

Entrepreneurial Competencies of Women Entrepreneurs Pursuing Business Growth

Abstract

Purpose – Entrepreneurial competencies have an impact on firm performance and growth. This article reports empirical research into the entrepreneurial competencies reported by female entrepreneurs who are committed to the growth of their business.

Design/methodology/approach – A questionnaire based survey of female entrepreneurs in England and Wales was conducted. The core of the questionnaire was a list of entrepreneurial competencies compiled from previous theoretical and empirical frameworks, coupled with Likert scales through which the entrepreneurs were invited to rate their ability in relation to each competency. PCA was conducted in order to identify clusters of competencies, and to identify the competencies that loaded onto those clusters.

Findings – Four main clusters of competencies were identified: Personal & Relationship, Business & Management, Entrepreneurial, and Human Relations Competencies. Whilst previous research on the competencies of entrepreneurs has identified the two clusters of Business & Management, and Entrepreneurial competencies, the competencies in the other two clusters have received less attention and have not been identified as clusters. Arguably, competencies in these clusters are valued more highly by female entrepreneurs than by their male counterparts.

Originality/value – This study is the first to offer a comprehensive analysis the competencies of female entrepreneurs. By identifying four key groups of competencies, the research provides the basis for an agenda for focus in education, and development of female entrepreneurs. More specifically, the Female Entrepreneur Competence (FEC) Framework generated by this research can be used to support female entrepreneurs in the self-assessment of their competencies.

Keywords - Entrepreneurial competencies, Female entrepreneurs, Business growth

Research Paper

Introduction

There is widespread acknowledgement that the success, performance and growth of an SME is heavily dependent on the competencies of the entrepreneur. The management structure and independence of a small enterprise places the entrepreneur in a critical position in the business operation (Bird, 1995; Capaldo et al, 2004; Chandler and Jansen, 1992; Olson and Booker, 1995). Further, some researchers have suggested that an understanding of competencies that are exercised by the entrepreneurs leading successful small businesses can be used to support the development of those competencies, and has potential, to, in turn, drive business growth (Churchill and Lewis, 1983; Low and Macmillan, 1988).

Whilst entrepreneurial competencies are important for all SME's, the imperative to develop the understanding of such competencies in the context of female-led businesses is particularly strong. There are growing numbers of self-employed women in developed economies such as the UK and the US (Carter and Shaw, 2006), and many of these businesses are highly dependent on the owner and her skills (Lerner et al., 1997). In addition, there is a widespread assumption that many of these businesses are life-style businesses and as such their commitment to growth may be relatively low (Wiklund et al., 2003). Nevertheless, governments and other agencies, in pursuit of economic growth (or in these times avoidance of recession) are looking to SME's to play a significant role (ACCA, 2010). These agendas apply as much to those businesses led by women as to those led by men.

Although entrepreneurial competencies are seen as important to business growth and success, according to Brinckmann (2008) the discussion of competencies in the entrepreneurial literature is in its early stages. Indeed, whilst over the years there have been some notable studies that have sought to examine the skills and competences of entrepreneurs (e.g. Chandler and Jansen, 1992; Markman et al., 2002), they are few in number, and each is to some extent context dependent. In particular, only one or two studies (e.g. Lerner and Almor, 2002) have specifically focussed on businesses owned by women, although there are other studies that have discussed women's competence in specific areas, such as financial management and management competency (e.g. Carter et al., 2006; Lerner et al., 2007; Walker and Webster, 2006).

The structure of the remainder of this article is as follows. First, a literature review argues the case for the importance of female entrepreneurship and the role of competencies in its development, and reviews previous theory and research on entrepreneurial competencies. Next, the methodology for this research is outlined, including the questionnaire design, data collection and analysis, respondent profile, and data analysis. The Findings section which follows presents the result of the PCA analysis, and the Female Entrepreneurial competencies scale that emerges. Finally the Discussion and conclusion section, summarises the contribution of this research, and offers recommendations for practice and for further research.

Literature Review

The importance of female entrepreneurship and the role of competencies

In 2010, 104 million women in 59 economies which represent more than 52% of the world's population and 84% of world GDP embarked on new venture creation and development. These self-employed women comprise between 1.5 percent and 45.4 percent of the adult female population in their respective economies. (Global Entrepreneurship Monitor, 2012). Accordingly, women-owned businesses make an increasingly important contribution to economies. Many of these businesses are SMEs (Hart and Levie, 2010), and which means there is considerable concern regarding support for new venture creation and business growth (ACCA, 2010). In the USA, the Women's Business Act 1988 put in place long-term infrastructure to support women's enterprise development. Subsequently women's business ownership has increased significantly. This growth has been aided by Federal recognition of its importance and a sustained commitment to its development over a 30-year period. Unfortunately such initiatives are less in evidence in other countries.

