INGRID VERHEUL

Is there a (fe)male approach?

Understanding gender differences in entrepreneurship

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UNDERSTANDING GENDER DIFFERENCES IN ENTREPRENEURSHIP

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UNDERSTANDING GENDER DIFFERENCES IN ENTREPRENEURSHIP

Is er een vrouwelijke benadering?

Studies naar de verschillen tussen mannelijke en vrouwelijke ondernemers

PROEFSCHRIFT

ter verkrijging van de graad van doctor aan de
Erasmus Universiteit Rotterdam
op gezag van de
rector magnificus
Prof.dr. S.W.J. Lamberts
en volgens besluit van het College voor Promoties.

De openbare verdediging zal plaatsvinden op
donderdag 2 juni 2005 om 16.00 uur

door

Ingrid Verheul

geboren te Naarden.

Promotiecommissie

Promotor:	Prof.dr. A.R. Thurik
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Erasmus Research Institute of Management (ERIM)
RSM Erasmus University / Erasmus School of Economics
Erasmus University Rotterdam

Internet: http://www.erim.eur.nl

ERIM Electronic Series Portal: http://hdl.handle.net/1765/1

ERIM Ph.D. Series Research in Management

ISBN 90–5892–080–1

Preface

This PhD. thesis deals with the existence of gender differences in entrepreneurship. I wrote this thesis while employed at the department of General Economics of the Rotterdam School of Economics at Erasmus University Rotterdam in the period between January 2000 and June 2005. It consists of six separately readable studies.

The research for this PhD. thesis has been funded by the Impuls project 'Small Business and Entrepreneurship' of the governing body (College van Bestuur) of Erasmus University Rotterdam; the Fund Schiedam Vlaardingen e.o.; the research institute EIM Business and Policy Research in Zoetermeer; and the revenues of the Erasmus Masterclass Entrepreneurship. Moreover, several of the studies upon which this thesis is based are financially supported by the Trust Fund Rotterdam. The study in Chapter 6 has been partially funded by the Dutch Real Estate Association NVM, while the research in Chapter 3 has been realized also thanks to the support of the Coleman Foundation, Eastern Michigan University, Arenthals Grant Thornton, Fortis Bank and MeesPierson Bank.

The research in this thesis is largely based upon data made available by the research institute EIM Business and Policy Research. Therefore most of the studies in this thesis have contributed to EIM's Research Program on SMEs and Entrepreneurship financed by the Dutch Ministry of Economic Affairs.

After obtaining my Master's degree in Economics in 1999 and writing a thesis on female entrepreneurship Roy Thurik has inspired me to continue and start writing a PhD. thesis on this subject. Acting as my PhD. supervisor Roy Thurik has supported me and my research in several ways, for which I am very grateful. I remember our 'brainstorm' sessions in H8-26, late in the afternoon, drawing all kinds of causal schemes on the board trying to make sense of the world of gender issues in entrepreneurship. He introduced me at the research institute EIM Business and Policy Research where I had the opportunity to work with large-scale data sets on small and new firms in the Netherlands. He stimulated me to work with other researchers in the field and made it possible for me to go to international conferences.

Next to Roy Thurik several other people have contributed to the chapters in my PhD. thesis. I would like to thank my co-authors of Chapters 2, 3, 4 and 6: André van Stel (of whom I also learned more about statistical analyses and with whom I could share the experience of 'surviving' the final stages of writing a PhD. thesis), Lorraine Uhlaner (my neighbor at Erasmus University, who also motivated me to finish up my PhD. thesis, provided helpful comments and was always willing to share research experiences and lunch), Martin Carree (who also supported me in the final stages of my PhD. thesis and gave me a good excuse to visit Maastricht on several occasions), Peter Risseeuw (with his vast knowledge of current research in the area of entrepreneurship and his sense of humor) and Gaby Bartelse (who helped assembling empirical information for one of the chapters and has been pleasant (dinner) company up till today). I am also thankful for the useful insights provided by the members of

my PhD. committee and several other people who have commented upon the chapters in this thesis, including Siah Hwee Ang, David Audretsch, Charles Baden-Fuller, Paul Boselie, Maryse Brand, Hans Bruining, Nancy Carter, Robert Cressy, Per Davidsson, Marco van Gelderen, Dylan Jones-Evans, Antti Haahti, Gavin Reid, Heleen Stigter, Frits van Uxem, Erik Vermeulen, Karl Vesper, Nico van der Wijst and the editors and referees of the journals in which some of the chapters have been published.

Although writing a PhD. thesis can sometimes be a lonely activity, various people (in addition to those already mentioned) have made this exercise more fun and less stressful. I have enjoyed conversations, whether of a scientific or more personal nature, with my colleagues of the department of Strategic Research at EIM, including Niels Bosma, Jan de Kok, Joris Meijaard, Sander Wennekers and Gerrit de Wit, as well as other 'EIM'ers'. At Erasmus University Anna Kok and Linda Vreeswijk, several of my H8 colleagues and various 'generations' of student-assistants have created a lively and pleasant atmosphere to work in.

Outside of the work environment, I would like to thank my friends in and outside of Rotterdam – some of whom I have known since secondary school, others who have become dear friends during my studies at Erasmus University – for showing me that there is more than just academic life and providing me with the necessary distraction from my research. Special thanks also go out to my two paranimphs Anne Marieke en Annemarie for their support in coping with the organizational stress surrounding the PhD. ceremony and related 'festivities', as well as for their unconditional friendship. Also I would like to thank Stijn for his moral support especially in the early phases of my research.

Finally, I thank my parents for their love, support and continuous interest in my work throughout the years.

Ingrid Verheul
Rotterdam, March 2005

Table of Contents

Chapter 1: Introduction and Conclusions

The study of female entrepreneurship traditionally has been inspired by gender equality issues. Female entrepreneurs were assumed to experience gender-related discrimination and to experience more difficulties when starting up and running a business than their male counterparts. Today research and policy have been more and more fuelled by the idea that female entrepreneurs are important for economic progress. Even when issues such as barriers and obstacles to female entrepreneurs are raised in the gender and entrepreneurship debate, this is usually done from the perspective that female entrepreneurs are an untapped resource and have potential to contribute to a country's economic performance. Indeed, although gender equality is one of the arguments underlying the support for female entrepreneurs within the European Union, the argument that female entrepreneurs (have the potential to) contribute to economic performance continues to play a role here. In the report *Good practices in the promotion of female entrepreneurship* of the European Commission (2002, p.3) it is argued that women face a number of gender-specific barriers to starting up and running a business that have to be tackled as women are considered "*a latent source of economic growth and new jobs and should be encouraged*". Hence, the main argument to date for studying women's entrepreneurship is that female entrepreneurs are an "*engine of economic growth*" (Ahl, 2002, p. 125). The basis for this argument is the acknowledgement that entrepreneurship (in general) is important for economic performance. The link between entrepreneurship and economic growth has been established by several scholars and is well documented (see Carree and Thurik, 2003, for an overview). Moreover, in its goal for Europe to become the most competitive and dynamic knowledge-based economy in the world by 2010 the Lisbon European Council (2000) emphasizes the importance of entrepreneurship and innovation to be developed in particular by small and medium-sized enterprises (SMEs).

At the individual level entrepreneurship is considered an important way for women to become financially independent and to combine work and household responsibilities. Self-employment may also provide a way for women to escape barriers to higher levels within organizations (i.e., the so-called 'glass ceiling'). As the contemporary economy is characterized by an ever-increasing demand for quality in its broadest sense, it is of vital importance that the best qualified people are selected for (available) jobs, independent of their sex. In this way the process of emancipation becomes an important driver of economic progress. Evidence for a positive relationship between emancipation and economic performance is found in the American economy – one of

the most advanced economies in the world – where the share of female entrepreneurs is relatively high[1].

Together with the growing number of female entrepreneurs throughout the world there has been an increase in the number of studies on female entrepreneurship. However, since these studies tend to focus on female entrepreneurship in Anglo-Saxon countries, our understanding of characteristics of female entrepreneurship and the existence of gender differences in *non*-Anglo-Saxon developed countries is limited. The present thesis investigates gender differences in entrepreneurship using (predominantly) Dutch data. In the Netherlands there have been few studies investigating gender differences using larger data sets. This thesis incorporates six separately readable studies on gender differences in entrepreneurship, spanning different aspects of entrepreneurship at different levels of analysis, including the individual, the organization and the environment. On the basis of existing research knowledge gaps are identified with respect to these dimensions, which are the basis for several of the studies in the present thesis. At the micro level Chapters 3 to 7 focus on gender differences with respect to the issues of self-perception, time allocation decisions, finance, strategy and human resource management, respectively. At the macro level Chapter 2 investigates the (differences in) determinants of female and male entrepreneurship. Moreover, in this introductory chapter the link between female entrepreneurship and economic performance is discussed.

This introductory chapter is structured as follows. In Section 1.1 attention will be paid to the participation of women in entrepreneurial activity distinguishing between the number of female entrepreneurs per female labor force (female entrepreneurial *activity*) and the female share in entrepreneurial activity (female entrepreneurial *participation*). Also, attention is paid to the economic contribution of female entrepreneurs. In Section 1.2 the state of research on female entrepreneurship is discussed, giving on overview of gender differences in entrepreneurship, and identifying knowledge gaps based upon under-studied themes and insufficient or inadequate methodological development. These knowledge gaps are the basis for developing a research agenda. Section 1.2 also familiarizes the reader with the concept of gender and gender issues in research[2]. Sections 1.3 through 1.5 deal with the specific contents of this thesis. Section 1.3 presents the research agenda, giving an overview of the research questions (or themes) and presenting a research framework structuring and summarizing the chapters. Section 1.4 gives an overview of the studies in each of the chapters and Section 1.5 draws overall conclusions, discussing the evidence on gender differences, paying attention to scientific and social learning and implications as well as giving suggestions for further research.

[1] In 2003 38.6 percent of all business owners (excluding agriculture and unpaid family workers) in the US is female (OECD Labor Force Statistics) and in 2004 women run 38.8 percent of all privately held firms (Centre for Women's Business Research, see www.nfwbo.org, National Fact Sheets, National Women-Owned Businesses (Total), January 24th 2005). These firms are owned for 50 percent or more by women.

[2] The overview of gender issues is not comprehensive, but rather deals with a selection of issues that are considered relevant for understanding the gender-based perspective in this thesis.

1.1 The Economic Contribution of Female Entrepreneurship

1.1.1 Measuring Female Entrepreneurship

According the OECD (2002, p. 63): "One of the most profound labour market developments in OECD countries over the post-war period has been the continued progress made by women". Indeed, female labor participation rates have increased over the past decades, in 2003 amounting up to 59.6 percent on average for the OECD countries (OECD, 2004)[3]. Also, female participation in new venture creation and business ownership has increased.

There are different ways in which female entrepreneurship (whether in established businesses or in new venture creation) can be measured. First, one can investigate the number of female entrepreneurs per (female) labor force (i.e., female entrepreneurial activity). Second, one can have a look at the female share in total entrepreneurial activity (i.e., female entrepreneurial participation). Whereas the first measures female entrepreneurship vis-à-vis the number of women in the labor force, the second measures female entrepreneurship vis-à-vis the total number of entrepreneurs.

The present section will discuss female entrepreneurship from both perspectives, also distinguishing between self-employment and new venture activity[4]. Because female entrepreneurship rates are not similar across countries, the present section also touches upon some country differences, but this is not the main focus of the present section.[5] Although it is interesting to see where cross-country differences in female entrepreneurship come from, at the end of the day a more important question (in particular for policy makers) is whether these differences lead to variation in economic performance across countries. Hence, special attention is paid to the relationship between female entrepreneurship and economic performance.

[3] Women's employment rates refer to individuals between 15 and 64 years of age, who are in the labor force, divided by the working age population (OECD, 2004, p. 296). As a comparison the average male labor participation rate for the OECD countries in 2003 amounts up to 80.2 percent.

[4] Self-employment here refers to business owners (i.e., employers and own-account workers), excluding the agricultural sector. Self-employment data are derived from the OECD Labor Force Surveys. New venture activity is measured in terms of Total Entrepreneurial Activity (TEA) as proposed by the Global Entrepreneurship Monitor (GEM). TEA refers to the share of people in the adult population (aged 18-64 years old) who are actively involved in starting a new business or in managing a business that is less than 42 months old (Reynolds et al., 2002, p. 5). Hence, whereas self-employment is a measure of established businesses, TEA can be seen as a measure of new venture activity.

[5] Several factors may account for these differences in entrepreneurship rates, including technological, economic, demographic, institutional, and policy factors. It is outside the scope of this introduction to further investigate the origin of country differences in total and female entrepreneurial activity. A detailed discussion of the factors influencing female entrepreneurship at the country level is presented in Chapter 2.

Female entrepreneurial activity

Female self-employment and new venture activity rates are investigated by focusing upon 23 OECD countries[6] in 2002 (see Table 1.1, Appendix 1.1 for an overview). On average 6.68 women per 100 women in the female labor force are self-employed. For new venture activity this number is 4.45 (per 100 women in the female labor force). As a comparison, the average total self-employment and new venture activity rates in the 23 OECD countries amount to 10.8 and 6.69, respectively. Countries with high *total* entrepreneurial activity rates (whether in terms of self-employment or new venture activity) also tend to be characterized by high rates of *female* entrepreneurial activity (see Table 1.1 in Appendix 1.1)[7].

Mediterranean countries such as Greece, Italy, Portugal and Spain are characterized by high rates of total and female self-employment. In addition, Australia, New Zealand and Canada have high rates of total and female self-employment. These Anglo-Saxon countries are also characterized by relatively high new venture activity rates. Although the United States is characterized by below average total and female self-employment rates, new venture activity is higher than the average for the 23 OECD countries. On the other hand, Italy and Spain, countries that are characterized by relatively high levels of total and female self-employment, do not have comparably high rates of total and female new venture activity.

To understand the economic contribution of female entrepreneurs in the different countries, it is not sufficient to look at the number of (female) entrepreneurs. One should also take into account the type of (female) entrepreneurial activity. Both Anglo-Saxon countries and Scandinavian countries tend to be characterized by relatively high levels of opportunity (versus necessity) entrepreneurial activity (Reynolds et al., 2002)[8]. This is also true for female entrepreneurship. Opportunity entrepreneurship is likely to have a higher contribution to the economy in terms of innovation and job creation (Reynolds et al., 2002; 2001)[9]. Indeed, Anglo-Saxon and Scandinavian countries with high rates of opportunity entrepreneurship are also

[6] These 23 OECD countries include Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States. See Appendix 1.1 (Table 1.1) for an overview of total and female entrepreneurial activity rates in 23 OECD countries.

[7] Indeed, Pearson correlation coefficients for the relationship between total and female self-employment and that between total and female new venture activity (calculated for the 23 OECD countries in Table 1.1, Appendix 1.1) are high and positive, amounting to 0.86 and 0.98, respectively.

[8] Opportunity entrepreneurship reflects the "voluntary nature of participation" and people starting businesses because of the opportunity. Necessity entrepreneurship refers to people starting up a business because there are no "better choices for work" (Reynolds et al., 2001, p. 8).

[9] Reynolds et al. (2001) find that 14 percent of opportunity entrepreneurs expect that their new ventures create 20 or more jobs in five years, whereas nine out of ten necessity entrepreneurs expects that their firms do not provide more than 5 new jobs within the same time period. Moreover, Reynolds et al. (2002) find that the majority of export-oriented entrepreneurs are opportunity-driven and that nine percent of all opportunity entrepreneurs expect to create a new market, versus five percent of necessity entrepreneurs.

relatively prosperous[10]. In general it can be argued that the economic contribution of female entrepreneurship in terms of numbers is similar to that of entrepreneurship in general: increasing numbers (of opportunity entrepreneurship) lead to increased economic performance, although there may be a limit to this positive effect (Carree et al., 2002)[11]. However, what is the economic effect of a shift in the proportion of female versus male entrepreneurs?

Female entrepreneurial participation

High female entrepreneurial activity (per female labor force) does not necessarily imply a high female share in total entrepreneurial activity. The latter is a relative measure, enabling the comparison of female and male entrepreneurial activity.

At present the share of women in self-employment varies from 20 to 40 percent in most developed countries and on average about three in every ten entrepreneurs is female. See Table 1.2, Appendix 1.1. Including unpaid family workers, the female share in entrepreneurial activity is somewhat higher, i.e., on average one in every three entrepreneurs is female within OECD countries. Usually a relatively high percentage of women can be classified as unpaid family workers as many women lend their husbands a helping hand in their firms. The highest female self-employment shares (excluding unpaid family workers) in 2002 are found in Canada and the United States (42.4 and 39.8 percent, respectively).

The share of female self-employed in the Netherlands amounts to about 33 percent (excluding unpaid family workers)[12], which is somewhat higher than the average for the (selected) OECD countries, but still lower than the female share in the United States and Canada. The relatively high share of female self-employment in the Netherlands (vis-à-vis other OECD countries) may be due to the fact that part-time entrepreneurs are included in the OECD definition of self-employment. The percentage of women working part-time in the Netherlands amounts up to almost 60 percent in 2003, and is the highest among the OECD countries (with an average of about 25 percent) (OECD, 2004, p. 310).

In all countries the share of female entrepreneurs is below 50 percent. However, there are signs of a catching up effect. For the majority of the countries (for which data are available on both established businesses and new firm activity) the female share in

[10] Self-employment in Mediterranean countries may refer to activity in traditional sectors rather than innovative entrepreneurial activity. Verheul et al. (2002, p. 68) argue that Greece, Portugal and Spain have a relatively low per capita income, implying a traditional industrial structure. Italy is characterized by a low per capita income in Southern Italy.

[11] Carree et al. (2002) provide evidence for the existence of an equilibrium and optimal rate of business ownership, where a departure from the equilibrium level leads to a decrease in economic growth. In their view there can be either too few or too many entrepreneurs. Hence, there may be a limit to the positive contribution of an increase in the number of entrepreneurs.

[12] Including unpaid family workers the female self-employment share amounts to about 35 percent.

new activity is higher than that in self-employment. The average female share in new venture activity (0.322) is higher than that in self-employment (0.299). Because the United States has always been at the forefront of entrepreneurial development[13], it may be expected that other OECD countries will follow in the footsteps of the United States experiencing a growth in the share of female entrepreneurs in the next years.

It is striking to see that for countries with relatively high shares of female self-employment in 2002, such as Canada, Switzerland and the United States, the female share in new venture activity is lower than that in female self-employment (excluding unpaid family workers), which may be an indication of a decreasing growth rate of female entrepreneurship in these countries. Nevertheless, the Center for Women's Business Research has estimated that between 1997 and 2004 the number of women-owned firms in the United States has grown at a rate of twice that of the total number of firms[14].

An important question is whether the female share in total entrepreneurial activity is important from an economic perspective, i.e., whether, in addition to the level of entrepreneurship, the diversity of entrepreneurship is important for economic performance. Indeed, highly developed countries such as the United States and Canada, have the highest shares of female entrepreneurial activity[15]. The next section will discuss relationships between the female share in entrepreneurial activity, entrepreneurial diversity and economic performance.

1.1.2 Entrepreneurial Diversity, Economic Performance and Gender

Diversity as a driver of economic progress

Within economic theory there are different perspectives on the importance of the relationship between firm differences and economic performance. While neoclassical theory fails to pay attention to firm differences as a variable influencing economic performance – assuming a general equilibrium and treating the firm and its internal processes as a black box – evolutionary theory stresses the importance of heterogeneity among different actors or agents for economic progress (Nelson, 1991; Nelson and Winter, 1982; Nelson, 1990). Moreover, numerous scholars have discussed, investigated and acknowledged the importance of diversity for economic progress at the level of groups of individuals, firms, industries, cities and regions (Marshall, 1961; Jewkes et al., 1958; Cohen and Malerba, 2001; Quigley, 1998;

[13] Entrepreneurship in the United States started to rise in the early 1970s (after a long period of decline), whereas in other OECD countries this increased appeared no earlier than the 1980s (Audretsch et al., 2002).

