysis, we also tested for interaction effects of each business accomplishment and gender. However, we did not find evidence of interaction effects.

the other hand, those reporting business accomplishments as Corporate Entrepreneurs (including intrapreneurs, innovators, and champions) are less likely to call themselves entrepreneurs. This contrasts with results from the expert panel study, in which the items included in the Corporate Entrepreneur scale (innovator and intrapreneur, in particular) are among the highest ranked entrepreneurial behaviors. Although it is true that the questions for the business accomplishments were posed somewhat differently for the expert panel and alumni respondents, there is nevertheless a significant divergence of opinion between the two groups regarding what is considered entrepreneurial.

The negative contribution of Turnaround Artist activity on Entrepreneurial Self-Image in the regression analyses, reported in Table 7, must be carefully interpreted. Turnaround Artist activity is included in the analysis although it is fairly strongly correlated with the Acquirer variable ($r=.36$, $P<.01$) and both load on the same factor in the seven-factor solution derived from the factor analysis. Furthermore, although the t value for Turnaround Artist is statistically significant in the regression analysis, note that the zero-order correlation coefficient is practically zero. One explanation for this may be that because both items are included in the regression equation, the common effect is controlled for (i.e., Turnaround Artists who are also Acquirers). Hence, the residual effect of Turnaround Artist may represent in particular the (nonowner)/manager in a larger firm who comes in to professionalize the firm and, accordingly, views him- or herself as the antithesis of the entrepreneur.

Another major thrust in this study is the examination of gender effects on Entrepreneurial Self-Image. Although small in absolute terms, the regression analyses do provide partial evidence that Gender affects Entrepreneurial Self-Image indirectly by way of the business accomplishments of those individuals (in particular, through Small Business Person activity). Regression analyses provide more convincing evidence of a direct effect of Gender on Entrepreneurial Self-Image, i.e., Entrepreneurial Self-Image is influenced directly by Gender, independently of the business accomplishments reported by respondents.

In addition to the effects of certain business accomplishments and gender, the regression results reveal significant effects of certain human capital variables in the prediction of Entrepreneurial Self-Image, although in a somewhat unexpected direction. Both the level of education and possession of a business degree contribute negatively to Entrepreneurial Self-Image, even after controlling for the effect of Small Business Person activity. This is a counterintuitive finding as it would be expected that knowledge (whether general or specific) contributes positively to the self-awareness of individuals. Given the attenuation in the range of the education level variable, it should be kept in mind that the negative effect of education level on entrepreneurial self-perception primarily reflects the difference between people with a Bachelor's and Master's degree and may be an artifact of the particular institution under review. More specifically, for the entire period to the administration of the survey, the university from which the alumni were drawn had primarily offered entrepreneurship courses at the undergraduate (Bachelor's) level. This may have increased the awareness of entrepreneurship disproportionately among undergraduates, thus skewing the results. It may also be that the negative effect of Education Level (as well as Business Degree) is related to the fact that those pursuing a more advanced or specialized degree may view working in a larger firm more prestigious, and that furthermore, they might view the term,

“entrepreneur” as connoting work at a smaller firm, and thus as less professional and/or less prestigious.

10.2. Directions for future research

This study provides a starting point for (follow-up) studies investigating and explaining entrepreneurial self-perception. The exploratory nature of this study requires that we share our views on its limitations with the reader. We have also made suggestions for future research that would help to remedy these limitations and to build further on our findings.

The present study uses a nonrandom sample to test the hypotheses. Respondents tend to be older (with an average age of 50 years), more highly educated (with almost 95% having completed the equivalent at least four years of university study), and more likely to view themselves as entrepreneurs, than the population at large. Furthermore, all respondents attended the same university for at least one degree program, which may also influence their entrepreneurial self-perceptions. Hence, although in our study, older respondents, respondents with a Bachelor’s degree (rather than Master’s degree), and respondents with a nonbusiness degree (rather than a business degree) are more likely to describe themselves as entrepreneurs, generalizing these findings to a broader population would be inappropriate without additional research using a random sample with a more representative age distribution, different educational backgrounds, and diverse locations of study.

The operationalization of the variables in this study is fairly simply conceived. The dependent variable, Entrepreneurial Self-Image, is based on a single item. In addition, the five-point scale used to measure Entrepreneurial Self-Image in the alumni study mistakenly uses the word “possibly” instead of “probably” as the fourth point of the scale (see [Table 3](#)). Future research can also benefit from direct measurement of intervening variables, such as perceived risk-taking, creativity, and innovation, to explain the linkages found between business accomplishments and entrepreneurial self-perception. This may occur either through direct measurement of these concepts or through a more detailed exploration of the various activities regarding, for example, the uniqueness of the company started or the changes made once a company is acquired. Business accomplishments can also be measured in greater detail with respect to size, growth and profitability of the enterprises founded, acquired, and/or managed by respondents.

Based on the methodology used in the present study, which compares current self-perceptions on present as well as past behavior, it may be argued that the causality between business accomplishments and self-perception can be in either direction. However, due to the design of the study, business accomplishments had to have taken place prior to completion of the questionnaire. Therefore, it is plausible to assume that, at least partially, these business accomplishments were the cause of the particular level of entrepreneurial self-image rather than the reverse. However, future research using a longitudinal research design could establish the direction of the causality more firmly.