Frequently, businesses owned by women are privately owned and depend largely on the centrality of the owner and her skills or competencies (Lerner et al., 1997). Entrepreneurial competencies have been identified as a specific group of competencies relevant to the exercise of successful entrepreneurship. Such entrepreneurship is often associated with the survival and development of small and new businesses (e.g. Colombo and Grilli, 2005; Nuthall, 2006). Interest in entrepreneurial competence derives from the supposed link between competencies

and the birth, survival and growth of a venture (Bird, 1995; Baum et al., 2001). There is evidence to suggest that understanding of the competencies in small businesses will support the development of competence, and, will, in turn, have consequences for successful business growth (Churchill and Lewis, 1983; Low and Macmillan, 1988). Lerner and Almor (2002), in one of the few studies to examine a range of entrepreneurial competencies in women, found evidence of the link between an entrepreneur's skills and venture performance and growth.

Most of the previous studies on the entrepreneurial competencies of female business owners have focussed on specific aspects of their competencies or skills, and specifically consider women's competencies relative to those of their male counterparts. For example, there is evidence that women business owners tend to feel that social adroitness and interpersonal skills are their strongest personal assets (Birley et al., 1987). On the other hand, there is a considerable body of research that suggests that women may be weaker in financial skills than men (Collerette and Aubry, 1990; Stevenson, 1986). More specifically, women frequently rate themselves as less competent in financial skills than do men (Brush, 1992; Chaganti, 1986).

In a review of the literature, Jennings and Cash (2006) note that there is a solid base of empirical research demonstrating that for the most part male and female business owners do differ in some fundamental ways with respect to their: social and human capital; motivations; goals and success criteria; growth orientations; strategic choices; and, use of financial capital. Women business owners may be disadvantaged in their access to various entrepreneurial capitals, given their personal backgrounds and employment experiences and the socio-economic and cultural context in which their businesses operate (Carter and Shaw, 2006). Entrepreneurial competencies comprise those that are grounded in components that are deeply rooted in a person's background (traits, personality, attitudes, social role and self-image) as well as those that can be acquired at work or through training and education (skills, knowledge and experience) (Man and Lau, 2005).

Accordingly, there are grounds for further exploration of the unique competencies exercised by female entrepreneurs (Brinckmann, 2008). Indeed, recent reviews of the literature have acknowledged that many gaps exist in the knowledge regarding female

entrepreneurs and their businesses (Carter et al., 2001; Carter, 2006; Greene et al, 2003). Relevant to this study there is a distinct gap in the understanding of competencies in female entrepreneurial businesses.

Researching entrepreneurial competencies

Bird (1995) suggests that entrepreneurial competencies are defined as underlying characteristics such as specific knowledge, motives, traits, self images, social roles and skills which result in venture birth, survival and/or growth. Man et al. (2002) defined entrepreneurial competencies as the total ability of the entrepreneur to perform a job role successfully. According to the resource-based theory of the firm, the value creation process of firms is strictly related to the capability of managers in acquiring and developing resources (Barney, 1991; Grant, 1991). In summary, then, there is a consensus that entrepreneurial competencies are carried by individuals, who begin and transform their businesses, and a widespread recognition that the range of skills and competencies required to run a small firm are qualitatively as well as quantitatively different from those needed in larger organisations (Johnson and Winterton, 1999; Fuller-Love, 2006; Walker and Webster, 2006). This is at least in part because in an entrepreneurial context the focus is on the individual (Hunt and Meech, 1991).

Whilst comprehensive studies of the competencies of female entrepreneurs are rare, there is more research into entrepreneurial competencies in general. We undertook a comprehensive review of this research in an earlier article (the authors, 2010). Here we identify some of the most significant studies, and reflect on the different approaches adopted in previous studies to the measurement of entrepreneurial competencies.

One of the recurrent distinctions in the literature on the entrepreneur's competencies is that between management competencies or skills and entrepreneurial competencies or skills (Smith and Morse, 2005). For example, in one of the few studies on women, Lerner and Almor (2002) in their study of 220 female Israeli entrepreneurs found that managerial skills (finance, human resource management, operations and strategic management) and entrepreneurial skills (innovation and marketing) were separate factors. Chandler and Hanks (1994)'s research is based on the assumption that

entrepreneurs needed to be competent in two key roles i.e. entrepreneurial (recognise and envision taking advantage of opportunity) and managerial (acquire and utilise resources to co-ordinate the business interest and activities); their research in manufacturing businesses in Pennsylvania measured the two areas separately. In a seminal work in the field, Chandler and Jansen (1992) researched a sample of companies in the State of Utah, identifying entrepreneurial, managerial, and technical functional functions as the three roles that founders must competently enact in order to be successful. They suggested that effective performance in the entrepreneurial role requires the founder to have the ability to recognise business opportunities and the drive to see firms through to fruition. Effective execution of the managerial role requires conceptual, interpersonal and political competence. To be competent in the technical role they state that founders must be able to use the tools or procedures required in their specialised field.

Other studies have also sought to understand the differentiation between management and entrepreneurship. For example, Shane and Venkataraman (2000) suggest that opportunity recognition and exploitation are focal concepts in entrepreneurship which differentiate entrepreneurship from management. Bird (1988), among others, notes the entrepreneurs intentions (e.g. persistence, perseverance) as being a key characteristic for developing a new venture.