[14] www.womensbusinessresearch.org (visited October 14th 2004), see 'National numbers' ('Capturing the impact') and 'Top facts'.

[15] Although it may be argued that economic performance influences the female share in self-employment, rather than the other way around, there is a positive relationship and the least that can be said is that female entrepreneurs appear not to be harmful for economic performance.

Jacobs, 1969 and 1984; Florida, 2002). There may also be linkages between the different levels of analysis. For example, diversity in the population of economic agents may ultimately lead to diversity in types of firms populating the enterprise structure, and a diverse supply of goods and services[16].

Diversity can occur at the level of inputs, processes and outputs (Saviotti, 1988; Cohen and Malerba, 2001). Given the numerous sources of diversity, an important question is *how* such diversity affects economic performance. Cohen and Malerba (2001) distinguish between three mechanisms through which diversity can lead to increased economic performance: a *selection*, *breadth* and *complementarity* effect. According to the evolutionary theorists the best performing firms (in terms of quality or quantity) are *selected* through market competition (Nelson and Winter, 1982). Holbrook et al. (2000) argue that the more diversity in competing products, the higher the expected quality per unit cost of the selected (i.e., winning) variant. The *breadth* effect is based on the existence of diminishing returns as underlying opportunities get exhausted. It is important to have a broad range of new (non-competing) products or processes available at the industry-level[17]. This effect is dependent upon the number of facets of a product that can be improved affecting competitive performance or buyer welfare. Finally, there is the *complementarity* effect where higher levels of diversity – in terms of products, processes, organization forms and targeted markets – lead to a broader supply of goods and services available to consumers. The process of competition between the diverse firms for consumer demand, and that of customer selection, may again lead to a high quality of entrepreneurship[18].

Entrepreneurship, diversity and gender

The number of entrepreneurs or small firms increases diversity and, accordingly, economic performance in a region or country (e.g., Cohen and Klepper, 1992; Cohen and Malerba, 2001). Population ecologists assume that each new organization is unique (Hannan and Freeman, 1989). By offering new non-competing, competing or complementary products and services, entrepreneurs contribute to economic performance.

Thus, entrepreneurship in itself leads to increased levels of diversity and to a higher level of economic performance. In addition, higher levels of diversity in entrepreneurial activity may be beneficial to the economy. Considering that at present the female share in entrepreneurship is below 50 percent in all countries[19], it may be argued that if there are more female entrepreneurs (vis-à-vis male entrepreneurs)

[16] As Nooteboom (1994, p. 330) argues: "*The sources that produce diversity …… lie in the variance of backgrounds, motives and goals of entrepreneurs*". Cohen and Malerba (2001, p. 589) refer the history, capabilities, strategic visions and perceptions of firms as sources of diversity.
[17] Marshall (1961) and Jewkes et al. (1958) discuss this effect in detail.
[18] This also reveals a trade-off between the selection and complementarity effect, where selection may come at the expense of complementarities (e.g., Cohen and Malerba, 2001, p. 595).
[19] However, the female share in entrepreneurship in the United States approaches the 50 percent.

within an economy, there is more room for entrepreneurial diversity (assuming that female and male entrepreneurs and their firms are different)[20]. Within the context of the present thesis it is assumed that female and male entrepreneurs have a different profile, e.g., they have a different way of doing business and start and run different types of firms. Thus, female entrepreneurs can contribute to the diversity in entrepreneurial activity and economic performance by way of their distinctive characteristics.

In terms of products and services it may be argued that female entrepreneurs tend to operate in niche markets. Female entrepreneurs often pursue a specialization strategy offering tailor-made goods and services (Chaganti and Parasuraman, 1996). Assuming that tailor-made products and services are different from other products offered within the industry, it can be said that female entrepreneurs offer new non-competing or complementary products, insulating them from competition. Because over time consumer demand has become more versatile (Brock and Evans, 1989), niche markets have become more important, i.e., diversity in demand has to be met by diversity in supply of goods and services[21]. From this perspective it may be important to stimulate female entrepreneurship, in particular as at present the share of women in entrepreneurial activity is still below 50 percent. Hence, stimulating female entrepreneurship may be a way to increase entrepreneurial diversity.

An empirical relationship …

Whereas the previous paragraph discussed the relationships between female (versus) male participation in entrepreneurial activity, entrepreneurial diversity and economic performance, the present section aims at investigating this relationship empirically[22]. Obviously, to adequately test for the relationship between the female share in entrepreneurship and economic performance, one should take into account a range of other factors that explain economic performance. Such a comprehensive exercise is outside the scope of this introduction.

We have seen (in Table 1.2, Appendix 1.1) that the highly developed economies of the United States and Canada are characterized by the highest female self-employment shares of 23 OECD countries in 2002. This suggests that there is a positive relationship between female (versus male) participation in entrepreneurial activity and economic performance (at the country level). However, the issue of reversed causality may play a role, where the level of economic performance influences the female share in entrepreneurship, rather than the other way around. The least one can say is that female entrepreneurship appears not to be harmful for economic performance of a

[20] This assertion is no longer valid if female entrepreneurship exceeds 50 percent.
[21] In fact, it is often argued by both researchers and policy makers that entrepreneurship should be a reflection of society to be able to meet the diverse demand.
[22] In the empirical growth literature many factors have been proposed to influence economic growth, however entrepreneurship – let alone female entrepreneurship – thus far has not been suggested to influence performance (Bleaney and Nishiyama, 2002).

country. The question remains whether the female share in entrepreneurial activity is beneficial to economic performance.

In the present section the relationship between the female self-employment share (as a measure of entrepreneurial diversity) and economic performance is explored, limiting the possibility of reversed causality (by way of investigating the effect of the female share in self-employment of the change in economic performance in a consecutive period). The relationship between the female share in self-employment and economic performance is explored at both the country and regional level. At the country level the focus is on the 23 OECD countries presented in Tables 1.1 and 1.2, Appendix 1.1. At the regional level the relationship is investigated for 292 Metropolitan State Areas (MSAs) in the United States.

At the country level a WLS regression analysis is performed explaining the relative change in GDP in the period 1996-2002 for 23 OECD countries including the female self-employment share in 1996 as an explanatory variable. Population is used as a weight variable. Information on these variables for the 23 OECD countries is presented in Table 1.3, Appendix 1.2. Ireland is a relative outlier, characterized by a relative GDP growth of 69.2 percent within the period between 1996 and 2002. Ireland is characterized by relatively high inflows of FDI in recent years. In fact, apart from Mexico, for the period 1993-2002 Ireland has the highest net FDI inflows (calculated as the sum of inflows and outflows), i.e., 70.8 billion US dollars, of the OECD countries (OECD, 2003). To avoid distortion of the findings due to its exceptional position, Ireland is left out of the analysis. For the (remaining) 22 OECD countries the female share in 1996 is positively correlated with the relative change in GDP in the period 1996-2002 (r=0.559; p<0.05; t=2.21).

At the regional level a WLS regression analysis is performed explaining the relative change of per capita income in the period 1997-2002 for 292 Metropolitan State Areas (MSAs) in the United States including the female firm share in 1997 as an explanatory variable. The number of firms in 1997 in the MSAs is used as a weight variable. Information on a selection of MSAs in the US (with over one million habitants) is presented in Table 1.4, Appendix 1.2. It is found that the female firm share in 1997 has a positive effect on the change in per capita income in the period 1997-2002 (r=0.28; p<0.01; t=2.77).

Admittedly, the exercises do not take into account other (relevant) influences on economic performance. Nevertheless, the findings are in correspondence with a possible positive relationship between the female share in entrepreneurship and economic performance at both the country and regional level.

1.2 What Do We Already Know About Female Entrepreneurs?

1.2.1 Introduction

Within entrepreneurship research, female entrepreneurship can be considered a 'separate' field of study[23]. Researchers focusing upon the issue of female entrepreneurship have traditionally been female, and still continue to be[24]. In general entrepreneurship researchers appear to have become more aware of the possibility of gender differences, and gender is increasingly used as a control variable.

This section classifies and discusses existing research on female entrepreneurship. To give an overview of the many studies undertaken in the area of gender issues in entrepreneurship, this section builds upon review articles by Brush (1992), Ahl (2002) and a review of studies identified in Gatewood et al (2003). The aim is not to provide a full picture of research in the area of female entrepreneurship, but rather to give the reader an idea of the state of research on gender issues in entrepreneurship. On the basis of the literature review presented in this section knowledge gaps are identified that can help to show the contribution of the present thesis (discussed in Section 1.3).

The subject of the present thesis is situated at the intersection of two broad fields of study: entrepreneurship and gender. In each of the chapters one aspect of entrepreneurship (e.g., finance, management, time-investment) is discussed, where gender can be considered the lens through which this particular dimension is investigated. The present section pays attention to the concept of gender, where gender differences come from, and whether they are worth studying.

1.2.2 Classification of Existing Research

Early work on entrepreneurship focused predominantly on male entrepreneurs, which was the most representative group in terms of numbers (Moore, 1990). Only from the late 1970s research on female entrepreneurship began to develop, starting out with

[23] Based on the number of researchers involved in female entrepreneurship research, the special issues in entrepreneurship journals (such as those in the journals Entrepreneurship Theory and Practice, and International Journal of Entrepreneurial Behaviour and Research, planned for 2005 and 2004, respectively), the Diana project (an international research consortium, consisting of renowned scholars in the field of female entrepreneurship), collected series of female entrepreneurship studies in books or edited volumes (e.g., International Handbook of Women and Small Business Entrepreneurship, edited by Fielden and Davidson), and the fact that gender or women in entrepreneurship has been a separate issue in the Proceedings of the Babson Kaufmann Entrepreneurship Research Conference, Frontiers of Entrepreneurship Research, from 1996 onwards (with the exception of the year 2000).

[24] This is shown by the overrepresentation of female researchers and contributors within the Diana project; the gender section of several issues of *Frontiers of Entrepreneurship Research* and the *International Handbook of Women and Small Business Entrepreneurship*.

studying the psychological and sociological characteristics of female entrepreneurs (see Schwartz, 1976). Until the late 1980s female entrepreneurship remained a neglected area of study (Carter, 1993). Reviewing the existing literature up to the early 1990s, Brush (1992, p. 6) argues that "*Despite the tremendous growth in the number of women-owned enterprises ... there are few studies researching women business owners in general, comparing them to other groups of employed or non-working women, or comparing them to men*". In the last decade the interest for entrepreneurship has become more apparent as gender is often included within entrepreneurship studies, either as a focal or control variable.

Research on female entrepreneurship can be structured around different themes. Brush (1992) uses Gartner's (1985) framework distinguishing between four key components of new venture creation: individual, process, organization, environment[25]. Here the same classification is used discussing gender differences with respect to the different subjects within the field of entrepreneurship[26].

Most studies on female entrepreneurship focus upon the individual, covering topics such as motivations, demographics and background characteristics (such as education and experience). Up to the early 1990s research on female entrepreneurship identified gender differences with respect to individual characteristics. Brush (1992; p. 13) concludes that: "*women business owners are more different from than similar to men in terms of individual level characteristics such as education, occupational experience, motivations, and circumstances of business start-up/acquisition*". However, contemporary research indicates that for a range of individual characteristics (including psychological, attitudinal and personal background factors) there are more similarities than differences between female and male entrepreneurs (e.g., Ahl, 2002).

With respect to research intensity, the 'individual' studies are followed by studies on the environment, organization and process of entrepreneurship, respectively (Ahl, 2002)[27]. In particular the number of studies dealing with environmental aspects has increased since the early 1990s. The process of starting up and running a business as well as environmental influences on entrepreneurial activity seem relatively similar for

[25] Gartner's (1985) framework for new venture creation distinguishes between four key components of new venture creation and ownership: *individual* (e.g., demographics, education, experience, psychological characteristics of the entrepreneur), *process* (referring to activities of an entrepreneur, including opportunity recognition, resource accumulation, venture creation and sustenance), *environment* (referring to the interaction between entrepreneur and his/her environment, including availability of resources, government regulation and support, industrial structure, urbanization) and *organization* (referring to firm characteristics, including strategic decision-making, organizational structure, business profile).

[26] It should be noted that the use of the components of new venture creation as proposed by Gartner (1985) may not be ideal. The components of new venture creation are by no means exclusive. For instance, the process of new venture creation may not easily be disentangled from the entrepreneur, the organization and its environment (Steyaert, 1995).

[27] As Ahl (2002, p. 97, footnote 1) argues: "*the general tendency of focusing on the individual remained, with over half of the papers in this category*". "*The rest were divided about equally between the other three headings ...*".

female and male entrepreneurs (e.g., Ahl, 2002). However, in terms of organizational characteristics businesses of women have been found to be more different from than similar to businesses of men. In particular, this is found for sales volumes, management styles, goals, and the acquisition of start-up capital (Brush, 1992). Ahl (2002) finds that the scarce research (usually studies with few observations) focusing upon organization refers to a distinctive (relational) management style of female entrepreneurs as compared to that of male entrepreneurs. The most consistent gender differences are found for firm size and sector, where businesses of women are on average smaller than those of men (whether measured in terms of financial indicators or employees) and with female entrepreneurs being more likely to operate retail or service firms.

In addition to studies that fall into one of the categories – individual, organization, environment, and process – there are studies that are more comprehensive, taking into account and covering several aspects at the same time. For example, studies classified as mixed studies include overview articles and articles investigating individual and firm performance[28]. In her review of performance articles, Ahl (2002) argues that the topic of firm performance has become more popular in female entrepreneurship studies in the past decade. Until the early 1990s this topic did not receive much attention. Discussing performance differentials between businesses of female and male entrepreneurs, Ahl (2002, p. 108) argues that "*The 'female underperformance hypothesis' .... did not hold when put to rigorous tests accounting for structural factors*". And if preferences are taken into account there appears to be no support for the proposed gender differences in entrepreneurial performance.

With respect to the particular subjects dealt with within each of the categories, it can be said that environment studies mostly focus upon resource availability and (to a lesser extent) support structures for female entrepreneurs. The organization studies emphasize business profile characteristics, such as sector, firm size and age. Process studies tend to focus upon the process of new venture creation, including topics such as networking and resource acquisition. In addition, most studies within the area of performance differentials focus upon firm performance. Although individual studies in the area of female entrepreneurship have a broad focus, they tend to focus upon characteristics of women business owners in general, rather than investigating and comparing groups of women (Brush, 1992).

Comparing early and contemporary work on female entrepreneurship, it should be noted that some of the knowledge gaps identified in earlier research (e.g., Brush,

[28] Because performance may not necessarily be classified as a component of new venture creation, but rather may be considered a consequence of new firm creation, its classification is not straightforward. This may also be the reason why Brush (1992) does not explicitly discuss female entrepreneurship studies from the perspective of performance. Nevertheless, when outlining directions for future research Brush (1992) argues that each of the suggested research areas should be studied also in combination with its effects on performance.

1992) are still present[29]. Although there has been an increase in the number of studies focusing upon the environment of female entrepreneurship, these studies tend to focus upon one environmental aspect, i.e., there is no comprehensive overview of environmental influences on female entrepreneurship. Lohmann (2001) argues that most studies within female entrepreneurship have focused upon the individual or firm level, while scarce attention has been paid to the conditions for female self-employment at the country level. Also, no attention has been paid to the consequences of female entrepreneurship at the regional or country level. With respect to the understudied dimension of organization, there are still relatively few studies that focus upon the organizational structure and management styles in businesses of female entrepreneurs.

Although within the past decade more studies have been undertaken within the area of female entrepreneurship, research provides inconclusive evidence of the existence of gender differences. While research up till the early 1990s suggests that there are more differences than similarities between female and male entrepreneurs, more recent studies suggest that there are more similarities than differences between female and male entrepreneurs. Ahl (2002) argues that the inconclusive evidence and the lack of gender differences found is (partly) due to inadequate research design[30]. On the other hand, witnessing the evidence of an absence of gender differences with respect to performance when taking into account a range of relevant structural factors, it may be argued that there may be few differences in entrepreneurship that can solely be ascribed to the gender of the entrepreneur.

1.2.3 Methodological Issues

Early research on female entrepreneurship (up to the early 1990s) can be characterized as follows: *descriptive* in nature, spanning a *locality or region* (rather than a country or surpassing country-level research), using *convenience samples*, and a lack of *comparison groups* (to contrast female entrepreneurs) (Brush, 1992). Contemporary research (from the early 1990s onwards) uses more sophisticated methods to investigate gender issues in entrepreneurship. Most studies use mixed samples including a control group to contrast the female entrepreneurs (Gatewood et al., 1993; Ahl, 2002). Moreover, most samples are relatively large. Ahl (2002) finds that 17

[29] Brush (1992) proposes the following future research directions (per area) for studying gender differences in entrepreneurship. With respect to the *individual* dimension future research should focus upon the perception of the business, the primary role of the entrepreneur in the business, and the motivation for business start-up. Regarding the *organization* dimension future research should be performed in the area of business goals, organizational structure, measurement of firm performance and success and planning activities. *Process* studies should investigate background factors influencing new venture creation, the question how the business is acquired/created and management styles (in relation to job satisfaction of employees). Research on *environmental* influences should focus upon work and family relationships, networks and support structures for entrepreneurs as well as political, governmental, technological, and economic factors influencing business ownership.

[30] Ahl (2002) refers to divergent definitions of what constitutes an entrepreneur, heterogeneous samples and inaccurate referral practices.

percent of the studies use samples of over 1000 respondents, 12 percent use between 500 and 999 respondents, and 41 percent use between 100 and 499 respondents. Although most samples include a large number of gender-mixed observations, they often refer to heterogeneous observations, e.g., observations of different firm size, growth orientation and potential and sector. Whereas early research was mainly descriptive or exploratory in nature, later studies show a development towards more explanatory studies. More than one-third of the studies now apply regression analysis, factor, cluster or discriminant analysis (Ahl, 2002).

Most studies on female entrepreneurship use data from Anglo-Saxon countries (e.g., the United States, the United Kingdom, Canada, Australia and New Zealand)[31]. It may be difficult to generalize these results to other countries. Referring to the current state of research on women's participation in self-employment and the need to do research outside of the United States, McManus (2001, p. 90) argues that "*the most important direction for new research is to investigate gender differences in self-employment in other industrial nations …"*, because "*Despite the similarities in economic and family spheres of Western industrial states, the development of female self-employment is likely to take on different forms in other countries*".[32] It can be concluded that research on female entrepreneurship within Western European countries is still in its infancy.

With respect to theory development it can be argued that from the early 1990s onwards the number of female entrepreneurship studies with theory base has increased, with only about 10 percent of the studies lacking a theoretical foundation (Ahl, 2002). However, most studies (i.e., about one-third) refer to empirical results from previous work on female entrepreneurship, often leaving out a discussion of the theoretical basis of this work. With respect to the theories used Ahl (2002) finds that theories of sociology, psychology and management or economics (or a combination) are used. In addition, a minority of the studies has used feminist theory.

1.2.4 Perspectives on Gender Differences

Nature versus nurture[33]

There are two basic schools of thought proposing different reasons for the existence of gender differences (in general): *biological determinism* (referred to as nature) and *differential socialization* (referred to as nurture), the latter of which has served as input for the social feminist perspective (discussed in the subsequent paragraph). Biological arguments for gender differences generally draw upon three streams of research, including evolutionary theory, brain research and endocrinological research on sex hormones. The implication of the biological determinism perspective is that because differences between women and men are attributed to their different biological nature,

[31] Ahl (2002, p. 89) finds that 83 percent of the reviewed studies refer to Anglo-Saxon countries.
[32] See also Lohmann (2001).
[33] Based on Kimmel (2000).

one automatically assumes that the existing societal arrangements between women and men are inevitable, dismantling the need for policy intervention and support structures.