Future research may also want to explore the relationship between the perceptions of the scholarly community and the general business community regarding their definitions of

entrepreneurship in more detail.²⁵ Moreover, the culture dependency of the self-concept may limit the extent to which the results of the present study, using American alumni data, can be translated to countries or regions outside the United States.²⁶ For instance, the divergence of opinion of what is considered entrepreneurial between the expert panel and alumni respondents, may also be attributed to the fact that the expert panel consists of mainly European raters, whereas the alumni respondents were all from the United States. Hence, it may be interesting for future research to compare entrepreneurial self-perceptions in different cultural settings.

In summary, in spite of limitations due to the small, nonrandom sample, results from this study point toward fruitful directions for future research on entrepreneurial self-perception. In particular, a more representative spread of age, education, location, and culture may provide the basis for broader generalization of results. In addition, the introduction of a more fully developed list of business accomplishments (e.g., innovative versus non-innovative start-ups), the use of a longitudinal design to test for the direction of causality, and direct tests of intervening variables, may provide a better means to explain the linkages found in this study between both business accomplishments and gender with the entrepreneurial self-perception.

10.3. The gender effect and its implications

The research results in this study clearly demonstrate a gender effect on Entrepreneurial Self-Image. That is, even when controlling for a broad range of business accomplishments, age, and educational level, women are less likely than men to perceive themselves as entrepreneurs. The present study fails to control for firm characteristics, such as firm size, growth rate and/or growth orientation, and sector, all of which have demonstrated gender differences in past research. Hence, there may be more subtle differences in business accomplishments not captured in our research. In addition, the present research is based on a nonrandom sample drawn from one university. However, assuming for the moment that there is indeed a residual gender effect that can be replicated in other research, it is important to find out what this means and what practical implications such an effect may have.

Past research on gender and management indicates that women tend to underrate their skills or performance as compared to men (Wohlers and London, 1989; Lindeman et al., 1995). As mentioned earlier, this underrating may be attributed to the fact that women often do not take credit for success, or are simply more ‘modest’ in describing their accomplishments.

²⁵ It is possible that there is a lagged effect, in that the meaning of the term, as given by scholars, influences the general business community and/or society-at-large, but with a time lag so that we can begin to expect notions, such as corporate entrepreneurship, to enter the community’s vocabulary in increasing frequency based on their usage in scholarly circles. But then, we are acknowledging that scholars are constructing the concept of entrepreneurship, consistent with the *social constructionist* view of reality rather than merely observing that reality and measuring it (see Healy and Perry, 2000).

²⁶ Evidence of cultural differences regarding the self-concept is presented by Abe et al. (1996) who distinguish between independent and interdependent cultures. See also Markus and Kitayama (1991) and Triandis (1989).

An alternative interpretation of the results is that the term entrepreneur may have a male connotation for some women. Hence, although some women may value their efforts equally and carry out similar accomplishments, they may not view themselves as “entrepreneurs”. For example, as a faculty advisor of an entrepreneur’s club at a large Midwestern U.S. University, one of the authors noted that for a period of years, in spite of a large female student population, overall, almost no female students were active in the Entrepreneurs’ Club. After changing the name of the club to Future Business Owners Club, more female students began attending meetings. Other service programs, university, government, and other non-profit programs that are intended to provide services to both genders (and/or women in particular) may want to consider more carefully the way in which they market their programs. More specifically, whereas the term entrepreneur is a popular term used to describe programs aimed at serving small business owners or managers, its use may actually turn away certain groups of women business owners who are targets for these programs, and thus reduce the effectiveness of some of the very programs aimed at providing them with more support.

11. Conclusion and summary

The main goal of this study is to shed light on the various interrelationships between business accomplishments, gender, and entrepreneurial self-perception. The findings, taken together, support the explanatory power of certain Business Accomplishments to predict Entrepreneurial Self-Image, in line with Bem’s self-perception theory. In particular, the greater part of the variation in Entrepreneurial Self-Image can be explained by the following business accomplishments: starting a business from scratch (Founder), owning the major part of a business (Owner) and/or managing a small to medium sized business beyond start-up (Runner). Gender, though weaker in its explanatory power, also appears to provide added explanation to the model, in particular through a direct effect on Entrepreneurial Self-Image, but with a likely indirect effect (through Business Accomplishments) as well. More specifically, we find that women tend to select different activities than men, choosing less frequently those activities both genders view as entrepreneurial. In addition, women are less likely to perceive themselves as entrepreneurs, independently of activities undertaken. It may be that women also value the same business accomplishments differently than men do, although the present study cannot determine the extent of this third gender effect. Certain control variables also affect Entrepreneurial Self-Image but in an opposite direction from what was predicted. For instance, respondents with a Bachelor’s degree and without a business degree are more likely to view themselves as entrepreneurs than those with a Master’s or a business degree.

In summary, although some of the gender effects are small in absolute terms, the study does demonstrate the importance of including gender as an explanatory variable in general research questions of interest in the field of entrepreneurship. Finally, at a more practical level, if these gender differences hold up in follow-up research, different guidelines for attracting, supporting, and counseling female entrepreneurs and small business owners should be considered by directors of small business service centers and other service providers.

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