Most researchers agree that managerial and entrepreneurial competencies are multidimensional constructs. In their overview of the competencies literature, Smith and Morse (2005) observed that there are two broad themes in managerial competencies, functional competencies such as marketing and finance, and organisational competencies such as the skills related to organising and motivating, personal skills and leadership. Reuber and Fischer (1994) suggest sixteen areas of expertise including general management, strategic planning and marketing. In a similar functional approach, Orser and Riding (2002) developed 25 competency scales, which were grouped into nine functional areas. Man et al (2002) in their process/behavioural approach based on a review of previous empirical studies identified six competency areas under entrepreneurial competencies; these were opportunity, relationships, conceptual, organizing, strategic, and commitment competencies. Baum (1995) formed nine entrepreneurship competencies: knowledge,

cognitive ability, self-management, administration, human resource, decision skill, leadership, opportunity recognition, opportunity development, and organization skill. Man (2001) identified the following ten areas of entrepreneurial competencies: opportunity, relationship, analytical, innovative, operational, human, strategic, commitment, learning and personal strength competencies.

One of the objectives of the development of classifications of entrepreneurial competencies is to be able to measure such competencies. It is important to observe that the approaches taken by the various researchers to measuring competencies are varied, and are underpinned by different assumptions. Chandler and Jansen (1992) and Markman et al (2002) take a similar approach, explicitly taking an antecedent perspective by attempting to delineate key knowledge or abilities thought to reflect entrepreneurial and managerial competencies, based on reviews of literature, and then having respondents self-assess their own level of competence, or level of agreement with a competence related statement. Other researchers, focussing on the relationship between entrepreneurial cognitions and entrepreneurial decisions and their outcomes, have taken a process perspective in measuring constructs related to entrepreneurial competence (Mitchell et al, 2002; Shepherd, 1999). In a script-cue recognition methodology adapted from Read (1987), Mitchell et al (2002) measured arrangement, willingness, and ability cognitions. This approach, based on expert information processing theory, used a nominal scale where respondents must agree or disagree with given statements. Finally other researchers, such as Lerner and Almor (2002) and Reuber and Fischer (1994), have chosen a performance based perspective by identifying key tasks and then assessing skill acumen; the assessments were subjective self-perceptions.

In summary, over the last two decades there has been a number of investigations in different contexts that have sought to generate lists of entrepreneurial competencies, with varying levels of categorization. Some researchers have used alternative terms such as skills or expertise, but their research generates findings that are relevant to the general field of entrepreneurial competencies. In a previous article (the authors, 2010) summarised the competencies generated by previous researchers in entrepreneurial competencies, and this list was used as the basis for the design of the research instrument for this study, where the focus is specifically on female entrepreneurs.

Methodology

Questionnaire design

A questionnaire-based survey was conducted in order to collect data about female entrepreneurs, their businesses and competencies. A survey was selected as the research strategy for two main reasons. First, questionnaire based surveys have been the main tradition in research in entrepreneurial competencies, and therefore adopting this approach makes it easier to make comparisons between this study and previous studies. Secondly, a survey allows the researcher to enlist a large number of respondents, including respondents with businesses of different sizes, and in different sectors (Saunders et al., 2003).

The questionnaire had three sections:

1. Profile of the entrepreneur (age, years of business experience, qualifications, family history of enterprise)
2. Profile of the entrepreneur's business (annual sales, number of employees, business sector, legal status, stage of business development)
3. Entrepreneurial competencies

The key section was the list of entrepreneurial competencies. The authors (2010) generic inventory of competences for entrepreneurs of small and medium sized businesses that embraced both entrepreneurial and managerial competencies was used as a basis for this study. Studies which focus on identifying and exploring entrepreneurial competencies are limited, however those who have researched this area have requested respondents to self assess their own competencies (Lerner and Almor 2002, Chandler and Hanks 1994, Chandler and Jensen 1994). This approach was therefore adopted in this study.

Some very similar statements of competencies were consolidated, but most were left as separate items in order to allow the most important articulations to surface in the analysis. At the top of the list of competencies respondents were invited to rate their ability from a range of competencies presented. Competencies were measured using a five point Likert scale ranging from 1 = weak to 5= excellent. Others, for example Lerner and Almor (2002) and Chen et al. (1998) have also used a self reported, five

point Likert scale when measuring aspects of entrepreneurial and managerial competencies.

Particular care was taken with the wording, layout, and presentation of the questionnaire, taking into account that the respondents would not have any recourse to the researcher during self-completion. In particular, the questionnaire was subjected to a two stage piloting process, that involved piloting with other researchers, and piloting with a selected group of female entrepreneurs. As a result of the piloting, some minor adjustments were made to wording and layout.

Questionnaires were distributed online as an e-mail attachment. An online survey was preferred over a postal survey because it was cheaper and quicker to conduct, non-responses are easier to detect, and it is possible to access larger research sample groups and difficult to contact populations. Following the advice of Salant and Dillman (1994) an informative and well presented covering e-mail was sent with each survey which explained the objectives and importance of the research. In order to increase the response rates, several tactics were adopted. These included: emphasising respondent's importance to the research, capitalising on the sense of community amongst female entrepreneurs, and, follow up mailings to chase non-respondents.