Social scientists refute the perspective that innate biological differences lead to behavioral differences which – in turn – construct the social, political and economic environment. They argue that gender inequality in society leads to observable differences in behaviors, attitudes and traits. The differential socialization school of thought assumes that women and men are different because they are taught to be different.

In essence both the biological determinism perspective and the socialization view assume that women and men behave differently, and that they are different from each other[34]. Moreover, both streams of thought assume that the differences between men and women are greater and more decisive (and therefore more worthy of study) than the differences within groups of women and men[35].

Social versus liberal feminism

The identified gender differences in entrepreneurship research have been explained in different ways, either assuming that women and men are different from each other or that they are in essence the same and the environment causes them to behave in different ways. These perspectives are consistent with the *social* and *liberal* feminist perspective, respectively (Fischer et al., 1993). According to the social feminist perspective gender differences in entrepreneurship are due to differences in early and ongoing socialization. Hence, female and male entrepreneurs are inherently different, giving rise to different ways of viewing the world and, accordingly, different ways in which entrepreneurship is practiced. The liberal feminist perspective argues that in essence women and men are the same and that female entrepreneurs experience more problems or structure their firms in a distinct way (as compared to male entrepreneurs) because they are confronted with unequal access to resources and gender-based discrimination. To summarize, both perspectives expect female and male entrepreneurs to behave in a different way, either determined by situational differences and/ or barriers (liberal feminism) or by dispositional differences and/or barriers (social feminism).

A different way of explaining gender differences in entrepreneurship is by investigating situational factors that are correlated with gender. Female and male entrepreneurs may behave in the same fashion, provided they have the same personal and business profile. For instance, because female entrepreneurs tend to have smaller firms, their firms are characterized by different performance rates and organizational structure. This perspective on studying and explaining gender differences may be more

[34] However, the 'nurture' school of thought allows for some possibility of change.
[35] Also, these schools of thought assume that gender domination (males over females) is a result of gender differences (Kimmel, 2000, p. 4).

similar to than different from the two perspectives proposed above. Indeed, differences in the personal and business profile of female and male entrepreneurs may be explained by situational or dispositional differences.

Sex versus gender

Most social and behavioral (i.e., *nurture*) scientists make a distinction between the terms gender and sex, where sex refers to biological aspects and gender refers to the meanings that are attached to these differences between women and men within given a culture. Thus, whereas a person's sex (male or female) is based on physiological characteristics, a person's gender (masculinity or femininity) is based on differences in social experiences (Bem, 1993; Korabik, 1999)[36]. Because there is likely to be within-sex variation in experiences, sex may not completely determine a person's gender (Fischer et al., 1993). However, Korabik (1999, p. 12) argues that: "… *although sex and gender are theoretically independent, the sex-linked gender-role socialization that is still commonplace in Western culture means that empirically they are often not*". Therefore, gender is often operationalized by using biological sex as a proxy variable (i.e., assuming bio-psychological equivalence)[37].

Because biological sex may be confused with a range of other factors (Ridgeway, 1992), it is important to take into account the situational context. As Kimmel (2000, p. 12) argues: "*It turns out that many of the differences between women and men that we observe in our everyday lives are actually not gender differences at all, but differences that are the result of being in different positions or in different arena's*".

Most studies investigating gender effects in entrepreneurship take the unidimensional model of gender, assuming bio-psychological equivalence, as a starting point. However, there have been studies taking a bidimensional gender approach to studying entrepreneurship, focusing upon femininity versus masculinity. For example, Watson and Newby (2004) argue that sex roles (masculinity or task focus versus femininity or relationship focus) may be more important in explaining entrepreneurial characteristics. Moreover, White et al. (2003) investigate the relationship between the level of testosterone and entrepreneurial behavior[38]. In these studies gender no longer

[36] Hence, whereas biological sex may be seen as an exogenous variable (that is not determined by other factors), gender may be considered an endogenous variable (that is determined by other factors, such as life experiences).

[37] This is in line with the unidimensional model of gender, placing masculinity and femininity at opposite sides of the continuum, where men and masculinity are at one end and women and femininity are at the other end. Biological sex is used as a determinant of psychosocial gender. Bidimensional models of gender – on the other hand – assume that gender consists of two independent dimensions, masculinity and femininity. These dimensions are considered to be independent of biological sex. For a detailed discussion, see Korabik (1999).

[38] Testosterone may be considered a measure of femininity versus masculinity. Although testosterone levels tend to be higher for men than for women, this is not necessarily the case. It should be noted that the relationship between level of testosterone and new venture creation was tested using male-only sample

constitutes a dummy variable but measurement of gender (or masculinity versus femininity) is more complex and diverse. However, using sex as a determinant of gender has the advantage of measurement consistency. In addition, it enables comparison of the studies in the present thesis with the bulk of studies that have been done in the area of gender issues in entrepreneurship.

The present thesis focuses upon differences between female and male entrepreneurs, and does not investigate the influence of femininity (or masculinity) on entrepreneurship. Whereas 'sex' of the entrepreneur is measured, the term 'gender' is used to capture all underlying characteristics and experiences of women and men. To avoid misinterpretation of the results, in this study a distinction is made between *direct* and *indirect* gender effects. Indirect gender effects refer to effects of various economic and social factors with respect to which female and male entrepreneurs differ (e.g., sector, firm size), whereas direct gender effects refer to gender differences that are not due to other factors included as controls in the study. The direct gender effect should be regarded as a residual effect as it may be that there are still other determining factors (correlating with gender) that have not been controlled for. When studying gender issues (in entrepreneurship) it is virtually impossible to control for all intermediary factors[39].

Are gender differences worth studying?

In the present thesis there is an implicit assumption that studying gender differences is important. However, several arguments have been brought forward why the study of gender differences in entrepreneurship would *not* be very useful. In the previous paragraph it has been argued that gender and sex may not coincide and that there are masculine women and feminine men. In accordance with this view it would be more worthwhile to study the influences of femininity and masculinity on entrepreneurship instead of differences between female and male entrepreneurs.

A related argument is that the differences *among* women and *among* men are larger and more important than those *between* women and men, and accordingly, that research should focus upon these intra-group (or in-group) differences instead of inter-group (or between-group) differences (e.g., Kimmel, 2000; Ahl, 2002). In this respect, Moore (1999, p. 388) advocates that: "*It is time to stop clumping entrepreneurs together in one group. Much is to be learned by studying women entrepreneurs as members of various groups*". Also, there are likely to be differences between female entrepreneurs of different generations. Moore (1999) distinguishes between 'traditionals' (i.e., female entrepreneurs with traditional values, adhering to stereotypical female work roles) and 'moderns' (i.e., later generation female entrepreneurs who are more similar to than different from their male counterparts). In

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data. No female respondents were included. It is found that individuals with higher testosterone levels are more likely to display entrepreneurial behaviour.

[39] The intermediary factors used in the present study are all based upon a review of the literature.

other words, there may be a generation effect which outweighs the gender effect, where female entrepreneurs from earlier generations are different from those of later generations. Indeed, over time gender differences have become less pronounced. We see a gender convergence rather than divergence, and women and men nowadays are far more alike than they were some decades ago (Kimmel, 2000). Obviously, there will be a range of other factors including age, educational background, firm size and sector, that may be more important in explaining differences between entrepreneurs than gender[40].

1.3 Research Questions and Objectives

1.3.1 Introduction

The previous sections have dealt with female entrepreneurship from a societal and scientific perspective, respectively. The present section describes the research goals of the present thesis, discussing its contribution to theoretical and methodological development of female entrepreneurship research. The present section sets out to discuss the research agenda for female entrepreneurship research, based on the knowledge gaps derived from Section 1.2, and how the different chapters in the present thesis relate to the research agenda and contribute to knowledge development within female entrepreneurship research. Moreover, a model is presented bringing together the different topics in female entrepreneurship research (in general) and the present thesis (in particular), distinguishing between individual, organizational (i.e., micro-level) and environmental (i.e., macro-level) research dimensions.

1.3.2 Research Goals

Although female entrepreneurship (in general) is no longer an understudied phenomenon, there are still research areas that have received little or no attention. Moreover, the entrepreneurship studies that have paid attention to gender provide inconclusive evidence of gender differences in entrepreneurship. This inconclusive evidence has been attributed to methodological weaknesses of female entrepreneurship research, including the use of small, convenience and non-mixed samples, divergent definitions of (female) entrepreneurship, and omission of controls (e.g., firm size, sector) to enable comparisons between observations within heterogeneous samples.

The aim of this study is twofold. First of all, it attempts to create more insight into those areas where female entrepreneurship research to date has not been abundant. Most of the chapters within this study fall into one of the categories identified by

[40] Brush (1992, p. 13) refers to research indicating that women business owners differ with respect to the 'individual' dimension depending upon a woman's age (see Kaplan, 1988) and the location of the business (see Holmquist and Sundin, 1988).

Brush (1992) as areas that are in need of further research. Although these suggestions for further research stem from an overview of studies in female entrepreneurship that was published more than ten years ago, more recent research still has not filled in the identified knowledge gaps and has not succeeded in providing conclusive evidence within these areas (see Ahl, 2002).

Second, this study attempts to contribute to methodological development of female entrepreneurship research by systematically distinguishing between direct and indirect gender effects in entrepreneurship. Purpose of this approach is to disentangle 'pure' gender effects from effects of factors that are correlated with gender. The latter effects cloud the evidence of gender differences in entrepreneurship. Although the use of control variables in research on entrepreneurship is not new – in several studies gender itself is used as a control variable – thus far within research on female entrepreneurship no systematic and explicit distinction has been made between direct and indirect gender effects. The chapters within this study investigate the direct and indirect effects through empirical analyses, using relatively large data samples from a non-Anglo-Saxon country (i.e., the Netherlands) to supplement the scarce research that has been done on female entrepreneurship in Western developed countries. In subsequent paragraphs both the research framework and the research themes in this thesis are discussed in more detail.

1.3.3 Research Agenda

Section 1.2 has summarized the state of research in the area of female entrepreneurship, distinguishing between thematic and methodological issues. Knowledge gaps with respect to female entrepreneurship can be identified on the basis of under-studied (neglected) themes or methodological weaknesses. Here an overview is given of the knowledge gaps and how the studies in the present thesis contribute to knowledge development in female entrepreneurship research.

Neglected themes

Based on Gartner's (1985) distinction between individual, organization, process and environment components of new venture creation, Brush (1992) identified areas in need for further research, several areas of which up to date still have received little attention of female entrepreneurship researchers.

Knowledge gaps that are due to neglected themes particularly exist with respect to the organization and environment dimension. Although the latter area of research has received more attention in recent years (i.e., from 1992 onwards) studies within this category have mainly focused upon one aspect, such as resource acquisition and the relationships between banks and female entrepreneurs, rather than focusing upon the complex network of external actors with which female entrepreneurs are confronted. Moreover, in spite of the fact that there have been some studies focusing upon support structures for female entrepreneurs, thus far there has not been a comprehensive

overview of macro-level influences on the start-up and or management of businesses by female entrepreneurs[41]. Organization studies have emphasized organization context or business profile factors (e.g., firm size, sector, location) rather than organizational structure factors (e.g., management, goals). The individual dimension has been relatively well studied. However, Brush (1992) has acknowledged that the perception of the business by female and male entrepreneurs, as well as their primary roles within the firm, deserves more attention. Today there still has not been much attention for (self)-perception issues in female entrepreneurship research. With respect to performance studies, most of the research has been performed at the organizational level, while no research has been done investigating the (economic) performance of female entrepreneurs at the country level (Ahl, 2002).

Methodological weaknesses

Methodological weaknesses of research on female entrepreneurship have toned down within the last decade (i.e., from the early 1990s onwards). Particularly, the samples used for research on gender issues in entrepreneurship have improved (in terms of number of respondents, mixed samples, and selection of respondents). On the other hand, we see that samples are still heterogeneous where researchers run into the risk of comparing apples and pears. The same is true for the applied definition of an entrepreneur which is divergent across studies. Moreover, the research that has been undertaken on female entrepreneurship has largely made use of samples of entrepreneurs from Anglo-Saxon countries. Findings from these studies may not be easily generalized and applicable to other Western European countries, such as the Netherlands, because of differences in the economic, social and cultural context.

Contribution of this thesis

Themes

The present study investigates gender differences with respect to selected topics within the categories: individual, organization and environment. These three categories also coincide with different levels of analysis in the study of (female) entrepreneurship (see Figure 1.2). Since the process dimension can not be easily disentangled from the organization and individual dimension, this dimension will not be explicitly used here[42].

From an *environmental* perspective in this introductory chapter the link between female entrepreneurship and economic performance is discussed and explored empirically. The exercises suggest that there may be a (positive) relationship between

[41] This is acknowledged by Brush (1992) arguing that the influence of political, governmental, technological, and economic factors on business ownership of women should be further investigated.
[42] See Steyaert (1995).

the share of female entrepreneurship and economic performance (at the country and regional level), a relationship that should be further explored using sophisticated modeling and analysis. Also at the environmental level, Chapter 2 discusses a range of influences (economic, technological, demographic, governmental, and cultural) on female and male entrepreneurial activity rates. In her review article Brush (1992) identified this topic (within the environment dimension) as an important area for further research.

This thesis includes two chapters dealing with the understudied issue of *organizational structure*, including strategic management and leadership (in Chapter 6) and human resource management (in Chapter 7). Also, Chapter 5 – investigating the determinants of the financial capital structure – may be classified as an organization study. In addition, this thesis includes two studies at the *individual* level, studying entrepreneurial self-perception of individuals who participate in a range of business accomplishments (in Chapter 3) and investigating time allocation decisions of individual entrepreneurs (in Chapter 4). Indeed, perception issues have been identified by Brush (1992) as understudied within the individual dimension. Moreover, although time allocation decisions have been studied within entrepreneurship research, referring to part-time and fulltime entrepreneurship, the decision making process and the determinants of time investments (distinguishing between preferences and productivity) have not been adequately studied.

Methodology

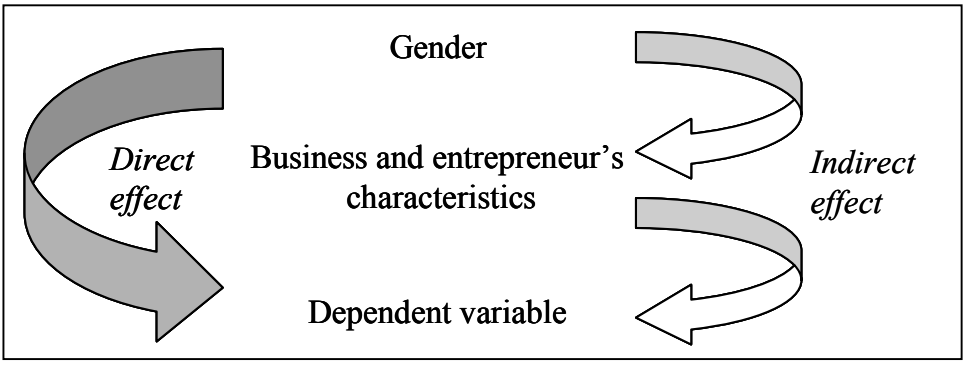
With respect to methodological issues each of the studies at the micro-level (i.e., individual and firm level) distinguishes between direct and indirect gender effects, with indirect effects on a dependent variable referring to gender differences that are due to differences between female and male entrepreneurs with respect to the (other) independent variables, and direct effects referring to gender differences with respect to a dependent variable that can not be attributed to differences between female and male entrepreneurs on the (other) independent variables. Here the (other) independent variables are controlled for in the analysis[43]. The direct effect can be considered a residual effect. The analyses include a range of explanatory factors (which are controlled for), but a possible gender effect may still be attributed to other explanatory factors that have not been taken into account. The present study attempts to capture the 'pure' gender effect, trying to disentangle gender effects and effects of other factors (that are correlated with gender) by including a range of relevant explanatory variables in the analysis, based upon a thorough survey of the literature. In this way effects

[43] This distinction between direct and indirect effects refers to mediation effects, where the influence of a factor (in this case gender of the entrepreneur) runs (partly) through other (intermediary) factors. Hence, this study investigates to what extent the effect of gender on a particular variable is mediated by other explanatory factors. In addition to mediation effects, there can be moderation effects. These are interaction effects, where the effect of a certain variable is dependent upon gender. The study of moderation effects is outside the scope of the present thesis. See James and Brett (1984) for a detailed discussion of mediation and moderation effects.

above and beyond gender are identified that otherwise would have been presented as gender effects. Moreover, the problem of heterogeneous samples may be (partly) circumvented as factors with respect to which female (or male) entrepreneurs may vary are held constant.

The distinction between direct and indirect effects is presented in Figure 1.1[44]. Several chapters in this study, i.e., Chapters 3, 4, 5, 7, explicitly distinguish between direct and indirect effects of gender on a dependent variable. The dependent variables include entrepreneurial self-perception (in Chapter 3), time investments (in Chapter 4), start-up capital (in Chapter 5) and control-orientation of HRM (in Chapter 7). Chapter 6 is an exploratory study investigating differences between female and male entrepreneurs and, although it does discuss some of the linkages between the explanatory variables, it does not explicitly distinguish between direct and indirect gender effects.

Figure 1.1: Direct and indirect gender effects



Mixed samples (including both female and male entrepreneurs) are used throughout this thesis. Moreover, the samples are relatively large (with the exception of Chapter 2, which is done at the country level, and Chapter 6, which is an exploratory study on organizational structure). Because of the use of large samples, studies in this thesis are mainly explanatory, with the exception of that in Chapter 6 which is an exploratory study. Apart from Chapter 2 (using cross-country data), this thesis focuses on entrepreneurs in the Netherlands, contributing to theory development of female entrepreneurship in a non-Anglo-Saxon, Western European, developed country.

[44] To test for direct and indirect effects this thesis assumes a fully recursive model where disturbances in the system of regression equations are not related. Accordingly, the effects on the dependent variable can be consistently estimated using equation-by-equation Ordinary Least Squares regressions. For a detailed description, see Greene (2000, p. 679). In the present thesis direct and indirect gender effects are explicitly discussed and tested in Chapters 3, 4, 5, and 7. These chapters compare the results of the regression models including all variables (i.e., intermediary variables and gender); including the intermediary variables only; and including gender only. An exception is Chapter 4 in which a nonlinear regression analysis is performed and indirect effects are discussed on the basis of correlations of gender with the explanatory variables and the influence of these variables on the dependent variables in the regression analysis.

Although Chapter 3 focuses upon entrepreneurial activities and self-perception of American alumni, this study also includes a survey among European experts and their opinion of what they consider entrepreneurial.

The focus group in the studies is female and male small business start-ups (in Chapters 2, 4 and 5)[45] and owners (in Chapters 6 and 7)[46]. Chapter 3 deviates from the other chapters by operating a broader definition of entrepreneurship, distinguishing between different entrepreneurial activities, such as starting a firm, running a small firm and intrapreneurship. This is done to be able to investigate the degree of entrepreneurship involved in each of the activities.

1.3.4 Research Framework

The present thesis spans different research themes within the area of female entrepreneurship, driven by knowledge gaps related to content or methodological weaknesses of existing research. This section presents a framework to illustrate the relationships between the different topics within (female) entrepreneurship research, distinguishing between different levels of analysis.

The studies within the present thesis focus on different levels of analysis, paying attention to issues at the individual, organizational and environmental level. At the environmental (or macro) level the causes and consequences of female entrepreneurship are discussed. In this introductory chapter female entrepreneurship is argued to be important as it contributes to entrepreneurial diversity, which – in turn – may lead to higher economic performance. From this perspective it is also important to have an understanding of the determinants of female entrepreneurship (in Chapter 2). Hence, the environment will influence female entrepreneurship and vice-versa. The micro-level studies in this thesis (in Chapters 3 to 7) focus upon how entrepreneurial diversity reveals itself at the individual and organizational (i.e., micro) level by investigating the differences between female and male entrepreneurs at those levels (i.e., the influence of gender on individual and organizational characteristics).

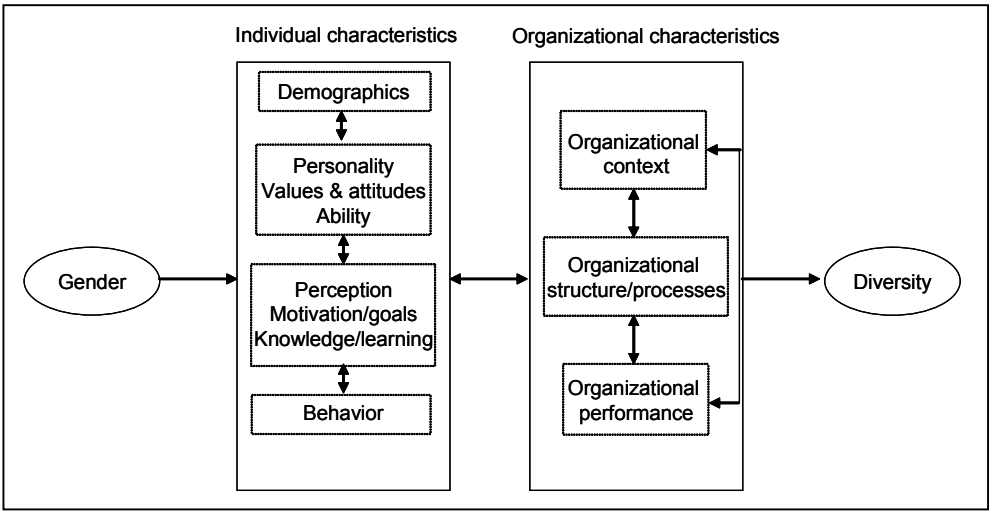
The present thesis focuses on a selection of themes as the main variable to be explained at the micro level. Chapters 3 and 4 focus upon explaining the individual characteristics entrepreneurial self-perception and time allocation decisions. Chapters 5 to 7 focus upon organization context (i.e., financial structure in Chapter 5) and organization structure (i.e., strategic and human resource management in Chapters 6 and 7). Explanation of these main variables (at the micro level) occurs through including other individual and organizational variables as explanatory variables. For

[45] More specifically, in Chapter 2 the focus is on nascent entrepreneurs and young firms (younger than 3.5 years).
[46] As opposed to the other chapters, Chapters 6 and 7 focus upon business owners. This choice is appropriate since the organizational structure of start-ups or young firms is still developing (i.e., not fully-grown).

example, in Chapter 4 the number of hours worked (which is an individual 'behavioral' variable) is explained by gender and (other) individual characteristics (e.g., age, education level and experience), adding organizational context characteristics (e.g., firm size, sector) as controls.

With hindsight it may be argued that the (relationships between the) themes studied in the present thesis to some extent correspond with the organizational behavior perspective of researching organizational phenomena. Figure 1.2 gives an overview of individual and organizational characteristics and the relationships between them, commonly used in organization studies[47].

Figure 1.2: Relationships between topics at different levels of analysis



In the present thesis it is assumed that the gender of the entrepreneur influences individual characteristics of the entrepreneur, including demographics (e.g., age, ethnicity); personality, values and attitudes and ability; perception, motivation and goals, and learning; and behavior. For example, women may have specific motivations for starting a business (e.g., combining work and household responsibilities). Although it is argued in the present thesis that women and men may differ with respect to characteristics of their organization, we assume that most of these organizational differences can be related to differences with respect to individual characteristics. In

[47] The identified individual characteristics and relationships in Figure 1.2 are based upon a basic Organization Behavior model (see, Robbins, 1998, p. 28). The 'boxes' indicate different groups of individual characteristics. The relationships between the (groups of) individual characteristics as outlined in Figure 1.2 are highly simplified. Obviously, the "reality" of relationships will be far more complex. For example, also between individual characteristics within each of the 'boxes' there may be relationships. Although gender can be considered a demographic characteristic, in Figure 1.2 it has been placed outside the individual characteristics box as gender effects are the main focus within the present thesis. Demographics here refer to characteristics such as age, ethnicity and family situation.

contrast with Figure 1.1, Figure 1.2 suggests that there is no direct effect of the gender of the entrepreneur on organizational characteristics if you control for all relevant individual characteristics, i.e., that the effect of gender is completely mediated by individual characteristics[48]. However, it is the question whether this is true and it is a challenge for future research to further investigate (in)direct effects of gender and to identify underlying factors that can explain the gender differences that are perceived in society.

The individual characteristics influence organizational characteristics. Organizational characteristics include organizational *context* variables (e.g., sector, firm size, strategy, location, networks, suppliers and other external parties), organizational *structure* (e.g., management, firm structure) and organizational *performance*[49]. Obviously, there will be linkages between organizational context, structure and performance. For example, small firms have a different organizational structure than larger firms. And larger firms are more likely to have higher performance in terms of financial indicators, e.g., revenues and profits. In addition, there may be 'feedback' effects from the organizational characteristics to the individual characteristics. For example, the performance of a firm is likely to influence the attitude towards work and the time allocated to the firm.

Within this framework and thesis gender is considered to be a source of diversity, as we expect to find differences in individual and organizational characteristics between female and male entrepreneurs. This diversity at the individual and firm level is seen as input for entrepreneurial diversity at the level of the *environment* (i.e., the macro-level) as has been discussed in this introductory chapter.

1.4 Chapter Overview

In the previous section an overview has been given of the relationships between the different themes within the field of entrepreneurship that are discussed in the present thesis. This section gives a more detailed overview of the contents of the separate chapters. Per chapter a brief summary is given of the set-up of the study and the results, paying explicit attention to the evidence of gender differences.

[48] Indeed, it has been argued that the direct gender effect can be considered a residual effect.

[49] Daft (1998) distinguishes between organizational *context* and *structure* variables, where the structural dimensions characterize the internal characteristics of the organization and context dimensions characterize the whole organization, including its size, technology, environment, and strategy. Organizational context has been argued to also include the environment of the organization (e.g., Daft, 1998; Tosi and Mero, 2003). In this thesis (see Figure 1.2) a distinction is made between the immediate sphere of influence of the organization (e.g., suppliers, customers, other entrepreneurs) – which is categorized as organizational context – and the broader environment at the country level (e.g., culture, economy, demographics) – which is not directly connected to the entrepreneur and his or her business but influences entrepreneurship and the business environment as a whole.

Sections 1.1 and 1.2 have provided the motivation for studying gender issues in entrepreneurship from a societal and scientific perspective, respectively. From a societal perspective female entrepreneurs are important because of their (increased) number and their contribution to entrepreneurial diversity. We have seen that female entrepreneurship rates vary across countries. From a scientific perspective several themes in female entrepreneurship are understudied and existing research provides inconclusive evidence.

Chapter 2 provides insight into the origin of the variation in female entrepreneurial activity across countries and discusses the factors influencing both female and male entrepreneurship at the country level. Chapter 2 gives a theoretical overview of possible determinants of female and male entrepreneurship, and discusses in what way macro-level factors including technological, economic, demographic, governmental and cultural factors, may (differentially) impact female and male entrepreneurship. Determinants are derived from different streams of literature, including the literature on the determinants of entrepreneurship, studies on female entrepreneurship and the literature on female labor force participation. In this chapter also particular attention is paid to the methodological aspects of studying the origin of female entrepreneurship at the country level. In micro-level studies different definitions can be used to study female entrepreneurship, and this is also true for the macro-level, where female entrepreneurship can be measured in terms of the share of female entrepreneurs in the (female) labor force or the share of women in total entrepreneurial activity, where the latter may be considered a measure of entrepreneurial diversity (as it embodies the proportion of female versus male entrepreneurs). The influence of several macro-level factors on the two measures of female entrepreneurship is tested using data for 29 OECD countries. Total, female and male entrepreneurial activity rates of the Global Entrepreneurship Monitor are used. Findings indicate that (with respect to the absolute measure of entrepreneurial activity), total, female and male activity are largely influenced by the same factors in the same direction. Including gender-specific explanatory variables in the analysis raises the explanatory power of the female analysis. With respect to influences on the share of female activity in total activity it is found that there are two factors that have a significant influence and, accordingly, differentially impact female and male entrepreneurship. These factors include unemployment (which has a smaller negative impact on women) and life satisfaction (which has a positive effect on female entrepreneurship and no effect on male entrepreneurship).

The concept of entrepreneurial diversity (at the macro level) as proposed in Chapters 1 and 2, dealing with the consequences and the determinants of (gender) diversity in entrepreneurial activity is further investigated in subsequent chapters investigating gender differences at the individual and firm level (distinguishing between direct and indirect gender effects).

Where Chapter 2 deals with measurement issues, Chapter 3 deals with definitional issues, presenting an extension of the concept of entrepreneurship at the micro-level,

including entrepreneurial self-perception (i.e., do people perceive of themselves as entrepreneurs?) and different types of entrepreneurial activity.

Chapter 3 addresses the question to what extent women and men – who are involved in different business accomplishments (including starting and running a small business; corporate entrepreneurship, acquiring a business; turning a business around, running a franchise business; managing a large firm; providing services to an entrepreneur, and running a family business) – see themselves as entrepreneurs. These entrepreneurial activities are based upon Vesper's (1999) entrepreneurial typology and are ranked according to the degree of entrepreneurship involved. The ranking according to the degree of entrepreneurship of the selected activities is based upon a review of the literature and a ranking performed by an expert panel. The chapter shows that people who are involved in activities characterized by a higher degree of entrepreneurship are more likely to perceive of themselves as entrepreneurs. The study makes a clear distinction between indirect effects of gender (through business accomplishments) and direct gender effects (controlling for business accomplishments and a range of control variables) on entrepreneurial self-perception. The relationships between business accomplishments, gender and entrepreneurial self-perception are tested using a sample of 207 respondents (i.e., alumni of a large Midwestern US university) of whom 148 male and 59 female. Results support the existence of both direct and indirect effects of gender. When controlled for business accomplishments women are less likely to perceive of themselves as entrepreneurs. In addition, there is some evidence of a negative indirect gender effect (through business accomplishments) on entrepreneurial self-perception, i.e., because women are less likely to be involved in the activity that most clearly predicts entrepreneurial self-perception – starting, running and owning a small business – they are less likely to see themselves as entrepreneurs.

Chapter 4 investigates time allocation decisions of female and male entrepreneurs. The number of working hours within the firm by both female and male entrepreneurs in new ventures is investigated, distinguishing between the effects of the preference for work time and productivity of work time on time investments. The influence of gender (in addition to a range of other factors) on time allocation decisions is studied. To test for the effects on time investments both a linear and a nonlinear model, explaining the number of hours invested in the firm, is used, where the latter distinguishes between preference and productivity effects. The model(s) are tested using a sample of 1256 Dutch entrepreneurs who started their business in 1994 (of whom 919 are male and 337 are female). On average we find that women invest less time in the business, have a similar preference for work time and a lower productivity of work time (as compared to men). In addition, there is evidence of both direct and indirect gender effects on time allocation. There is a negative direct effect of gender on time invested in the business, i.e., when controlled for a large number of other explanatory factors, women work fewer hours than men do. There are no direct effects of gender on either preferences or productivity of work time. However, we do find a negative direct effect of the gender of the entrepreneur on expected profits in 1995. These lower (expected)

profit levels may be attributed to the fact that women tend to also pursue quality and other more non-financial goals. We find negative indirect effects of gender on the number of working hours, the preference for work time and the productivity of work time. It can be argued that on average women are less productive per time unit and that this can be explained by lower levels of human, social and financial capital, as well as a smaller firm size.

Chapter 5 focuses on the influence of the gender of the entrepreneur on the amount and composition of the start-up capital, with the composition of the start-up capital referring to the share of own money (or equity) and the share of bank loans within the total amount of start-up capital. Once again a distinction is made between direct and indirect effects of gender on the amount and composition of start-up capital, with the indirect effects running through a number of personal and business characteristics, including risk attitude, experience with financial management, time investments (part-time versus full-time), networking and sector. Relationships between gender and start-up capital are tested using a sample of approximately 2000 Dutch entrepreneurs (of whom 1500 male and 500 female). It is found that *on average* female entrepreneurs make use of a smaller amount of start-up capital and there is no difference with respect to the use of own capital or bank loans. However, when distinguishing between direct and indirect effects, we find that gender has a negative direct effect on the amount of start-up capital, and also on the share of equity within the start-up capital. These direct effects may be related to factors such as preferences and self-efficacy (that have not been taken into account). We also find a positive direct gender effect on the share of bank loans in the total amount of start-up capital. With respect to indirect gender effects it is found that gender has a negative indirect effect on the amount of start-up capital and the share of bank loans in the start-up capital, while there is a positive indirect gender effect on the share of equity within the start-up capital.

Chapter 6 is an exploratory study investigating possible gender differences in strategy and human resource management within the context of the Dutch real estate brokerage. The empirical study is based on a small sample of 28 Dutch real estate agents (of whom 15 male and 13 female)[50]. This chapter takes a broad perspective, investigating the following aspects of entrepreneurship: motivation, experience, goals and strategy, networks and mentors, and human resource management (including recruitment and selection, training and development, compensation, and leadership style). Findings indicate that there is some evidence for the existence of gender difference (at least within the specific context of the study) and in particular with respect to the motivation for start-up, experience, the use of a mentor, path to entrepreneurship, growth-orientation and leadership. Other differences between female and male real estate agents, for instance with respect to the pursuit of a diversification strategy and the degree of formalization, may be attributable to a difference in business profile (firm age, size and ownership status) rather than the gender of the

[50] The exploratory nature of this study is justified as there have been few studies focusing upon the organizational aspects of women-owned firms.

entrepreneur. Female entrepreneurs are more likely to start their own business, whereas male entrepreneurs are more likely to take over an existing business. Male entrepreneurship in the real estate business tends to be opportunity-driven and female entrepreneurship necessity-driven. Also, gender differences appear with respect to the pursuit of a growth strategy with female entrepreneurs focusing more on continuity than on growth. The leadership style of female entrepreneurs seems to 'fit' their lower growth-orientation and is relatively informal and based upon relationship (rather than hierarchy).

Chapter 7 may be seen as a follow-up study to that presented in Chapter 6. Whereas Chapter 6 provides broad (exploratory) insights into the relationships between gender of the entrepreneur, other personal characteristics (e.g., motivations, experience), goals, strategy and the structuring of human resource management practices, Chapter 7 presents an analysis of the influence of gender on the extent to which human resource management practices are commitment versus control-oriented, controlled for a range of business profile factors, including firm size, firm age, sector, time invested in the business, growth strategy and type of strategy (distinguishing between a low-prices, focus and quality strategy). A sample of 608 Dutch entrepreneurs (of whom 573 male and 35 female) is used to test for the relationship between gender and commitment-orientation of HRM practices. A range of commitment-oriented HRM practices is identified, including employee participation, decentralization, indirect supervision, informal structure, broadly defined jobs, task differentiation, explicit learning, and general training. The study tests for both direct and indirect effects of gender on these HRM (commitment) dimensions. Indirect effects run through the business profile factors. Evidence is found for both direct and indirect effects on the commitment-orientation of HRM practices. On the whole it is found that gender has a negative direct effect on the commitment-orientation of the HRM *system* (which is the sum of all HRM dimensions). In other words: female entrepreneurs are more likely to use control-oriented HRM practices in their firms than male entrepreneurs. More specifically, female entrepreneurs are more likely to employ a centralized organizational structure (where employees are less likely to be allowed to structure their own work or make their own decisions) and directly supervise their employees. With respect to the other HRM practices no evidence is found of direct gender effects. Although several business profile factors (including time investments, service sector, and growth strategy) appear to influence the commitment-orientation of HRM practices, no clear evidence is found for indirect gender effects.

The chapters are based upon separate publications. Chapters 2 is based on a *Max Planck Paper on Entrepreneurship, Growth and Public Policy*: 08-2004 (Verheul, Van Stel and Thurik, 2004); Chapter 3 is published in *Journal of Business Venturing* (Verheul, Uhlaner and Thurik, 2005)[51]; Chapter 4 is based upon an *EIM Scales Paper*:

[51] Reprinted from Journal of Business Venturing 20 (4), Verheul, Uhlaner and Thurik, Business accomplishments, gender and entrepreneurial self-image, p. 483-518, copyright (2005), with permission from Elsevier.

N200411 (Verheul, Carree and Thurik, 2004); Chapter 5 is based upon a publication in *Small Business Economics* (Verheul and Thurik, 2001)[52]; Chapter 6 is published in *International Small Business Journal* (Verheul, Risseeuw and Bartelse, 2002)[53]; and Chapter 7 is based upon an *EIM Scales Paper*: N200402 (Verheul, 2004).

1.5 Conclusions

1.5.1 Introduction

What do we learn from the different studies in this thesis? In this concluding section attention is paid to the evidence of gender differences in the different chapters and an attempt is made to paint a portrait of the average female entrepreneur in a non-Anglo-Saxon country, the Netherlands, based upon the findings in the different studies. Moreover, the social implications of this research will be discussed, focusing again upon the Dutch situation. Finally, this section ends with a discussion of the scientific learning, suggestions for future research on gender issues in entrepreneurship, including a discussion of potential problems.

1.5.2 Gender Differences and Profile

The literature has thus far presented inconclusive evidence with respect to the existence of gender differences in entrepreneurship. The present thesis shows that female and male entrepreneurs differ significantly with respect to a range of aspects of entrepreneurship. The studies show that there is evidence of gender differences in entrepreneurship both at the macro and the micro level. At the macro level the present thesis shows that there is some evidence of a positive relationship between female entrepreneurship (vis-à-vis male entrepreneurship) and economic performance at both the regional and country level.[54] With respect to the determinants of entrepreneurship at the macro level it is found that the factors influencing female and male entrepreneurship are similar rather than different. Most of the factors that influence entrepreneurship in general, also influence female entrepreneurship. However, differential effects have been found for unemployment and life satisfaction, suggesting that the female *share* in self-employment is influenced by those factors.

[52] Reprinted from Small Business Economics, volume 16 (4), 2001, p. 329-346, Start-up capital: Does gender matter?, Verheul and Thurik, copyright (2001), with kind permission of Springer Science and Business Media.

[53] Reprinted by permission of Sage Publications Ltd from: Verheul., I., Risseeuw, P.A. and G. Bartelse, Gender differences in strategy and human resource management: the case of the Dutch real estate brokerage, International Small Business Journal 20 (4), Copyright (© Sage Publications, 2002).

[54] However, the exercises do not take into account a range of other factors influencing economic performance. In particular, the share of the service sector and the innovative capacity of an economy are likely to contribute to economic performance.

At the micro level most of the gender differences are attributable to indirect effects, although some evidence has also been found for direct gender effects. There is evidence of *indirect* gender effects on a broad range of aspects in entrepreneurship, including entrepreneurial self-perception (in Chapter 3), time investments (in Chapter 4), the amount and composition of start-up capital (in Chapter 5), and HRM practices (in Chapter 7). These indirect gender effects can be attributed to gender differences with respect to a range of (underlying) individual and business characteristics, such as firm size (in terms of number of employees of amount of start-up capital), sector, part-time involvement, risk attitude, experience, networking and (growth) strategy.