Data collection and analysis

Questionnaires were distributed to a convenience sample. Convenience sampling is useful where it is otherwise difficult to elicit a sufficient level of response (Bryman and Bell, 2007). Initial attempts to elicit responses from the SMEs listed on specific databases met with only limited success. This was partly due to the volatility of the SMEs leading to dated contact details in all of the several databases of SMEs that were investigated for the purpose of this research, and partly due to the difficulty of identifying those businesses that were owned by women from such lists. Participants were identified through women's networks based in England and Wales. Many of the networks were identified by using female entrepreneur support programmes and associations such as PROWESS. In those instances where networks had publicly available mailing lists, questionnaires were e-mailed direct to the participants, but on other occasions the questionnaires were e-mailed through the agency of the network coordinators.

Two hundred and ten useable questionnaires were collected. Data were entered into SPSS for descriptive and Principal Component Analysis (PCA) analysis.

Findings

Respondent Profile

Respondents' profiles in terms of their age, education, years of business experience, sector, and age of business are presented below. Comparison with other statistics and studies, suggest that on the basis of these variables the sample in this study can be regarded as representative of female entrepreneurs in England and Wales.

Regarding the age of respondents, the highest responding age group among respondents was between 45 and 54, followed closely by those aged 36 to 44. Other studies such as the GEM report (Hart and Levie, 2010) have noted that these are the most entrepreneurially active age groups. Overall, female entrepreneurs within this sample were mostly highly educated with 33% having a professional qualification and 46% a degree. This is consistent with Carter's (2006) assertion that women business owners increasingly have higher levels of educational attainment.

Most respondents from the sample reported some years of business experience prior to setting up their businesses, with only 17% of the respondents indicating that they had no previous experience. This is not consistent with previous research which has suggested that many female business owners lack previous entrepreneurial and managerial experience (Brush, 1992) and this has an effect to on their ability to survive (Daniel, 2004; Fuller-Love, 2006; Srinivasan et al., 1994).

As in previous studies of female entrepreneurs there was a preponderance of businesses in the services sector (78%). Data collected by the Small Business Service (2003) showed 48% of female entrepreneurs own businesses in the service sector. Birley (1989) suggests that the concentration of women in these sectors is not surprising given that they represent traditional areas of employment for women. Retail and service industries are categorised as female typed, with manufacturing,

technology and construction as male type (Fuller-Love, 2006; Walker and Webster, 2006).

Studies have shown a tendency for female controlled businesses to be relatively young (Brush and Hisrich, 1991; Fuller-Love, 2006; Rosa et al., 1996). The data collected in this study also shows that many of the businesses were young. 64% of all businesses were under three years old and only 18% had been operating for between four and six years.

Identification of clusters of competencies

Factor analysis was used to determine the smallest number of factors to best represent the inter-relationships among the set of self-reported competencies of the female entrepreneurs, and to identify the competencies that loaded onto the key factors. Factor analysis has been chosen since it is suitable for identifying correlation among variables in complex sets of data (Pallant, 2007).

Prior to conducting PCA the suitability of the data for this test was established by various means. The Cronbach alpha coefficient was calculated; at 0.98 this confirmed the reliability of the scale within the sample (Bryman and Bell, 2007). Both Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were conducted to measure sampling adequacy. The KMO value was 0.9, which is greater than the recommended value of 0.6 (Kaiser, 1974). Bartlett's test is statistically significant at the $p < 0.01$ level (Barlett, 1954).

A scree plot was used to identify the number of factors; this resulted in the identification of four factors. Table 1 lists the eigenvalues associated with these four factors, and the variance in self-reported competencies explained by each of the factors. The selected four components explain a total of 46% of the variance. More specifically, Factor 1 explains 14 % of the total variance, factor 2, 13 %, factor 3, 10 %, and factor 4, 10 % of the total variance.

Insert Table 1

Next the factors were rotated using Varimax with Kaiser Normalization as recommended by Pallant (2007) to generate the component matrix shown in Table 2. The component matrix shows a clear structure with meaningful strong loadings for each of the four components, but with some items loading onto more than one component. This is not surprising given that the research instrument was constructed using an extremely wide range of competencies from earlier studies, with some potential repetition, coupled with the fact that there is good reason to believe that the boundaries between different groups of competencies are permeable.

Insert Table 2

All items with a correlation at 0.5 or above were selected for presentation in the Female Entrepreneurial Competencies Framework shown in Table 3. Some items have been slightly re-worded for clarity and succinctness. The factors are:

- Factor 1 – ***Personal and Relationship Competencies*** – Eleven items cluster to form the first factor. This factor includes an interesting mix of communication and relationship building skills, together with a number of personal traits that are generally associated with the internal drivers, motivators and traits of the entrepreneur.
- Factor 2 – ***Business and Management Competencies*** – Eight items cluster to form this factor. The factor includes competencies relating to a typical range of business tasks such as budgeting and managing finance, systems, planning, and business operations.
- Factor 3 – ***Entrepreneurial Competencies*** – Nine items cluster to form this factor. This factor includes a range of competencies typically associated with the entrepreneur including innovation, risk taking, creativity, visioning, and idea generation.
- Factor 4 – ***Human Relations Competencies*** - Nine items cluster to form this factor. The items in this factor are an interesting mix of those skills and competencies typically shared by a Human Relations function, and line management in larger businesses. They include hiring, staff development, leadership, employee relations and motivating staff.