Even though most of the micro-level studies find some evidence for the existence of *direct* gender effects, these may be residual effects that exist because it is virtually impossible to take into account all factors that influence entrepreneurship. Indeed, Figure 1.2 suggests that there is no direct effect of gender on organizational aspects, and that this effect runs through individual characteristics such as values, motivations and behaviors. However, individual characteristics, including perceptions, values and attitudes are more deeply embedded in the individual entrepreneur and therefore relatively difficult to measure. If all conceivable relevant individual and organizational influences on entrepreneurship (with respect to which women and men can differ) can be measured and taken into account, the evidence of 'pure' gender (or sex) differences may be scarce. If – after this exercise – there are still gender differences, they are likely to be attributed to *perceived* differences, either by the entrepreneur him or herself (i.e., self-perception) or by others (i.e., sexual stereotyping).

The profile of the *average* female entrepreneur in the Netherlands may – on the basis of the findings in the subsequent chapters – be summarized as follows: as compared to male entrepreneurs, female entrepreneurs in the Netherlands on average have smaller firms, are more likely to work in services, are more risk-averse, have lower growth-aspirations, are more likely to combine financial and social goals, are more likely to pursue a niche strategy, invest less of their time in the business, start with less capital, are less likely to have contact with other entrepreneurs, have less industry experience, are more personally involved with their employees, but are also more likely to exercise control over the business and the employees. Although – just like male entrepreneurs – female entrepreneurs have an important contribution to economic performance, the picture of the average female entrepreneur in the Netherlands does not seem very promising. However, it should be noted that most of these characteristics within the female business profile are intertwined and explain each other. For example, there are interrelationships between sector, time investments and firm size. Women often choose for a business in the service sector because this enables them to combine work and household responsibilities (a service firm can also be easily established at the home). However, the service sector is characterized by low barriers to entry and high competition, diminishing the room for firm growth. In addition, the combination of work and private responsibilities of female entrepreneurs also limits the time they can invest in their firms, which hinders women to create a basis for firm growth.

1.5.3 Social Learning and Implications

From a societal perspective the present study is important for different reasons. The studies in the present thesis show that the observed gender differences in entrepreneurship can largely be explained by way of characteristics of female entrepreneurs and their businesses, rather than (only) by way of gender-related obstacles and discrimination. Creating insight into the origin of gender differences in entrepreneurship leads to more awareness with policy makers of the 'real' underlying factors influencing female and male entrepreneurship, which accordingly can be targeted to stimulate high quality entrepreneurship. In this respect, in Chapter 4 it is found that the productivity of working hours for female entrepreneurs is lower than that for male entrepreneurs, and this is partly due to lower amounts of human, social and financial capital of female entrepreneurs. These *capital* constraints may be lifted by the government through (better) provision of information and education; enhancing the (general) availability of financial capital for start-ups[55] and stimulating entrepreneurs to join and become members of networks.

More knowledge about female entrepreneurship or the origin of gender differences in entrepreneurship may also do away with misconceptions with respect to (the characteristics of) female entrepreneurs and their firms. For example, in Chapter 5 it is found that on average female entrepreneurs have lower amounts of start-up capital. By looking into the composition of this start-up capital and dividing gender effects into direct and indirect effects it becomes apparent that the lower amounts of start-up capital of female entrepreneurs are largely due to a smaller firm size, their involvement in the service sector, their lower propensity to take risk, their part-time involvement and less experience with financial management, rather than discrimination by lenders. Moreover, this study also finds a positive direct effect of gender on the proportion of bank loans in the total amount of start-up capital, suggesting that when women and men (with the same profile) make use of credit lines, women have higher amounts of credit in their start-up capital. However, there also is a negative indirect effect on gender on the proportion of bank loans, indicating that bank loan officers are cautious regarding lending to women, but that this caution is based upon their business and personal profile, rather than their gender (i.e., whether they are female or male).

With respect to the economic importance (or performance) of female entrepreneurship, the profile of the *average* female entrepreneur at the micro level (sketched in the previous paragraph) does not provide a particularly 'glamorous' picture of women starting and running businesses in the Netherlands. This may have its effect on economic performance. However, the present thesis shows that at the country and regional level female entrepreneurship (as measured by the share of women in

[55] Because female entrepreneurs tend to be more risk-averse than male entrepreneurs, the relatively small amounts of financial capital used by female entrepreneurs may be attributable to their own choice rather than a restricted availability of financial capital.

entrepreneurial activity) is not harmful, but may be positive for economic performance. And although in Chapter 4 it appears that women tend to be less productive with respect to the time they invest in their firms, this is largely due to indirect gender effects, suggesting that when comparing similar female and male entrepreneurs (with respect to personal and business profile) there is no significant productivity difference. Also, the risk-averse attitude of women is likely to influence the growth patterns of the businesses of women, where women choose to adopt low-or slow-growth strategies because they want to keep control over (the growth of) the business. This cautious approach of women may not only suppress growth of female-owned or-led firms, but may also result in fewer bankruptcies of businesses of women (as compared to those of men). Indeed, Blom (2003) argues that – as compared to men – women in the Netherlands have a better chance of succeeding in business[56].

Although increasingly women start and run businesses in the Netherlands and the female share in both self-employment and new venture creation is among the highest rates of all OECD countries, we have seen that on average female-owned firms remain relatively small and show low growth rates. This may be attributed to the choices of women themselves (focusing on quality rather than quantity), but also to socio-cultural values regarding the distribution of household and childcare responsibilities within the household where women still take on the bulk of household responsibilities even if they also work for a living (limiting the time and effort that can be invested in the firm). Indeed, time restrictions may be an important factor explaining the particular profile of the businesses of female entrepreneurs.

Emancipation in the Netherlands is relatively low, hindering the flow of women into the higher executive jobs or positions within organizations.[57] Although this may stimulate women to start up their own firms, enabling them to be more independent and have flexible working hours, it is likely that time restrictions also play a role within the entrepreneurship of women, in particular since self-employment requires higher time investments as compared to wage-employment. To enable women to participate more fully in the labor market and run large and high-growth firms (if they choose to do so), social roles need to change, establishing a more equal distribution of tasks within the household. To establish this it is important that working women are (to some extent) relieved of the pressure of household responsibilities, stimulating the combination of work and private responsibilities by men through providing facilities such as parental leave, part-time work, and childcare (Duyvendak and Stavenuiter, 2004).

[56] According to Blom (2003) only 14 percent of female entrepreneurs in the Netherlands experience a bankruptcy, which is low as compared to the percentage of female entrepreneurs in the Netherlands. Moreover, a start-up has a higher chance of success if it grows slowly. Men are more likely to end up in a situation where they have high debts (Blom, 2003).

[57] See Parool, October 16th, 2004, Emancipatie stelt weinig voor [Emancipation is low] by Michiel Couzy. This article refers to research done by Annelies van der Horst at the Universiteit Maastricht.

Although in the Netherlands there is a generic entrepreneurship policy, not distinguishing between groups of entrepreneurs (Stevenson and Lundström, 2001), and there are no specific measures in place to stimulate female entrepreneurship (Bruins, 2003), this may not be a problem as long as there are measures taken at a more general level, stimulating and facilitating women who want to participate full-time in the labor market either through self-employment or wage-employment.

1.5.4 Scientific Learning

From a scientific viewpoint the present thesis creates awareness of the interrelatedness of female entrepreneurship with a range other business and individual factors and helps explain the observed gender differences in entrepreneurship. The present thesis avoids misinterpretation of the results, wrongly attributing differences in entrepreneurship to gender (rather than to other explanatory variables that are correlated with gender), by adding relevant control variables in the analysis to single out direct and indirect gender effects. Accordingly, this study departs from the viewpoint that it is relevant to study gender differences in entrepreneurship, but that 'pure' gender effects are hard to find. Instead, research should focus upon the explanation of the distinct characteristics of female and male entrepreneurs and their businesses, including as many relevant 'controls' or intermediary variables as possible.

Although female entrepreneurship researchers have become more aware of the different ways in which the gender of the entrepreneur can influence entrepreneurial characteristics and behaviors, the present thesis advocates more precision in analyzing gender effects. A distinction can be made between *total*, *direct* and *indirect* gender effects, where total effects are the *average* gender differences that can be observed in practice. If, on average, we do not observe any gender differences, this does not mean that there are no (underlying) gender effects. Indeed, Chapter 5 shows that even though on average there is no difference in the composition of start-up capital between female and male entrepreneurs, there still are direct and indirect effects. For example, with respect to the proportion of bank loans in the total amount of start-up capital, we see that the negative indirect gender effect nullifies the positive direct effect.

That the distinction between total, direct and indirect effects is universal, and also applies to other influences than gender, becomes apparent from other studies in the present thesis. Indeed, Chapter 4 shows that although on average firm size (in terms of the number of employees) does not affect the number of hours invested in the firm, there are size effects as firm size negatively influences the preference for work time and positively influences the productivity of work time, both of which positively influence the number of hours invested. Moreover, in a related fashion, in Chapter 7 we see that although firm size does not influence the commitment-orientation of the HRM *system*, it does influence the separate HRM *practices* (that make up the overall system), alternately in a positive and negative way. In general it can be argued that

even if on average no effects are found, researchers should explore these effects more in-depth, uncovering the underlying effects[58].

With respect to the investigation of gender effects, the present thesis emphasizes the distinction between direct and indirect gender effects. However, there is yet another way of investigating the effect of gender on entrepreneurial activity. That is by way of interaction effects. In terms of Figure 1.1 gender may influence the way in which characteristics of the business and the entrepreneur influence the dependent variable. Although for the study in Chapter 3 we did investigate whether there are interaction effects of gender with entrepreneurial activity on entrepreneurial self-perception, we did not find any. However, to have a more complete picture of the effect of gender on entrepreneurship, interaction effects should be explored more fully.

Although there has been criticism with respect to the study of gender differences (in general or within the context of entrepreneurship in specific) – arguing that these differences are absent or relatively unimportant vis-à-vis differences with respect to other variables – within the present thesis there is learning from investigating different dimensions of entrepreneurship using gender as a lens. For example, we have seen that various explanatory factors may be related to gender, and, accordingly that gender can have an indirect impact on a particular dependent variable. Moreover, the distinction between direct and indirect effects has shed light on the underlying reasons for many of the observed gender differences in entrepreneurship. It can be argued that gender is one of the many lenses that can be used for studying the phenomenon of entrepreneurship. By focusing upon one characteristic (i.e., explanatory factor) and its linkages, distinguishing between direct and indirect effects, a better insight can be created in the complex relationships between explanatory factors and their influence on entrepreneurship.

1.5.5 Future Research Suggestions

The present thesis has studied the characteristics of the *average* female entrepreneur, the profile of which has been described in one of the previous paragraphs. However, it may be that new generations operate their businesses in a different way than older generations of female entrepreneurs. It is therefore interesting to investigate the (differences in) profile of younger and older female entrepreneurs. In general, the information on female entrepreneurship can be enriched by investigating different types of female entrepreneurs in addition to the average female entrepreneur. For example, part-time versus full-time female entrepreneurs; married versus single female entrepreneurs; female entrepreneurs with and without children; and women running service versus production firms. Distinguishing between different types of female

[58] For example, studying both direct and indirect effects in the case of gender; studying both preferences and productivity as the basis for explaining influences on time investments; and investigating influences on both HRM practices and the HRM system (as a whole) to explain their focus.

entrepreneurs also enables the comparison with male entrepreneurs in similar circumstances.

Furthermore, this thesis has studied gender diversity in entrepreneurship in terms of individual and business characteristics. Most of the studies deal with business structuring and the input side of the business, focusing upon time investments, financial structure, (human resource) management, and organizational structure. The output side has not been investigated and, although there have been several studies investigating performance differentials between businesses of women and men, there is still need for further research. First, research should explore the type of output female entrepreneurs produce and the extent to which these are unique and contribute to entrepreneurial diversity. For example, because female entrepreneurs tend to pursue combinations of goals, they may also be more likely to engage in social entrepreneurship. Second, we have seen that businesses of women tend to be small, and are less likely to experience growth. Arguing that female entrepreneurship is important for economic performance thus seems a paradox. Future research may be able to unravel this paradox by focusing both upon the quantitative and qualitative contribution of (female) entrepreneurs. To summarize, the relations between female entrepreneurship, entrepreneurial diversity and economic performance should be further explored in empirical studies[59].

Measurement issues are crucial here as female entrepreneurship can be measured in different ways (see Chapter 2). If the aim is to investigate the link between entrepreneurial diversity and economic performance, researchers should take the female share in entrepreneurial activity (as a measure of entrepreneurial diversity) as a starting point. Using female entrepreneurial activity rates (measured vis-à-vis the labor force) is likely to only establish a link between entrepreneurial activity and economic performance, as countries with relatively high total entrepreneurial activity rates also tend to be characterized by relatively high female entrepreneurial activity rates. In Chapter 2 we have seen that these measurement issues are also important when studying the determinants of female entrepreneurship.

Finally, future research on gender issues in entrepreneurship should explore different ways of approaching and measuring gender. In the present thesis gender is measured by way of biological sex. In this way sex and gender coincide. However, since some women may be more masculine than some men (and vice-versa), it is important to also explore other ways of measuring gender, investigating the *degree* of gender and using a continuous variable rather than a dummy variable (i.e., male versus female). As the feminization of society advances and it does not pass over men, studying masculinity versus femininity in the arena of entrepreneurship may be a fruitful alternative and/or

[59] Gender diversity may be just one source of entrepreneurial diversity and advocating entrepreneurial diversity may also imply stimulating other groups of people such as ethnic groups and young people to become entrepreneurs.

complement to studying differences between female and male entrepreneurs in the (near) future.

1.5.6 Pitfalls and Drawbacks of Female Entrepreneurship Research

If gender differences in entrepreneurship are studied, researchers should be careful with respect to the design of their studies and interpretation of the results. An important criticism is that gender studies often overemphasize the focus on gender differences, ignoring similarities. This often results in reporting the results of studies that find significant gender differences, neglecting the discussion of studies where no differences are found (Colwill, 1982). Moreover, findings that indicate that there are no gender differences are sometimes not accepted (Ahl, 2002). And statistically significant results (e.g., finding gender differences) do not always reflect socially significant results (McCloskey, 1998). Hence, if a significant effect of the gender of the entrepreneur is found, it is important that a plausible explanation of this gender effect is provided, possibly through follow-up research. In female entrepreneurship research there is a risk of attaching too much weight to the findings of gender effects. Often, a dummy variable is used and it is easy to find a gender effect, in particular if other (intermediary) factors, correlating with gender, have not been taken into account.

Also, gender research may be dictated by stereotype thinking. Women tend to be viewed as less entrepreneurial than men. Entrepreneurship is often associated with male values, such as decisiveness, risk-taking, and competitive. This stereotype thinking may direct female entrepreneurship studies towards anticipated results or interpretation of the results in conformity with gender stereotypes. For instance, because of this stereotype thinking of the entrepreneur as male, female entrepreneurs may be perceived as less entrepreneurial or even less successful. Hypotheses may be formulated and justified based on this stereotype image. A more 'positive' stereotype is that of the women as democratic leaders building relationships rather than managing from a hierarchical perspective. When researching management styles of female and male entrepreneurs, this image of the female entrepreneur as a relationship builder can be very pervasive and can impose itself upon the research(er) even though there has been only limited evidence of this finding in entrepreneurship research.

Appendix 1.1: Female Entrepreneurship Rates

Table 1.1: Total and female activity rates in self-employment and new venture activity in 23 OECD countries for 2002

Country	Total self-employment	Female self-employment	Total new venture activity	Female new venture activity
Australia	16.35	7.99	8.68	5.58
Austria	8.26	4.82	.	.
Belgium	11.33	7.78	2.99	1.52
Canada	12.22	7.08	8.82	5.96
Denmark	6.65	3.38	6.53	4.24
Finland	7.91	5.49	4.56	3.53
France	8.07	4.28	3.20	2.09
Germany	8.61	5.44	5.16	3.38
Greece	19.30	11.39	.	.
Iceland	12.35	6.32	11.32	7.88
Ireland	11.22	5.39	9.14	5.53
Italy	18.27	12.17	5.90	4.05
Japan	9.18	5.67	1.81	0.63
Luxembourg	5.40	4.71	.	.
Netherlands	10.81	6.87	4.62	3.54
New Zealand	13.48	8.98	14.01	10.55
Norway	6.52	2.69	8.69	4.67
Portugal	13.69	10.80	.	.
Spain	12.87	8.85	4.59	2.58
Sweden	8.05	4.37	4.00	2.60
Switzerland	7.64	8.21	7.13	4.82
UK	10.65	6.01	5.37	3.27
US	9.47	4.97	10.51	8.15
Average (unweighted)	*10.80*	*6.68*	*6.69*	*4.45*

Source: Self-employment data are derived from the COMPENDIA 2002.1 data set (see Van Stel, 2003). Self-employment refers to business owners (employers and own-account workers) including unpaid family workers and excluding the agricultural sector. Total (female) self-employment is the number of business owners per 100 people in the total (female) labor force. Total self-employment rates for Austria, Belgium and Luxemburg refer to 2001, 1999 and 1997, respectively. The total self-employment rate for Switzerland includes the agricultural sector. New venture activity data refer to the Total Entrepreneurial Activity (TEA) rates from the Global Entrepreneurship Monitor. TEA refers to adult people (within the age category of 18 to 64 years old) who are either actively involved in starting a new business or in managing a business that is less than 42 months old (Reynolds et al., 2002, p.5). Total (female) new venture activity is measured per 100 adults in the total (female) adult population. Austria, Greece, Luxembourg and Portugal did not participate in the Global Entrepreneurship Monitor in 2002.

Table 1.2: Female share in self-employment and total entrepreneurial activity in 23 OECD countries in 2002

Country	Female self-employment share (*excluding unpaid family workers*)	Female share in Total Entrepreneurial Activity (TEA)
Australia	0.330	0.321
Austria	0.308	.
Belgium	0.303[a]	0.255
Canada	0.421	0.338
Denmark	0.242	0.325
Finland	0.332	0.387
France	0.394	0.326
Germany	0.296	0.327
Greece	0.238	.
Iceland	0.240	0.348
Ireland	0.201	0.302
Italy	0.251	0.343
Japan	0.292	0.175
Luxembourg	0.214[a]	.
Netherlands	0.327	0.383
New Zealand	0.301	0.377
Norway	0.280	0.269
Portugal	0.336	.
Spain	0.274	0.281
Sweden	0.261	0.325
Switzerland	0.376[a]	0.338
United Kingdom	0.264	0.304
United States	0.398	0.388
Average (unweighted)	*0.299*	*0.322*

Source: Data on the female share in self-employment are derived from OECD Labor Force Surveys. Self-employment refers to business owners (i.e., employers and own-account workers) including unpaid family workers and excluding the agricultural sector. [a] Data for Austria, Belgium, Luxembourg and Switzerland refer to total self-employment (i.e., including agriculture). Data on the female share in Total Entrepreneurial Activity (TEA) are derived from the Global Entrepreneurship Monitor. TEA refers to adult people (within the age category of 18 to 64 years old) who are either actively involved in starting a new business or in managing a business that is less than 42 months old (Reynolds et al., 2002, p.5). Austria, Greece, Luxembourg and Portugal did not participate in the Global Entrepreneurship Monitor in 2002.

Appendix 1.2: Female Entrepreneurship and Economic Performance

Table 1.3: GDP and female self-employment data for 23 OECD countries

Country	GDP 1996	GDP 2002	Relative change in GDP 1996-2002	Female self-employment share 1996
Australia	332023	412539	0.243	0.328
Austria	144777	162197	0.120	0.281
Belgium	176082	203501	0.156	0.292
Canada	558363	698611	0.251	0.416
Denmark	97730	112222	0.148	0.260
Finland	81298	101922	0.254	0.313
France	1054325	1229997	0.167	0.337
Germany	1443944	1581671	0.095	0.284
Greece	81939	102607	0.252	0.205
Iceland	4800	5993	0.249	0.281
Ireland	55609	94066	0.692	0.216
Italy	985009	1087343	0.104	0.234
Japan	2458170	2515011	0.023	0.322
Luxembourg	10100	13281	0.315	0.231
Netherlands	270982	317525	0.172	0.329
New Zealand	54546	63933	0.172	0.303
Norway	92810	105419	0.136	0.303
Portugal	99870	117549	0.177	0.353
Spain	499858	612547	0.225	0.272
Sweden	149829	175463	0.171	0.262
Switzerland	143613	157536	0.097	0.331
United Kingdom	991656	1147082	0.157	0.256
United States	6316729	7650414	0.211	0.392

Note that the variable GDP is measured in purchasing power parity at 1990 prices. Source: EIM COMPENDIA 2002.1 (see Van Stel, 2003). Female self-employment refers to women business owners (i.e., employers and own-account workers) in non-agricultural sectors, including unpaid family workers. The female self-employment share for Switzerland is including the agricultural sector. Source: OECD Labor Force Surveys.

Table 1.4: Per capita income and female firm data for MSAs with over one million inhabitants in the US

Area name MSA	pcY1997	rpcY9702	fshare97	Area name MSA	pcY1997	rpcY9702	share97
Atlanta-Sandy Springs-Marietta, GA	27,710	0.2002	0.266	Milwaukee-Waukesha-West Allis, WI	28,009	0.2249	0.262
Austin-Round Rock, TX	25,369	0.2486	0.260	Minneapolis-St. Paul-Bloomingt., MN-WI	30,760	0.2284	0.285
Baltimore-Towson, MD	27,883	0.2752	0.288	Nashville-Davidson-Murfreesboro, TN	25,946	0.2343	0.252
Birmingham-Hoover, AL	24,445	0.2543	0.254	New Orleans-Metairie-Kenner, LA	23,356	0.2414	0.252
Boston-Cambridge-Quincy, MA-NH	32,877	0.2908	0.266	New York, New Jersey, NY-NJ-PA	33,721	0.2064	0.256
Buffalo-Niagara Falls, NY	23,778	0.1981	0.268	Oklahoma City, OK	21,663	0.2868	0.247
Charlotte-Gastonia-Concord, NC-SC	27,247	0.2142	0.240	Orlando, FL	22,948	0.2022	0.272
Chicago-Naperville-Joliet, IL-IN-WI	29,831	0.1928	0.270	Philadelphia PA-NJ-DE-MD	28,823	0.2404	0.238
Cincinnati-Middletown, OH-KY-IN	26,299	0.2093	0.270	Phoenix-Mesa-Scottsdale, AZ	23,983	0.1875	0.264
Cleveland-Elyria-Mentor, OH	27,558	0.1700	0.260	Pittsburgh, PA	26,117	0.2398	0.251
Columbus, OH	26,134	0.2261	0.270	Portland-Vancouver-Beaverton, OR-WA	27,672	0.1624	0.299
Dallas-Fort Worth-Arlington, TX	28,030	0.2064	0.265	Provid.-New Bedford-Fall River, RI-MA	24,901	0.2367	0.245
Denver-Aurora, CO	29,907	0.2709	0.283	Richmond, VA	26,398	0.2148	0.261
Detroit-Warren-Livonia, MI	28,390	0.2021	0.268	Riverside-San Bernardino-Ontario, CA	19,879	0.2110	0.251
Hartford-West & East Hartford, CT	31,040	0.2241	0.259	Rochester, NY	26,143	0.1666	0.290
Houston-Baytown-Sugar Land, TX	28,076	0.2455	0.242	Sacramento-Arden-Arcade-Roseville, CA	25,242	0.2308	0.288
Indianapolis, IN	26,591	0.2379	0.266	St. Louis, MO-IL	27,046	0.2003	0.289
Jacksonville, FL	24,667	0.2177	0.275	San Antonio, TX	22,312	0.2266	0.251
Kansas City, MO-KS	26,533	0.2236	0.264	San Diego-Carlsbad-San Marcos, CA	26,196	0.3312	0.285
Las Vegas-Paradise, NV	26,283	0.1184	0.265	San Francisco-Oakland-Fremont, CA	35,886	0.3075	0.288
LA-Long Beach-Santa Ana, CA	26,519	0.2273	0.258	San Jose-Sunnyvale-Santa Clara, CA	36,286	0.2656	0.261
Louisville, KY-IN	24,810	0.2360	0.263	Seattle-Tacoma-Bellevue, WA	30,472	0.2483	0.284
Memphis, TN-MS-AR	25,013	0.2216	0.266	Tampa-St. Petersburg-Clearwater, FL	24,540	0.2114	0.268
Miami (Beach)-Fort Lauderdale, FL	26,880	0.2044	0.236	Washington DC-VA-MD-WV	33,824	0.2646	0.298

Source: income data for MSAs are derived from the US Bureau of Economic Analysis (BEA), Regional Economic Accounts, Regional Economic Information System (REIS), through the web page: www.bea.doc.gov/bea/regional/reis (visited October 21st 2004). Personal income is income received by persons from all sources. It is calculated as the sum of wage and salary disbursements, supplements to wages and salaries, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustment, personal dividend income, personal interest income, and personal current transfer receipts, less contributions for government social insurance. This measure of income is calculated as the personal income of residents of a given area divided by resident population of the area. Computing per capita personal income, BEA uses the Census Bureau's annual midyear population estimates. Female firm data are derived from the 1997 Economic Census. The female firm share is calculated as total number of female firms divided by total number of all firms. All firm data are derived from the Company Survey of the 1997 Economic Census (Company Statistics) and female firm data are derived from the Survey of Women-Owned Business Enterprises of the 1997 Economic Census (Company Statistics), downloadable through www.census.gov/prod/ec97/e97cs-1.pdf and www.census.gov/prod/ec97/e97cs-2.pdf, respectively. All firms operating during 1997, except those classified as agricultural, are presented in the 1997 Census Survey. A firm is women-owned when a woman owns the majority interest in the business.

Chapter 2: Explaining Female and Male Entrepreneurship Rates Across 29 Countries

2.1 Introduction

Increasingly, female entrepreneurs are considered important for economic development. It has been argued that not only do they contribute to employment creation and economic growth through their increasing numbers, but also to the diversity of entrepreneurship in the economic process (Verheul and Thurik, 2001). Female and male entrepreneurs differ with respect to their personal and business profile: they start and run businesses in different sectors, develop different products, pursue different goals and structure their businesses in a different fashion (e.g., Fischer et al., 1993; Brush, 1992; Chaganti and Parasuraman, 1996; Verheul and Thurik, 2001; Verheul, 2004; Carter et al., 1997). This diversity is input for a selection process where customers are at liberty to choose according to their preferences and where entrepreneurs learn about what is technological and organizational viable, which – in turn – may lead to a higher quality of entrepreneurship.

Despite the economic importance of female entrepreneurs, their number still lags behind that of male entrepreneurs. According to Reynolds et al. (2002) men are about twice as likely involved in entrepreneurial activity than women. However, there is substantial variation between countries. Table 2.1 presents female, male, and total entrepreneurial activity rates for 29 countries participating in the 2002 Global Entrepreneurship Monitor (GEM), ordered by female entrepreneurial activity rate[60]. We observe that female entrepreneurship rates are high in some countries (e.g., India, Argentina, Brazil) and low in others (e.g., Japan, Belgium, Russia). Moreover, countries with high female entrepreneurial activity rates are also characterized by high total entrepreneurial activity rates[61]. According to Delmar (2003, p. 6): "*women entrepreneurship is therefore closely related to the general framework conditions for entrepreneurship in a specific economy*".

In Table 2.1 female entrepreneurship is measured scaled on (female) population. However, as mentioned, female entrepreneurs are not only important because of their

[60] In 2002, there were 37 countries participating in GEM. For eight of these countries there was no information available for several of the explanatory variables that we use in this study. Therefore, the analysis in the current chapter is restricted to 29 countries.

[61] Indeed, for the 29 countries the Spearman rank correlation coefficient between the female and total entrepreneurial activity rate is 0.96, which is significant at 0.01-level.

numbers (within the population), but also because of their contribution to the diversity of entrepreneurship in economies.

Table 2.1: Female, male, and total entrepreneurial activity rates for 29 GEM countries (2002) [a]

Country	Female	Male	Total	Country	Female	Male	Total
India	14.1	21.4	17.9	Denmark	4.2	8.8	6.5
Argentina	11.5	16.8	14.2	Italy	4.1	7.8	5.9
Brazil	11.1	16.0	13.5	Poland	3.6	5.3	4.4
Mexico	10.3	14.6	12.4	Netherlands	3.5	5.7	4.6
Chile	9.5	21.9	15.7	Finland	3.5	5.6	4.6
Korea	8.6	20.3	14.5	Germany	3.4	6.9	5.2
US	8.1	12.9	10.5	UK	3.3	7.4	5.4
Iceland	7.9	14.8	11.3	Slovenia	2.9	6.4	4.6
Canada	6.0	11.7	8.8	Sweden	2.6	5.4	4.0
South Africa	5.8	7.3	6.5	Spain	2.6	6.6	4.6
Australia	5.6	11.7	8.7	France	2.1	4.3	3.2
Ireland	5.5	12.4	9.1	Russia	1.6	3.5	2.5
Switzerland	4.8	9.4	7.1	Belgium	1.5	4.4	3.0
Norway	4.7	12.6	8.7	Japan	0.6	3.0	1.8
Hungary	4.4	8.9	6.6				

[a] Female, male, and total entrepreneurial activity rates refer to the share of adults in the female, male and total population of 18 to 64 years old who are either actively involved in starting a new business or in managing a business less than 42 months old (Reynolds et al., 2002, p.5).

In Table 2.2 female entrepreneurship is measured in terms of the share in the total number of entrepreneurs. This variable may be seen as a measure of entrepreneurial diversity, as it measures the contribution of women to a country's total stock of entrepreneurs (independent of the size of this stock).

Table 2.2: Female share in total entrepreneurial activity for 29 GEM countries (2002) [a]

Country	Female share in entrepreneurship	Country	Female share in entrepreneurship
South Africa	44.3	France	32.6
Mexico	41.5	Sweden	32.5
Brazil	41.2	Denmark	32.5
Poland	40.8	Australia	32.1
Argentina	40.8	Russia	31.6
India	39.4	Slovenia	30.9
US	38.8	UK	30.4
Finland	38.7	Chile	30.3
Netherlands	38.3	Ireland	30.2
Iceland	34.8	Korea	29.5
Italy	34.3	Spain	28.1
Switzerland	33.8	Norway	26.9
Canada	33.8	Belgium	25.5
Hungary	33.3	Japan	17.5
Germany	32.7		

[a] The female share in entrepreneurship is calculated from Table 2.1 as the female entrepreneurial activity rate divided by twice the total entrepreneurial activity rate.

There are different countries at the higher end of the ranking in Table 2.2, as compared to Table 2.1. This indicates that it is important to make a distinction between measuring female entrepreneurship in these two different ways, i.e., vis-à-vis the population and vis-à-vis the total number of entrepreneurs[62]. Factors that contribute to a higher number of female entrepreneurs (within the female population) in a country may be different from those contributing to a higher diversity of entrepreneurship in the economy (as measured by the share of women in the stock of entrepreneurs)[63]. Depending on the target pursued by policy makers, e.g., increasing numbers or increasing diversity, different policy measures may be used. Hence, it is important to investigate female entrepreneurship both as a share of the population and as a share of the total number of entrepreneurs. This study makes a distinction between these two measures of female entrepreneurship, investigating them separately. More specifically, we try to explain the variation between countries using both measures of female entrepreneurship. A variety of possible determinants will be considered.

[62] Although the Spearman rank correlation coefficient between the female entrepreneurial activity rate and the female share in entrepreneurship is significant, its value is only 0.53, confirming that the two concepts are indeed different.

[63] A factor that has a positive impact on the absolute number of female entrepreneurs may at the same time have a negative impact on the female *share* in total entrepreneurship if its influence on the number of male entrepreneurs is relatively larger than that on the number of female entrepreneurs.

Entrepreneurial activity in the present study corresponds with the Total Entrepreneurial Activity (TEA) rate as proposed in the Global Entrepreneurship Monitor (GEM). TEA is defined as the share of adults in the population of 18 to 64 years old who are either actively involved in starting a new business or in managing a business less than 42 months old (Reynolds et al., 2002, p. 5). Hence, this definition incorporates both nascent entrepreneurs and owner-managers of new firms. An individual is considered a 'nascent entrepreneur' under three conditions. First, an individual has taken action to create a new business in the past year. Second, the individual expects to share ownership of the new firm and, third, the firm has not yet paid salaries and wages for more than three months. A firm is considered a new firm in case salaries and wages are paid for more than three months but less than 42 months (Reynolds et al., 2002, p. 38). In this study entrepreneurial activity of women and men is represented by TEA for females and males, respectively. Entrepreneurial activity rates as well as macro-level determinants are derived from the GEM data set for 2002. We aim to draw conclusions from the way in which macro-level factors explain female and male entrepreneurial activity rates.

Relatively few studies have investigated female entrepreneurship at the macro level, not to mention the difference in determinants of female and male entrepreneurial activity. The present study builds upon Kovalainen et al. (2002), who use GEM 2001 data for 29 countries, and Reynolds et al. (2002, p. 25), who use GEM 2002 data for 37 countries. Although these studies provide some insights into the determinants of female and male entrepreneurial activity at the macro level, the present study develops a full model, explaining female and male entrepreneurial activity rates as well as the female share in entrepreneurship, and in which the interplay of economic, technological, demographic, institutional and cultural variables is accounted for.

The explanatory variables are derived from three streams of literature. *First*, there is the literature on the determinants of entrepreneurship in general. A limitation of this literature (from the viewpoint of the present study) is that it only outlines general determinants of entrepreneurship. As we have argued, female entrepreneurship contributes to the diversity in entrepreneurship and this may imply that there are different factors explaining the share or number of female and male entrepreneurs in a country. Indeed, investigating the involvement of the Swedish population in new venture creation, Delmar and Davidsson (2000) find that the factors explaining the nascent entrepreneurship rate of men have limited value in explaining the nascent entrepreneur status of women. Moreover, investigating differences in the reasons for firm start-up across country and gender, Shane et al. (1991) find that it is difficult to identify start-up reasons that equally apply to both genders and across countries. These studies show there is a need for country-level studies investigating the factors influencing female and male entrepreneurship in general, and their start-up rates in particular.

A *second* stream of literature investigates female participation in the labor force. Female participation in employment has increased considerably in the last decades,

reflecting both changes in the labor supply behavior of women and the demand for female workers. Although the gender gap in employment is narrowing, employment rates (either in number of jobs or in number of hours worked) are still lower for women than for men in most OECD countries (OECD, 2002). Studies on female labor force participation create insight into the characteristics of women in the labor market. For instance, "*What determines the decision of women to (re)enter the labor market?*", "*And to what extent do characteristics of the labor market, or the economic structure of a country, accommodate, i.e., offer opportunities for, female workers?*"

The *third* literature is that on female entrepreneurship (or gender and entrepreneurship). Because the share of women in total entrepreneurial activity still lags behind the share of women in the labor force, and since female entrepreneurship may be influenced by different factors than male entrepreneurship, it is important to also pay attention to specific female entrepreneurship literature (in addition to literature on female labor force participation and entrepreneurship in general). There may be specific gender-related barriers to starting and running a business; and/or women may prefer to be wage-employed rather than self-employed. Hence, women may have specific entrepreneurial capabilities and preferences as compared to men.

The literature on female entrepreneurship mainly consists of studies at the micro level, focusing on the distinctive characteristics of female and male entrepreneurs (e.g., motivations, personality traits, experience) or the features of their firms (e.g., size, goals and strategy, management, performance). Other studies have included environmental characteristics, such as financial constraints or other challenges, women face in the start-up or development of their businesses. With the exception of Reynolds et al. (2002) and Kovalainen et al. (2002), few studies have investigated the influence of macro-level factors on female and male entrepreneurship. The present study aims at extending this stream of literature.

The structure of this chapter is as follows. In Section 2.2, based on a review of the literature, a list of determinants of entrepreneurship is proposed, making a distinction between technological development, economic factors, demographic factors, institutional (or policy) and cultural factors. These factors influence either the demand for entrepreneurship, through the number and type of entrepreneurial opportunities available, or the supply of entrepreneurship, through preferences and capabilities of individuals to become self-employed (Verheul et al., 2002). The influence of these factors on entrepreneurship in general will be discussed and we will give an a priori idea whether these factors have a differential impact on female and male entrepreneurship. In Section 2.3, for the factors that are expected to have a differential impact on female and male entrepreneurship, these a priori ideas are presented as research hypotheses. Hypotheses are formulated in pairs presenting (1) the influence of a factor on entrepreneurship in general and (2) the differential impact of a factor on female and male entrepreneurship. This section also contains a description of the variables used in the empirical analysis, including their sources. The main source is the Global Entrepreneurship Monitor database for 2002. In Section 2.4 the hypotheses

are tested using multiple regression analysis. For each pair of hypotheses, the total entrepreneurial activity rate is the variable to be explained in the first (general) part of the hypothesis, while the female share in entrepreneurship is the variable to be explained in the second (gender) part. As an additional methodological exercise we compute regressions using gender-specific independent variables and compare the results with analyses using general variables (applying to both women and men). This exercise underlines the importance of systematic worldwide data collection by gender. The chapter concludes with recommendations for further research and a discussion of policy implications.

2.2 Determinants of Entrepreneurship and Gender

In this section we will deal with a number of determinants of entrepreneurship categorized according to the following five groups: technological development, economic factors, demographic factors, institutional factors and government intervention, and cultural factors.

2.2.1 Technological Development

New technologies have the potential to lead to the development of new products and services, creating opportunities for the start-ups of new firms (Casson, 1995; Wennekers et al., 2002). In addition, new information and communication technologies lead to diminished transaction costs and lower minimum efficient scales in many industries, enabling small firms to compete in both new and established industries. Hence, it may be argued that small firms benefit from technological development, either directly (producing new products) or indirectly (making use of new production or communication techniques). Because women are less likely than men to operate businesses in high-technology sectors (Loscocco and Robinson, 1991; Anna et al., 1999), it may be expected that technological development is of less influence on female entrepreneurship than it is on male entrepreneurship.

2.2.2 Economic Factors

Per capita income

The influence of per capita income on entrepreneurship is complex. For instance, rising real wages raise the opportunity costs of self-employment making wage employment more attractive (Lucas, 1978; EIM/ENSR, 1996). Indeed, several studies show a negative effect of economic development on self-employment (Kuznetz, 1966; Schultz, 1990; Bregger, 1996). However, these studies tend to be dated and per capita income levels used are relatively low. The negative effect may reflect the exploitation of economies of scale in the post-World War II-period. Other, more recent studies report a positive relation between per capita income and entrepreneurship since the

1970s (Storey, 1999; Carree et al., 2002). From a certain level of economic development, an increase in wealth tends to be accompanied by technological development and an increase in the service sector, developments that – in turn – positively influence entrepreneurship. Combining the negative and positive effects results in a U-shaped relationship between per capita income (economic development) and entrepreneurship. Using several data sources on entrepreneurship, Carree et al. (2002) and Van Stel et al. (2004) provide empirical evidence for this U-shaped relationship. Both female and male entrepreneurial activities are expected to show a U-shaped relationship with per capita income.