Insert Table 3

Discussion

This study has contributed to the limited previous research on female entrepreneurial competencies. Specifically, it has generated a framework that shows female entrepreneurial competencies to cluster into four groups: personal and relationship competencies, business and management competencies, entrepreneurial competencies, and human relations competencies.

The FEC Framework produced in this research is comparable with other frameworks of classifications of entrepreneurial competences generated by earlier researchers, although it is important to remember that most of these earlier classifications looked at entrepreneurs in general, and, as such privileged male entrepreneurs. One of the main precursors to this study in that it also focussed on women was the study by Lerner and Almour (2002). In a similar way to this study, they used factor analysis to establish that entrepreneurial skills and managerial skills were separate factors. This is consistent with earlier studies such as those by: Chandler and Hanks (1994) who assumed two categories of skills were required for the entrepreneurial role and the management role, respectively; and Chandler and Jansen (1992) who proposed three categories of competencies or skills, entrepreneurial, management, and technical function. This last category does not arise in this research because we did not specifically explore any sector or profession specific skills.

On the other hand, it is important to note that this study did not only generate the two factors associated with entrepreneurial competencies and business and management competencies, but also surfaced two other clusters of competencies, relating to personal and relationship competencies, and human relations competencies, respectively. Previous commentators and evidence have suggested that one of the areas in which female entrepreneurs may outshine men is in their abilities to build strong inter-personal relationships (Birley et al., 1987; Daniel, 2004; Fuller-Love et al., 2006), so perhaps it is not surprising that these two additional clusters emerge in this study.

However, other studies have generated frameworks that include a larger number of clusters of competencies than previous studies focusing on female entrepreneurs. For example, Baum (1995) identified nine entrepreneurship competencies, whilst Orser and Riding (2002) developed 25 competency scales, which were grouped into nine functional areas. Perhaps the most interesting study for our purposes is that conducted by Man et al (2002). They identified the following ten areas of entrepreneurial competencies: opportunity, relationship, analytical, innovative, operational, human, strategic, commitment, learning and personal strength competencies. All of these are variously evident in the items in our FEC Framework, but they cluster differently. This may be because the competencies for female entrepreneurs do indeed have different clusters, or may be due to the rather longer list of competencies included in our research.

Ultimately, the diversity of approaches to the construction of scales, classifications and frameworks of entrepreneurial competence it is difficult to make comparisons, and therefore difficult, on the basis of this research to offer a definitive answer as to whether the entrepreneurial competencies of female entrepreneurs are essentially different to those exercised by men. Nevertheless, we draw attention to our identification of the two key clusters of competencies in this research: Personal Conceptual & Relationship Competencies and Human Relations Competences, which seem to lend more emphasis to communication and relationship building (including its contractual and leadership dimensions) than they have previously received.

Conclusions

Entrepreneurs and the organisations that support and advise entrepreneurs are increasingly paying attention to the issue of knowledge, skills and competencies as they acknowledge the importance of the development of these for competitiveness in the knowledge-based economy. This research proposed the Female Entrepreneur Competence (FEC) Framework which encompasses four clusters of competencies, personal and relationship competencies, business and management competencies, entrepreneurial competencies, and human relations competencies.

One of the key findings and conclusions from the 2012 GEM study of women entrepreneurs is that if women perceive that they have the capabilities or

competencies for entrepreneurship, they are more likely to believe that entrepreneurial opportunities exist. Accordingly, the FEC framework can be used to profile competencies and to help women to understand their strengths and weaknesses in entrepreneurial ventures. In addition, it can be used as a framework for develop the educational support for female entrepreneurship. In the longer term, developing entrepreneurial skills among entrepreneurs contributes to profitability (Cushion, 1996) and growth (Gray, 1997). Thus, the key beneficiaries of this research include: government in their pursuit of economic development particularly for training purposes and, female entrepreneurs themselves in the pursuit of business success.

We add our voice to others before us who have suggested that further research into female entrepreneurial competencies would be a valuable basis for improving understanding of women and their businesses, and would support the development of training and other relevant initiatives that could drive the performance and growth of women-owned SMEs, and thereby enhance their contribution to the economy.

Finally, it is possible to develop an extensive agenda for further research in this area, but key areas for consideration are:

1. Replication and development of this exploratory study in different contexts, including studies that support comparisons between men and women, explore competencies at different stages in the growth of a business, and embrace functional competencies relating to the products and services in different sectors.
2. The development of models that further establish the relationship between entrepreneurial competencies, and business performance and growth.
3. Qualitative research to generate a greater understanding of how female entrepreneurs develop their competencies, how competencies interact, and how they are deployed to achieve business success.