Income disparity

In addition to the income level, income disparity can influence entrepreneurship. On the supply side income disparity pushes low wage earners into self-employment and provides people at the other end of the income distribution with the financial means to cover the risks associated with self-employment. Also, income disparity is an indicator of variety in consumer demand (Verheul et al., 2002). A differentiation of demand favors small and new firms over large and incumbent firms because of diminishing scale economies. Studies by Ilmakunnas et al. (1999) and Bosma et al. (2000) provide evidence of a positive influence of income inequality on the self-employment rate. Whether there is a differential effect of income disparity on female and male entrepreneurship may be related to motives of women and men to become self-employed: are they push or pull factors? At the demand side it may be that women are in a better position to serve niche markets, focusing on specific consumer needs and producing custom-made goods and services. However, overall, we have no assumption as to whether income disparity differentially influences female and male entrepreneurship.

Unemployment

Unemployment has consequences for both the valuation of different types of employment and the number of entrepreneurial opportunities created at the demand side. At the macro level a high rate of unemployment can negatively impact the level of entrepreneurship through a decrease in the number of available business opportunities, induced by a depressed economy. At the micro level (the risk) of unemployment is likely to have a positive effect on the level of entrepreneurship through reducing the opportunity costs of self-employment. When there is little chance of finding paid employment, unemployed people are 'pushed' into self-employment (EIM/ENSR, 1996). Audretsch et al. (2001) refer to a 'Schumpeter' and 'refugee' effect. Kovalainen et al. (2002) find a negative association between female unemployment and business start-ups by women. We expect that the negative effect of limited opportunities will dominate the positive 'push' effect of unemployment, in particular when unemployment incorporates the effect of the business cycle[64]. The

[64] In the empirical analysis the effect of the business cycle is not separately accounted for (see Table 2.5).

general unemployment level may be more likely to (negatively) affect female than male employment as women are often involved in service-type and part-time jobs and, accordingly, may be particularly vulnerable to the effects of unemployment. Indeed, in a study by Lin et al. (2001) on the relationship between unemployment and self-employment in Canada it is found that the self-employment rate of women is more negatively responsive to unemployment than the male self-employment rate.

Share of service sector

An expansion of the service sector tends to positively influence entrepreneurship. The service sector is characterized by low initial capital requirements, leading to low barriers to entry and facilitating start-up. Most services are characterized by a relatively small average firm size (EIM/ENSR, 1997). The growth of service industries has also been a major factor in increasing female labor force participation (Oppenheimer, 1970; Ward and Pampel, 1985). Because women are over-represented in the service sector, a higher share of services may be more likely to influence female than male entrepreneurship. On the other hand, as women already occupy more than half of the employment in services, and men increasingly enter service jobs, the differential effect of growth in the number of service jobs on female and male entrepreneurship may be diminishing.

Informal sector

The informal sector (i.e., shadow or underground economy) represents business activity that takes place without knowledge of the government. The informal sector has been referred to as economic activities that are not registered in the national accounts and are not subject to formal rules of contract, licensing, labor inspection, reporting and taxation (ILO, 1984). People may engage in informal activity because of different factors, such as poverty, unemployment, or tax evasion. The reason to engage in informal activity is likely to show differences between developed and underdeveloped economies.

The size of the informal sector may negatively influence entrepreneurial activity as people operating in the informal sector absorb (entrepreneurial) opportunities otherwise available for individuals starting a business in the formal sector. As the present study attempts to explain entrepreneurial activity in the formal sector, it may be argued that the size of the informal sector negatively impacts entrepreneurial activity. The size of the informal sector may differentially impact female and male entrepreneurship. For instance, informal sector activity may appeal to women since it is a relatively easy, often 'close-to-home' manner to earn an additional income, especially when there are no part-time jobs available. Because women still take on the bulk of activities within the household, women have to divide their time between household and work activities. Hence, informal activity and (formal) entrepreneurial activity may be alternative ways for women to realize greater flexibility to combine work and household activities.

Female labor force participation

A higher share of women in the labor force is likely to be accompanied by a lower level of self-employment (as a percentage of labor force), as women are less likely than men to become self-employed. Delmar and Davidsson (2000) find that gender is a strong predictor of nascent entrepreneurship at the micro-level, with men being more likely to have the intention to start a business than women. Uhlaner et al. (2002) find that countries with a higher female share in the labor force are characterized by a lower level of self-employment. Uhlaner et al. (2002) measure self-employment as a percentage of the labor force. However, the entrepreneurial activity rate used in the present study is scaled on population. As a higher female labor share (share of women in total labor force) is generally associated with higher female labor force participation (female labor force as a share of female population), a positive impact of female labor share on the female entrepreneurial activity rate may be expected[65]. Hence, even though women tend to be wage-employed rather than self-employed, higher female labor shares are expected to be associated with higher female entrepreneurial activity rates, simply because the supply of female workers is larger. We do not expect female labor force participation to influence male entrepreneurship. As the total entrepreneurial activity rate is an average of female and male entrepreneurial activity, the general effect may be expected to be positive but stronger for female entrepreneurial activity.

Labor market segregation

There is no clear relationship between labor market segregation and entrepreneurship. However, as the distribution of employment across occupations, sectors and organizational hierarchies is still gender-segmented (OECD, 2002), this may influence female entrepreneurship. Horizontal and vertical labor market segregation influences the number and type of labor opportunities for women. Women mainly occupy the service sector and are over-represented in clerical occupations, sales jobs and life-science/health and teaching professions. From a vertical job segregation perspective women are less likely to occupy top administrative and managerial occupations (OECD, 2002). In addition, women tend to be in jobs with fewer opportunities for promotion (OECD, 2002). If women are dissatisfied with their career opportunities (either due to vertical or horizontal segregation), they are motivated to start a business (Moore and Buttner, 1997; Maume, 1999). Labor market segregation is more likely to affect female than male entrepreneurship.

Economic transition

The economic structure of former communist countries differs from that of countries with a democratic regime. Centrally planned economies emphasize economies of

[65] In the present study we use the share of women in the labor force as an indicator of female labor force participation.

scale, neglecting the potential of small businesses - for both economic and political considerations (Roman, 1990). Although in the former communist or transition countries we see a shift away from unskilled, labor-intensive production towards capital-, technology- and skill-intensive production (Brunner, 1993), the potential of small and medium-sized businesses remains largely untapped. This is the case especially for women who – as compared to men – are twice as less likely to become entrepreneurs (UNECE, 2002). Although self-employment, in the form of cross-border trade, street trade or subcontracting work at home, is often the only avenue of paid employment for women in former communist countries, at the same time they experience gender-related barriers in access to information, networks and collateral (Ruminska-Zimny, 2002). Hence, communism or transition is expected to negatively affect entrepreneurship, with a possibly larger influence on female than on male entrepreneurship.

2.2.3 Demographic Factors

Demographic factors also play an important role at the supply side of entrepreneurship. Several linkages have been identified between self-employment and demographic factors, including age, ethnicity, education level, gender and previous experience in self-employment (Cooper and Dunkelberg, 1987; Evans and Leighton, 1989a; Delmar and Davidsson, 2000; Storey, 1994; Erutku and Vallée, 1997, Reynolds, 1997a)[66].

Education level

Education level influences self-employment. Research indicates that both nascent entrepreneurship (Delmar and Davidsson, 2000; Davidsson and Honig, 2003) and self-employment[67] (Robinson and Sexton, 1994; Cooper and Dunkelberg, 1987) are influenced by educational attainment. However, a study at the macro level by Uhlaner et al. (2002) shows that a higher level of education in a country is accompanied by a lower self-employment rate. The education level of women is an important factor explaining female participation in the labor market (Schettkat and Yocarini, 2001). Employment rates are higher for women with tertiary education, than for women with lower education (OECD, 2002). Labor force participation rises with educational attainment because potential earnings may increase in response to the possession of greater human capital and possession of higher education increases the desire to use the skills acquired (Coleman and Pencavel, 1993). Hence, higher education gives women access to more interesting and better paid occupations, also increasing the opportunity costs of the decision to take care of the household and the children instead of undertaking paid employment (OECD, 2002, p. 71). Indeed, Kovalainen et al. (2002) find a positive relationship between women's nascent and new business start-

[66] Relatively few studies have been able to systematically link demographic factors to business start-ups at the macro-level (Delmar and Davidsson, 2000).
[67] Self-employed people here refer to people who have moved beyond the nascent entrepreneurship stage.

up rate and the educational attainment of women. Education level is likely to influence both entrepreneurship rates of women and men. Although the education level of women (men) is likely to influence female (male) entrepreneurship, we do not have an assumption whether the general education level in a country influences male and female entrepreneurship differently.

Age structure

The likelihood of becoming self-employed varies with age. Many business owners are within the age category of 25 to 45 years old (Storey, 1994; Reynolds et al., 1999). Nascent entrepreneurship rates are highest in the age category of 25 to 34 years old, although some studies suggest that people increasingly start businesses at a younger age (Van Gelderen, 1999; Delmar and Davidsson, 2000). If there are more people within the age category where the likelihood of becoming self-employed is high(est), a country will have more (future) entrepreneurs. However, female entrepreneurs may have a different age profile than male entrepreneurs[68]. Women are more likely to withdraw from employment after they get married, or when they reach the child-rearing age. Charles et al. (2001) find that marriage and the presence of children (e.g., infants, toddlers and school-age children) negatively affect the probability of employment for women. Married women and mothers tend to withdraw from employment, either permanently or temporarily. Due to the process of gender mainstreaming (i.e., emancipation) later generations of working women are expected to have a more similar age profile (as compared to their male counterparts). Hence, when there are more individuals within the age group of 25 to 45 years old, there tend to be more (male) entrepreneurs, and less female entrepreneurs (as they are likely to be married and involved in child-rearing activities).

Immigration

The rate of entrepreneurship varies between different immigrant populations within countries (Van den Tillaart, 2001; Jansen et al., 2003). Hence, immigration will have consequences for the level of entrepreneurial activity within a country. The tendency and ability to become self-employed differs between native people and immigrants (Borooah and Hart, 1999; Bates, 1997). As a result of adjustment problems immigrants have more difficulties finding a job than native people (SER, 1998) and starting a business can be a good alternative for wage-employment. Moreover, immigrants may be more prone to take risks as the decision to leave their native country is a proxy for a low level of risk aversion. However, Clark and Drinkwater (2000) argue that because of language problems immigrants are less likely to be self-

[68] According to OECD (2002) the age profile of working women largely varies between countries (OECD, 2002).

employed[69]. Labor force participation of women tends to differ between immigrant populations. Immigrant groups with the highest shares of married couples have the lowest share of women in the labor force (SCP, 1998). Moreover, for women marriage reduces the likelihood of being an entrepreneur because married men tend to employ their wives in their company to reduce shirking behavior of employees (Portes and Zhou, 1998). In addition, in some cultures it is less accepted that women are employed. Hence, ethnicity may differentially impact the entrepreneurship of women and men, where immigrant women are less likely to be self-employed than immigrant men.

Family situation

The role of the family within society has changed dramatically with fewer women getting married, postponed marriages, an increasing divorce rate and lower birth rates. As put forward by Mincer (1985) declines in family size and in duration of marriage provide an increased scope and motivation for female labor force participation (Mincer, 1985)[70]. Although women are increasingly entering the work force, they are still more likely to be the "*primary parent, emotional nurturer and housekeeper*" (Unger and Crawford, 1992, p. 474; OECD, 2001; Breedveld, 2000). The presence of children influences the employment rates of women and men in opposite directions (OECD, 2002). Parenthood negatively influences female employment, while positively influencing male employment. Mothers are less likely to be full-time employed than women without children. Hence, family situation (e.g., marriage and children) is likely to be of differential influence on the entrepreneurship of women and men. As for the impact of family on entrepreneurship in general, it may be argued that if the head of the household is responsible for maintaining the family, he or she is more likely to choose for a wage-employment than self-employment, because the former involves fewer risks.

2.2.4 Institutional Factors and Government Intervention

Verheul et al. (2002) distinguish between different ways in which the government can intervene in the economic process to influence the rate of entrepreneurship. On the demand side the government can influence both the number and accessibility of entrepreneurial opportunities through investments in R&D, privatization, income policy (*number*), competition policy, (de)regulation, fiscal incentives, labor market regulation, and establishment and bankruptcy policy (*accessibility*). On the supply side the government can influence capabilities and preferences of individuals through financial support schemes or development of the venture capital market; information

[69] Usually immigrants are not familiar with start-up procedures and there is a lack of trust on the part of other business parties, such as investors and suppliers, who consider a lack of knowledge of the home market, language and customs an important handicap for doing business.
[70] Note that this is not a unidirectional relationship.

provision and introducing aspects of entrepreneurship[71] in the educational system. The government can also create the mindset for entrepreneurship through paying attention to entrepreneurship in the media.

Social security

Social security schemes influence the risk-reward profile of entrepreneurship versus other types of employment, and, accordingly, the willingness of people to give up their present state of (un)employment to become self-employed. The possible loss of entitlements to social security when becoming self-employed can constrain entrepreneurial activity[72]. When entrepreneurship means giving up benefits, such as health care coverage, retirement pensions, disability or unemployment insurance, the opportunity costs of self-employment increase, thereby enhancing the preference for salaried employment or unemployment (Verheul et al., 2002). Reynolds et al. (2002, p. 27) report a negative relationship between social security and female entrepreneurial activity. Reimers and Honig (1995) find that the effect of the social security system on labor force participation differs between men and women. It appears that women and men have different time horizons when making labor supply decisions. Women take into account their social security 'wealth' rather than their current earnings, while men are more likely to respond to current earnings rather than to (changes in) future benefits. Hence, higher social security benefits may be more likely to reduce female entrepreneurship than male entrepreneurship.

Taxation

High tax rates reduce the returns on entrepreneurship and can impede the start-up of new firms. Tax payments are at the expense of retained earnings and negatively affect the liquidity position of businesses. As a consequence, high tax rates induce tax avoidance and evasion, for example through moonlighting, thereby reducing the opportunities for legitimate entrepreneurship.[73] Specific taxes can also influence entrepreneurship. For instance, capital tax on new equity can discourage equity financing and high payroll taxes make it difficult for entrepreneurs to hire labor at a price that corresponds with the value of the employee to the entrepreneur (Verheul et al., 2002). From a gender perspective, family-based tax systems (i.e., joint taxation of spouses) induce income splitting among spouses and leads to a decrease in

[71] Entrepreneurial aspects here include both business qualities, such as management, financing and marketing knowledge, and more inherent entrepreneurial qualities, such as creativity, independence and perseverance. The latter qualities should be introduced in an early stage of education (Van der Kuip and Verheul, 2004).

[72] See Henrekson and Johansson (1999) for a discussion of the influence of labor security legislation on firms of different sizes.

[73] On the other hand, it has been hypothesized that self-employment offers better opportunities to evade or avoid tax liabilities than wage-employment (Parker, 1996, p. 466). However, in a recent study Parker (2003) finds that the occupational choice between self-employment and wage-employment is not related to pecuniary factors in general, and tax-related ones in specific. See also Parker and Robson (2004).

employment. A shift from family-based taxes to individual taxation encourages employment entry of wives, especially at high marginal tax rates (Mincer, 1985). In addition, tax-credits to compensate one-earner households will also impact the supply of female labor. Taxes that stimulate women to (re)enter the labor market, may have a positive effect on female entrepreneurship, when women choose to start up their own business. We do not have an a priori idea whether these taxes influence male entrepreneurship.

Flexible work arrangements

A flexible labor market is important for entrepreneurship. Heavy unionization in a country, resulting in a strong regulation of 'hire and fire', increases the risks of self-employment because of the difficulty adjusting the workforce in correspondence with market fluctuations. In recent years the deregulation of labor markets has made wage-employment more insecure and stimulated entrepreneurial activity in many countries (OECD, 2002). In addition, flexible work arrangements may stimulate specific groups to enter the labor force. According to OECD (2002) part-time employment plays an important role determining female employment. Flexibility in work schedules relaxes a demand constraint on female employment. Flexible work arrangements (e.g., part-time work) stimulate female participation in the economy through the possibility of combining work and household responsibilities[74]. The availability of flexible work arrangements provides a strong incentive for women to become wage-employed, and, accordingly, may negatively affect female entrepreneurship. The need for women to start their own business to be better able to combine work and family responsibilities is lower. Kovalainen et al. (2002) find a positive relationship between the percentage of women working part-time and female business start-up activity. Although flexible work arrangements are important for (male) entrepreneurship as it enables business owners to adequately adapt their workforce to market circumstances, it may negatively affect female entrepreneurship when part-time arrangements in wage-employment sufficiently satisfy the need of women to combine responsibilities.

Child care facilities and parental leave

Because women are still responsible for the major part of the child-rearing activities, the availability and price of child-care facilities will influence female, or maternal, employment. When quality child-care is unavailable or costly, more women are likely to discontinue employment or refrain from re-entering the labor market when they become mothers[75]. An increase in the supply of publicly provided day care may lead to a higher employment continuity of women. The government can further stimulate

[74] On the other hand, higher female participation augments the demand for institutional changes in the labor market, e.g., in particular those favouring part-time employment (OECD, 2002).

[75] Also, the structure of the primary schooling system is important in determining female employment. If primary school schedules are irregular and offering lunch breaks with no possibility of remaining during the midday pause this may be a barrier for working women (Charles et al., 2001).

female labor force participation through the distribution of subsidies for child-care as well as arranging for subsidized parental leaves. Gustafsson and Jacobsson (1985) argue that in countries with less generous parental leave schemes, more working mothers give up their jobs. From an employers' perspective, Kovalainen et al. (2002) argue that when wage-employment related support mechanisms are well developed, this may negatively influence female entrepreneurship, as employers will have to make payments to employee support schemes[76]. However, it should be born in mind that whereas parental leave schemes usually are available for wage-employed people, the availability of these facilities is limited for the self-employed[77]. Accordingly, it may be expected that the availability of these facilities in wage-employment negatively affects self-employment (of women). When generous maternity leave schemes are available for wage earners, wage-employment is more attractive vis-à-vis self-employment and few women are willing to give up their wage jobs to start a business. The availability of these schemes in wage-employment is expected to have a greater (negative) impact on female than on male entrepreneurs as child-rearing activities are a gender-specific constraint for working women.

Business licensing

Business licensing may be a barrier for (potential) entrepreneurs as it raises the costs of starting or running a business. These costs can take different forms. A distinction can be made between the amount of money necessary to comply with the establishment legislation, the length of time necessary to complete the legislation procedures and the complexity of the procedures in the establishment process. These costs may lead potential entrepreneurs to shy away from risk-taking (OECD, 1998a). There are still fewer women than men who start up and run small firms. Thus, women may have less experience than men with the administrative procedures that are involved in starting and running a business and, accordingly, may have more problems in dealing with them. Business licensing may therefore be expected to differentially affect the entrepreneurship of women and men.

Availability of capital

The availability of capital is important for entrepreneurship as it lays the foundation for the business (Cressy, 2002). In principle there is no difference in (the importance of) the availability of capital for female and male entrepreneurs. However, there may be specific barriers for specific entrepreneurs to acquire the capital available in the

[76] Kovalainen et al. (2002) find a negative relationship between the statutory maternity leave in days and the rate at which women start new businesses, as well as a negative relationship between the statutory support payment scheme as a percentage of wages and the new business rate of women.