References

ACCA(2010) Accelerating recovery: promoting the SME sector's role in rebuilding prosperity in the UK, available at:

http://www.acca.co.uk/pubs/general/activities/library/small_business/sb_pubs/tech-tp-ar.pdf (accessed 20 October 2011)

[Barney](#), J. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No.1, 99–120.

Bartlett, M.S. (1954), "A note on the multiplying factors for various chi square approximations." *Journal of the Royal Statistical Society* Vol.16 (Series B), 296-298.

Baum, J.R., Locke, E.A., Smith, K.G. (2001), "A multidimensional model of venture growth", *Academy of Management Journal*, Vol.44 No.2, 292-303.

Bird, B. (1988), "Implementing entrepreneurial ideas: the case for intention", *Academy of Management Review*, Vol.13 No.3, 442-453.

[Bird](#), B. (1995), "Towards a theory of entrepreneurial competency", *Advances in Entrepreneurship, Firm Emergence and Growth*, Vol.2, 51–72.

Birley, S. (1989), "Female entrepreneurs: are they really any different?", *Journal of Small Business Management*, Vol.27 No.1, 32-37.

Birley, S., Moss, C. and Sanders. P. (1987), "Do women entrepreneurs require different training?", *American Journal of Small Business* Vol.12 No.1, 27–35.

Brinckmann, J (2008), *Competence of Top Management Teams and the Success of New Technology-Based Firms: A Theoretical and Empirical Analysis Concerning Competencies of Entrepreneurial Teams and the Development of their Ventures*, Gabler Publishing, Weisbaden

Brush, C. G. (1992), "Research on women business owners: past trends: a new perspective and future directions", *Entrepreneurship Theory and Practice*, Vol.17 No. 4, 5-30.

Bryman, A. and Bell, E. (2007), *Business Research Methods*, 2nd ed.: Oxford University Press, New York

Carter S, and Shaw, E (2006) *Women's Business Ownership: recent research and policy developments*. Report to the Small Business Service. Available at: <http://tna.europarchive.org/20081112122150/http://www.berr.gov.uk/files/file38330.pdf> (accessed 20th October 2011)

Carter, S. Wilson, F. Shaw, E. and Lam, W. (2006), "Gender, entrepreneurship and business finance: investigating the relationship between banks and entrepreneurs in the UK", in: Brush, C., Carter, S., Gatewood, E. Greene, P. and Hart. M. (Eds.), *Growth-Oriented Women Entrepreneurs and Their Businesses*, Edward Elgar, Cheltenham, pp.373-392.

Capaldo, G., Iandoli, L. and Ponsiglione, C. (2004), "Entrepreneurial competencies and training needs of small firms", paper presented at: 14th Annual International Entrepreneurship Conference.

Chaganti, R., (1986), "Management in women-owned enterprises", *Journal of Small Business Management*, Vol.24 No.4, 19-29.

[Chandler](#), G.N. and Hanks, S.H. (1994), "Founder competence, the environment, and venture performance", *Entrepreneurship Theory and Practice*, Vol.18 No.3, 77–89.

[Chandler](#), G.N. and Jansen, E. (1992), "The founder's self-assessed competence and venture performance" *Journal of Business Venturing* Vol.7 No.3, 223–236.

Chen, C.C., Green, P.G. and Crick, A. (1998), "Does entrepreneurial self-efficacy distinguish entrepreneurs from managers?" *Journal of Business Venturing*, Vol.13, 295–316.

[Churchill](#), N.C. and Lewis, V.L. (1983), "The five stages of small business growth", *Harvard Business Review*, Vol.61 No.3, 1–12.

Collerette, P. and Aubrey, P. (1990), "Socio-economic evolution of women business owners in Quebec", *Journal of Business Ethics* Vol.9 No.2, 417-422.

Colombo, M. G. and Grilli, L. (2005), "Founders' human capital and the growth of new technology-based firms: a competence-based view", *Research Policy*, Vol.34 No.6, 795-816.

Daniel, T.A. (2004), "The exodus of women from the corporate workplace to self owned businesses", *Employment Relations Today*, Vol.30 No.4, 55–61.

Fuller-Love, N. (2006), "Management development in small firms", *International Journal of Management Reviews* Vol.8 No.3, 175-190

Fuller-Love, N., Lim, L. and Akehurst, G. (2006), "Guest editorial: female and ethnic minority entrepreneurship", *International Entrepreneurship and Management Journal*, Vol.2 No.4, 429–439

Grant, R.M. (1991), "The resource based theory of competitive advantage: implications for strategy formulation", *California Management Review*, Vol.33 No.3, 114-135.

Greene, P.G., Hart, M.M., Gatewood, E.J., Brush, C.G. and Carter, N.M. (2003), *Women Entrepreneurs: Moving Front and Center: An Overview of Research and Theory*. Coleman White Paper Series. Available at: <http://www.usasbe.org/knowledge/whitepapers/greene2003.pdf> (accessed 20 October 2011)

Hart, M. and Levie J. (2010), Global Entrepreneurship Monitor: United Kingdom 2010 Monitoring Report. GEM, Aston. Available at: http://www.gemconsortium.org/download/1319186728574/GEM%20UK%202010_Final.pdf (accessed 20 October 2011)

Hunt, C. and Meech, L. (1991), "Competencies and human resource management in the Department of Immigration, Local Government and Ethnic Affairs", *Australian Journal of Public Administration*, Vol. 50 No.4, 444-447.

Jennings, J.E. and Cash, M. P. (2006), "Women's entrepreneurship in Canada: progress, puzzles and priorities". in Brush, C. G. et al. (Eds) *Growth-oriented Women Entrepreneurs and their Businesses*, Edward Elgar Publishing, Northampton, MA pp.53-87.

Johnson, S. and Winterton, J. (1999), *Management Skills*, Skills Task Force Research Paper 3, Department for Education and Employment, London.

Kaiser, H. (1974), "An index of factorial simplicity", *Psychometrika* Vol.39, 31-36.

Lerner, M, and Almor T. (2002), "Relationships among strategic capabilities and the performance of women-owned small ventures", *Journal of Small Business Management*, Vol.40 No.2, 109-125.

Lerner, M., Brush, C. and Hisrich, R. (1997), "Israeli women entrepreneurs: an examination of factors affecting performance," *Journal of Business Venturing*, Vol. 12, No. 4, 315-339.

Loscocco, K. and Robinson, J. (1991), "Barriers to women's small-business success in the United States", *Gender & Society*, Vol.5 No.4, 511-532

Low, M. B. and MacMillan, I. C. (1988), "Entrepreneurship: past research and future challenges", *Journal of Management*. Vol.14 No.2, 139-161.

Man, T. W. Y. (2001), *Entrepreneurial Competencies and the Performance of Small and Medium Enterprises in the Hong Kong Services Sector*. PhD dissertation. Hong Kong Polytechnic University.

Man, T.W.Y. and Lau T. (2005), "The context of entrepreneurship in Hong Kong: An investigation through the patterns of entrepreneurial competencies in contrasting industrial environments", *Journal of Small Business and Enterprise Development*, Vol.12 No.4, 464-481.

- Man, T.W.Y., Lau, T. and Chan, K.F. (2002), "The competitiveness of small and medium enterprises: a conceptualisation with focus on entrepreneurial competencies", *Journal of Business Venturing*, Vol.17 No.2, 123-42
- Markman, G. D., Balkin, D. B. and Baron R. A. (2002), "Inventors and new venture formation: the effects of general self-efficacy and regretful thinking", *Entrepreneurship Theory and Practice*, Vol.27 No.2, 149–165.
- Mitchell, R.K., Smith, J.B., Morse, E.A., Seawright, K.W., Peredo, A.M. and McKenzie, B. (2002), "Are entrepreneurial cognitions universal? Assessing entrepreneurial cognitions across cultures", *Entrepreneurship Theory & Practice*, Vol.26 No.4, 9-32.
- Nuthall, P. L. (2006), "Determining the important management skill competences: the case of family farm business in New Zealand", *Agricultural Systems*, Vol. 88 Nos.2/3, 429-450.
- Olson, P.D. and Boker, D.W. (1995), "Strategy process–content interaction: effects on growth performance in small start-up firms", *Journal of Small Business Management*, Vol.33 No.1, 34–44.
- Orser B. and Riding, A. (2003). *Management Competencies and SME Performance Criteria: A Pilot Study*, Small Business Policy Branch, Industry Canada, Ottawa.
- Pallant, J. (2007), *SPSS Survival Manual*, McGraw-Hill, London.
- Read, S.J. (1987), "Constructing causal scenarios: a knowledge structure approach to causal reasoning", *Journal of Personality and Social Psychology*, Vol.52 No.2, 288-302
- Reuber, A.R. and Fischer, E.M. (1994), "Entrepreneurs' experience, expertise, and the performance of technology-based firms", *IEEE Transactions on Engineering Management*, Vol.41 No.4, 1-10
- Rosa, P., Carter, S. and Hamilton, D. (1996), "Gender as a determinant of small business performance: insights from a British Study", *Small Business Economics*, Vol.8 No.6, 463-478.
- Saunders, M., Lewis, P. and Thornhill, A. (2003), *Research Methods for Business Students*, 3rd ed., Prentice Hall , London.
- Shane, S. and Venkataraman, S. (2000), "The promise of entrepreneurship as a field of research", *Academy of Management Review*, Vol.25 No.1, 217-226.

Shepherd, D.A. (1999), “Venture capitalists; introspection: a comparison of ‘in use’ and ‘espoused’ decision policies”, *Journal of Small Business Management*, Vol.37 No.2. 76-87

Smith, B. and Morse, E. (2005), *Entrepreneurial Competencies: Literature Review and Best Practices*, Small Business Policy Branch Industry Canada, Ottawa.

Srinivasan R., Woo, Y. and Cooper, A.C. (1994), “Performance determinants for male and female entrepreneurs”, in: *Frontiers of Entrepreneurship Research*. Center for Entrepreneurial Studies, Babson College, Wellesley, Mass., pp. 43–56.

Stevenson, L.A. (1986), “Against all odds: the entrepreneurship of women”, *Journal of Small Business Management*, Vol.24, no.4, 30-44.

Walker, E. and Webster, B. (2006), “Management competencies of women business owners”, *International Entrepreneurship and Management Journal*, Vol.2 No.4, 495-508.

Wiklund, J., Davidsson, P., and Delmar, F. (2003), “What do they think and feel about growth? An expectancy-value approach to small business managers’ attitudes toward growth”, *Entrepreneurship, Theory and Practice*, Vol.27, No.3, 247-270.

Table 1: Initial eigenvalues for factors selected

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	8.969	13.589	13.589
2	8.779	13.301	26.890
3	6.749	10.225	37.116
4	6.337	9.601	46.716

Extraction Method: Principal Component Analysis.

Table 2: Rotated Component Matrix

	Component			
	1	2	3	4
Interpersonal Skills	.703			
Oral Communication Skills	.662			
Relationship Building	.635			.320
Networking with others	.613			
Integrity	.594			
Passion for work (love of work)	.577			

Commitment Competencies (make business work no matter what)	.563	.412		
Motivating self	.554	.323		
Political Competence (ability to enhance your position, establish connections)	.537			
Self-Confidence	.536		.321	
Being Pro-active	.534	.313	.344	
Desire to Succeed	.525			
Perseverance	.507			
Persuasive Skills	.491		.330	.364
Manage Customers	.460			
Present-future time orientation	.458	.397		.303
Stress Tolerance	.447			.342
Written Communication Skills	.423			
Familiarity of the Market	.405		.352	
Budgeting Skills		.685		
Business Operational Skills		.672		.377
Development of the management system necessary for the long term functioning of the business		.666		
Formulating an Implementing strategies for taking advantages of opportunities (develop programmes, budgets, procedures, evaluate performance)		.656	.366	
Business Plan Preparation & Writing		.599		
Development of the operational systems for day-to-day functioning		.598		
Planning Business Activities (strategic planning)		.594		
Manage Finance e.g. accounting and cash control		.587		
Organisation Skills	.381	.585		
Ability to Acquire Finance		.545		
Problem Analysis and Solving Skills	.350	.539		
Analytical Skills		.538		
Decision Making Skills	.434	.532		
Conceptual Competencies (Mental ability to coordinate the business and its interests)	.476	.528	.303	
Acquisition of appropriate resources		.519		
Ability to conduct market research		.489	.406	
Self-Management	.455	.472		
Logical Thinking	.339	.450		
Looking beyond the present	.407	.427	.337	
Able to use Technology (computers, the internet,		.393		

e-commerce)				
Marketing and Sales		.392	.360	
Deal-making Skills	.329	.376		
Manage overlapping family and business systems		.337		
Industry Skills	.330	.333		
Idea Generation			.771	
Innovation skills			.763	
Visioning	.300		.707	
Ability to envision taking advantage of opportunity		.324	.675	
Product Innovation (design specific products and services)			.663	
Creativity			.659	
Ability to recognise an opportunity (perceive customer needs, identify goods or services people want)	.430		.594	
Willingness to rake risks	.311		.565	
Scan environment for new opportunities	.467		.558	
Risk Taking	.323		.558	
Employee Development				.773
Managing Employee Performance				.772
Human Relations Skills(supervise staff, administer payroll)				.730
Employee Relations				.709
Hiring Skills				.640
Leadership Skills	.384			.628
Motivate others individually and in groups	.453			.608
Management Style		.432		.607
Ability to Delegate authority and responsibility				.592
Management Skills	.322	.331		.551
Development of the Organisational Culture (environment)	.380	.367		.384
Number of Employees				

Extraction Method: Princpal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. (Rotation converged in 7 iterations).

Table 3: Female Entrepreneurial Competencies Framework

Factor	Item
Conceptual and Relationship Competencies	Interpersonal skills
	Oral Communication skills
	Relationship building

	<p>Networking</p> <p>Integrity</p> <p>Self-confidence</p> <p>Motivating self</p> <p>Political competence</p> <p>Being active</p> <p>Desire to succeed</p> <p>Perseverance</p>
<p>Business and Management Competencies</p>	<p>Budgeting skills</p> <p>Business operational skills</p> <p>Developing management systems</p> <p>Formulating and implementing strategies for exploiting opportunities</p> <p>Business plan preparation and writing</p> <p>Development of operational systems</p> <p>Planning business activities</p> <p>Managing finance</p>
<p>Entrepreneurial competencies</p>	<p>Idea generation</p> <p>Innovation skills</p> <p>Visioning</p> <p>Envisioning opportunities</p> <p>Product innovation</p> <p>Creativity</p> <p>Willingness to take risks</p> <p>Scan environments for opportunities</p> <p>Risk taking</p>
<p>Human relations competencies</p>	<p>Employee development</p> <p>Managing employee performance</p> <p>Human relation management skills</p> <p>Employee relations</p> <p>Hiring skills</p> <p>Leadership skills</p>

	Motivate others Management style Management skills
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