[77] For the countries included in the GEM data set (used for the empirical analysis) no comprehensive information on maternity leave coverage for the self-employed is available. However, we know that for some countries (e.g., Brazil, Denmark, Finland, Hungary, Iceland, Norway, Sweden) maternity leave coverage schemes are also available for the self-employed. Again, in other countries (e.g., Belgium, Spain, United States) special systems have been developed for the self-employed.

market. Financial institutions usually are reluctant to lend money to early-stage and seed businesses because of the high risks involved and the lack of a track record. From a gender perspective women may have more problems securing finance through the regular channels as the business profile of women usually is less favorable for investors than that of men, with women starting smaller business, in services and often working part-time in the business (Verheul and Thurik, 2001). Several studies suggest that acquiring capital is more difficult for women than for men and that women have more difficulty in convincing (potential) investors (Schwartz, 1976; Hisrich and Brush, 1986; Brush, 1992; Carter and Cannon, 1992; Carter, 2000)[78]. Hence, the availability of capital is more likely to affect female entrepreneurship than male entrepreneurship. In addition to the availability of capital in the market, the government can provide female entrepreneurs with special loans, subsidies and funds (see *Policy targeted at female entrepreneurs*).

Policy targeted at female entrepreneurs

The government can stimulate female entrepreneurship through a range of measures. Stevenson and Lundström (2001, p. 46) distinguish between different ways in which the government can stimulate entrepreneurship of under-represented groups, such as women, the better educated, certain age categories, youth, immigrants and unemployed people. Policy measures to stimulate these target groups include enterprise centers, promotion activities, entrepreneurship awards, counseling, training and advisory support, special micro-loan (or venture capital) programs, peer group networks and associations, information products, Web portals, marketing efforts and Mini-Enterprise policy[79]. Despite these target group measures under-represented groups may still have problems starting and running a business if the entrepreneurial culture in a country is weak (Stevenson and Lundström, 2001). It is expected that specific measures targeting female entrepreneurs will stimulate female entrepreneurship. On the whole, male entrepreneurs are not a target group, but benefit from more generic measures.

2.2.4 Cultural Factors

Cultural values play a role in shaping the institutions in a country. Values and beliefs shape behavior and, accordingly, may be assumed also to influence the decision to become self-employed (Mueller and Thomas, 2000)[80]. Entrepreneurial culture is a complex concept, comprising many aspects, including – for instance – how

[78] Other studies do not find significant gender differences (Buttner and Rosen, 1989; Riding and Swift, 1990).

[79] For a detailed description of the Mini-Society approach to teaching entrepreneurship we refer to the work of Marilyn Kourilsky (e.g., Kourilsky, 1974; 1990; 1996; Kourilsky and Ballard-Campbell, 1984; Kourilsky and Carlson, 1997; Kourilsky and Walstad, 1998).

[80] Several studies have focused upon explaining entrepreneurship from a cultural perspective (McGrath and MacMillan, 1992; McGrath et al., 1992; Davidsson, 1995; Mueller and Thomas, 2000; Busenitz et al., 2000; Hofstede et al., 2004; Uhlaner et al., 2002, Noorderhaven et al., 2004).

entrepreneurship is perceived in a country, the recognition that is given to entrepreneurs and the prevailing attitudes towards success and failure. Particularly important for the level of entrepreneurial activity is the extent to which people in a country consider the pursuit of opportunities as socially legitimate (Reynolds et al., 1999). An entrepreneurial culture may be expressed through stories about successful entrepreneurs in the media, respect for those who start a business and the absence of stigma attached to those whose entrepreneurial activities fail. Entrepreneurial culture is expected to positively influence entrepreneurial activity rates of both men and women. We do not consider it likely that entrepreneurial culture differentially impacts female and male entrepreneurs, although women are less likely to become self-employed, even if entrepreneurship in general is stimulated in a country.

More deeply rooted cultural values can also be linked to entrepreneurship. Hofstede (1980, 2001) distinguishes between several cultural indicators, including power distance, individualism, masculinity, uncertainty avoidance and long-term versus short-term orientation[81]. Hypotheses on the relationship between these cultural indicators and entrepreneurship are dependent upon whether you choose to view the relationship from the aggregate psychological traits perspective or the social legitimation (or dissatisfaction) perspective (Davidsson, 1995; Wennekers et al., 2002; Hofstede et al., 2004).

The aggregate psychological trait explanation of entrepreneurship is based on the view that if there are more people with entrepreneurial values in a country, there are also more entrepreneurs. In this view we may expect that low power distance, low uncertainty avoidance, high masculinity and high individualism stimulate entrepreneurship (Shane, 1992; 1993). According to the social legitimation perspective entrepreneurship is determined by the difference in values and beliefs between the population as a whole and potential entrepreneurs. When entrepreneurial individuals are dissatisfied with existing structures (which do not offer them entrepreneurial opportunities), they leave the mainstream organizations and start their own business. Based on the dissatisfaction hypothesis, the assumed relationship between the cultural indicators and entrepreneurship is reverse: countries with high power distance, high uncertainty avoidance, low masculinity and low individualism may be characterized by more entrepreneurship (Baum et al., 1993; Etzioni, 1987; Noorderhaven et al., 2004). Research is inconclusive as to which relationship(s) between the cultural indicators and entrepreneurship will prevail. Moreover, different relationships may exist between the cultural indicators and female and male entrepreneurship. From an aggregate psychological traits perspective it may be argued that women are less likely to possess entrepreneurial traits. From a social legitimation perspective, both women and men are confronted with social and organizational structures that do (not) offer entrepreneurial opportunities. Vroom (1982) shows that life-dissatisfaction is often positively related to job-dissatisfaction. Hence, people who are dissatisfied with their

[81] Of these dimensions, in particular power distance, individualism and uncertainty avoidance have been studied in relationship to entrepreneurship (Wennekers et al., 2002).

job may also be expected to be dissatisfied with life. Brayfield et al. (1957), as cited in Vroom (1982), argue that men who are dissatisfied with their jobs, are more likely to be dissatisfied with life in general than women who are experiencing job dissatisfaction. It may be argued that life dissatisfaction is more likely to be related to job satisfaction for men than for women, in particular since employment often absorbs more time in the lives of men. Accordingly, we expect that men who are dissatisfied (with their job) are more likely to come into action and start their own business than women who are dissatisfied. From this perspective dissatisfaction with life is expected to have a larger impact on male than on female entrepreneurship.

2.3 Hypotheses and Variables Used

Combining insights from the three different streams of literature on the determinants of entrepreneurship in general, female labor force participation and the characteristics of female entrepreneurship, we will formulate hypotheses on macro level determinants of female entrepreneurship. Hypotheses are formulated for those factors that are considered important in explaining female entrepreneurship (as opposed to male entrepreneurship) and for which data is available across the countries included in the GEM 2002 data set. For each group of determinants, i.e., technological, economic, demographic, institutional and cultural factors, one or more factors are selected limiting the number of explanatory variables in the empirical analysis to ten. This is necessary as the number of observations (i.e., countries) with a full set of measurements for all variables is limited, i.e., 29 countries.

Technological factors:

H1: Technological development has a positive influence on entrepreneurial activity[82]

H1a: Technological development has a larger influence on male entrepreneurship than on female entrepreneurship.

Economic factors:

H2: Income level has a U-shaped relationship with entrepreneurial activity.

H2a: Income level has a U-shaped relationship with both female and male entrepreneurial activity[83].

H3: Unemployment has a negative influence on entrepreneurial activity (at the macro level).

[82] In this study technological development is operationalized as R&D investments per capita.

[83] Here it is proposed that there is no differential effect of income level on female and male entrepreneurship.

H3a: Unemployment has a larger influence on female entrepreneurship than on male entrepreneurship.

H4: The share of service sector employment has a positive influence on entrepreneurial activity.

H4a: The share of service sector employment has a larger influence on female entrepreneurship than on male entrepreneurship.

H5: The size of the informal sector has a negative influence on formal entrepreneurial activity.

H5a: The size of the informal sector has a larger influence on female than on male entrepreneurship.

H6: Female labor force participation has a positive influence on entrepreneurial activity.[84]

H6a: Female labor force participation has a positive influence on female entrepreneurship and no influence on male entrepreneurship.

H7[85]: Former communist countries are characterized by lower levels of entrepreneurial activity than other countries.

H7a: Communism or economic transition has a larger influence on female than on male entrepreneurship.

Demographic factors:

H8: The importance of family has a negative influence on entrepreneurship.

H8a: The importance of family has a larger influence on female than on male entrepreneurship.

Institutional (policy) factors:

H9: The availability of maternity leave schemes negatively influences entrepreneurship.

H9a: The availability of maternity leave schemes has a larger influence on female than on male entrepreneurship.

Cultural factors:

H10: Dissatisfaction with life positively influences entrepreneurship.[86]

[84] The fact that the entrepreneurial activity rate for GEM is scaled on population and not on labor force (or total employment) is crucial for this hypothesis.
[85] Communism (as represented by Hypothesis 7) may also be regarded as a cultural (or political) factor, especially since the economic structure was a result of the political and socio-cultural ideology.
[86] This is in line with the social legitimation perspective.

H10a: Dissatisfaction with life has a larger influence on male than on female entrepreneurship.

In our regression analyses, we will apply the following criteria to accept hypotheses. For the general hypotheses, the impact of a variable on the entrepreneurial activity rate should be significant at the 10 percent level (two-tailed test) with the predicted sign. For the gender hypotheses two conditions have to be met. First, the impact of a variable on the female share in entrepreneurship has to be significant at the 10 percent level, with the predicted sign. Second, the sign of the effect should correspond with that in the general hypothesis (i.e., the effect on TEA).

Table 2.3 presents a list of both dependent and independent variables used in this study, including their sources. The independent variables correspond with the hypotheses formulated above.

Table 2.3: Description of variables

Dependent variables	**Variable description**
Total entrepreneurial activity	Share of people in age group of 18 to 64 years who are actively engaged in the start-up process or managing a business less than 42 months old in 2002 (in %). *Global Entrepreneurship Monitor*
Female entrepreneurial activity	Share of women in age group of 18 to 64 years who are actively engaged in the start-up process or managing a business less than 42 months old in 2002 (in %). *Global Entrepreneurship Monitor*
Male entrepreneurial activity	Share of men in age group of 18 to 64 years who are actively engaged in the start-up process or managing a business less than 42 months old in 2002 (in %). *Global Entrepreneurship Monitor*
Female share in total entrepreneurial activity	Share of female entrepreneurs in total number of entrepreneurs, derived from female and male entrepreneurial activity rates described above (in %). *Global Entrepreneurship Monitor*
Independent variables	**Variable description**
R&D expenditure	Total R&D expenditure per capita in 2000 (per 1000 US$), *World Competitiveness Yearbook.*
Per capita income (squared)	Gross national income per capita in 2001 in purchasing power parities per 1000 US Dollars, 2002, *World Bank (WDI)*
Unemployment	Unemployment rate for 2001, *World Competitiveness Yearbook 2002.*
Service employment	Employment in the service sector as percentage of total employment in 2000, *World Competitiveness Yearbook 2001.*
Informal sector	Expert question: "What percentage of businesses in your country would you guess are unofficial or not registered?" (1=less than 5%; 2=6-10%; 3=11-20%; 4=21-30%; …..; 8=61-70%; 9=more than 70%). *Global Competitiveness Report 2001-2002.*
Female labor share	Female employment as a percentage of the total labor force in 2001, *World Competitiveness Yearbook 2002.*
Former communist country	Dummy variable former communist country. Value '1' for Russia, Hungary, Poland, Slovenia; value '0' for other countries.
Importance family	Average country score to the question: "How important is family in your life?" (1=very important; 2=rather important; 3=not very important; 4=not at all important). *World Values Surveys & European Values Surveys, cumulative data: 1981-84; 1990-93; 1995-97.* In this study we use ascending values of this variable for a straightforward interpretation of the results.
Maternity leave coverage	{Maternity leave benefits (share of wages paid covered)} * (i.e., times) {time during which maternity benefits are paid (in weeks)} / divided by 100. *World Development Indicators (World Bank) & Social Security Worldwide 2003.*
Life satisfaction	Average country score to the question: "All things considered, how satisfied are you with your life as a whole these days?", using a 10-point Likert scale from '1' dissatisfied, to '10' satisfied. *World Values Surveys and European Values Surveys, cumulative data: 1981-84; 1990-93; 1995-97.*

2.4 Empirical Analysis

In this section the hypotheses formulated in Section 2.3 are tested. We start with a correlation analysis. Subsequently, to test the general hypotheses, we estimate regression models explaining total entrepreneurial activity rates of women and men (Regression Analysis I). This is followed by a regression analysis explaining the female share in entrepreneurship, to test the specific gender hypotheses (Regression Analysis II). Finally, as a separate methodological exercise we investigate the extent to which using gender-specific or general independent variables influences estimation results (Regression Analysis III).

2.4.1 Correlation Analysis

Correlation between dependent and independent variables

Table 2.4 reports the means, standard deviations and correlation coefficients of the major variables in this study. From Table 2.4 we see that a large number of the selected independent variables in this study are significantly related to the major dependent variable, i.e., female entrepreneurial activity. In particular, the following variables are significantly correlated with female entrepreneurship: female labor share (r=-0.59, p<0.01), per capita income (r=-0.48, p<0.01), informal sector (r=0.48, p<0.01), importance of family (r=0.40, p<0.05), R&D investments (r=-0.39, p<0.05), and squared per capita income (r=-0.38, p<0.05).

Considering the hypotheses formulated earlier, there are two striking observations: both the size of the informal sector and the female labor share have a highly significant correlation with the female entrepreneurial activity rate with a sign opposite to what is expected in the hypotheses. For the informal sector we find a positive sign (where we expected a negative one), and for female labor share we find a negative sign (where we expected a positive one). Closer inspection of the data reveals that a small number of countries (India, Argentina, Brazil and Mexico) is responsible for these counterintuitive correlations. These four countries have the highest female entrepreneurial activity rates (see Table 2.1) and combine these high rates with both a relatively large informal sector (together with Russia these four countries form the top five)[87] and a low share of women in the labor force. Excluding the four countries (i.e., using 25 observations), the partial correlation of the female entrepreneurship rate with both the size of the informal sector and the female labor share is -0.18, and both correlations are not significant.

[87] The values for the informal sector variable range from 3.8 to 4.8 for the four countries and this corresponds with an estimated size of the informal sector of approximately 20 to 35 percent of the economy (see Table 2.3). Note that 'informal' is not the same as 'illegal'.

The four countries also score high on the female share in entrepreneurship: they are among the six countries with the highest female share in entrepreneurship (see Table 2.2). This observation is consistent with the argument that particularly women may be involved in informal activities[88], as was discussed in Section 2.2[89]. In fact, the four countries are the only ones in our data set for which the share of women in the total number of entrepreneurs is higher than the share of women in the labor force. As the latter variable is taken from official statistics (from national bureaus of statistics), it is not inconceivable that (female) entrepreneurs in the informal sector are not counted in the labor force measure, but are counted in the TEA measure of GEM[90].

Given the specific pattern for India, Argentina, Brazil, and Mexico (i.e., high entrepreneurial activity rates, large informal sector, low female labor share), we consider it likely that for these countries a substantial number of entrepreneurs measured in the Total Entrepreneurial Activity (TEA) rate of the Global Entrepreneurship Monitor (GEM) are owner-managers of unofficial businesses, i.e., they are part of the informal sector. Hence, the above observations should define an important topic for the Global Entrepreneurship Monitor research agenda that has been largely unexplored up to now: just how many 'informal' entrepreneurs are included in the entrepreneurship measures of the Adult Population Survey, and how does this affect empirical analyses that make use of the GEM data base? This issue is of major importance, especially for studies focusing on GEM countries with large informal sectors.

Correlations between the dependent variables

As can be seen from Table 2.4 the correlations between the dependent variables total, female and male entrepreneurial activity are very high. Accordingly, we may expect that the determinants of total, female and male entrepreneurial activity are more similar than different.

Correlations among independent variables

With respect to the independent variables, we observe high correlations between R&D investments, per capita income (squared), and informal sector. The high positive correlation between R&D investments and per capita income (r=0.81, p<0.01) implies that, ceteris paribus, rich countries invest more in R&D than poor countries, i.e., rich

[88] Note that the correlation between female share in entrepreneurial activity and size of the informal sector is positive and significant (r=0.54, p<0.01). See Table 2.4. Remarkably, Chile scores *low* on both variables, contributing to the positive relationship. Chile combines a score of only 1.7 on the informal sector index, with a low share of women in total entrepreneurship (30.3 percent). See Table 2.2. Apparently, informal entrepreneurship by women occurs less often in Chile as compared to other Latin American countries like Argentina and Brazil.

[89] Note that the negative hypothesis 5 relates to *official* or *formal* entrepreneurial activity.

[90] The questions in the GEM Adult Population Survey do not necessarily exclude owner-managers of unofficial businesses. In particular, respondents who indicate that they "sell any goods or services to others" are included in the TEA index. The Adult Population Survey is a survey among *randomly selected* adults does also not give reason to assume that unofficial entrepreneurs are excluded from the TEA count.

countries have the means to make these investments. The high negative correlation between per capita income and informal sector (r=-0.81, p<0.01) may be explained by the fact that poorer countries are more likely to be characterized by a large informal sector, where people without a formal job search other (informal) means to earn a living. Also, life satisfaction is correlated with several of the other explanatory variables, including per capita income (r=0.64, p<0.01), service sector employment (r=0.57, p<0.01), R&D investments (r=0.56, p<0.01), economic transition or communism (r=-0.56, p<0.01), unemployment (r=-0.50, p<0.01), and informal sector (r=-0.49, p<0.01). Hence, ceteris paribus, in richer, more stable countries people are more satisfied. The finding that unemployment is negatively related to life satisfaction is in accordance with Vroom (1982).

Table 2.4: Pearson correlation between dependent and independent variables (*N*=29)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. total entrepreneurial activity	1														
2. female entrepreneurial activity	0.97**	1													
3. male entrepreneurial activity	0.99**	0.92**	1												
4. female *share* in total entrepreneurial activity	0.37*	0.55**	0.26	1											
5. R&D investments	-0.36	-0.39*	-0.33	-0.38*	1										
6. per capita income	-0.40*	-0.48**	-0.34	-0.45*	0.81**	1									
7. per capita income squared	-0.31	-0.38*	-0.27	-0.39*	0.83**	0.98**	1								
8. unemployment	0.01	0.12	-0.06	0.45*	-0.51**	-0.54**	-0.55**	1							
9. service sector employment	-0.29	-0.33	-0.25	-0.15	0.50**	0.69**	0.64**	-0.13	1						
10. informal sector	0.33	0.48**	0.24	0.54**	-0.67**	-0.81**	-0.77**	0.45*	-0.52**	1					
11. female labor share	-0.60**	-0.59**	-0.58**	-0.07	0.40*	0.48**	0.44*	-0.14	0.40*	-0.33	1				
12. former communist country	-0.31	-0.28	-0.31	0.03	-0.38*	-0.39*	-0.42*	0.13	-0.45*	0.23	0.25	1			
13. importance family	0.44*	0.40*	0.45*	0.17	-0.04	-0.01	0.04	0.17	0.17	-0.01	0.02	-0.14	1		
14. maternity leave coverage	-0.09	-0.10	-0.08	-0.05	0.09	0.06	0.04	-0.19	0.01	-0.03	0.30	0.18	0.02	1	
15. life satisfaction	0.07	0.05	0.08	0.01	0.56**	0.64**	0.66**	-0.50**	0.57**	-0.49**	0.13	-0.56**	0.11	0.22	1
MEAN	7.79	5.43	10.13	33.69	0.40	20.80	510.30	7.90	64.27	2.38	42.95	0.14[a]	-1.16	19.79	7.17
STANDARD DEVIATION	4.32	3.38	5.43	5.72	0.37	8.96	339.60	5.85	11.58	1.04	4.39	0.35	0.06	14.68	0.79

Note: * Correlation is significant at the 0.05-level (2-tailed); ** Correlation is significant at the 0.01-level (2-tailed).

[a] Former communist country is a dummy variable, with value '1' for four countries, and value '0' for the other 25 countries. See Table 2.3.

2.4.2 Regression Analysis I: Explaining Entrepreneurial Activity Rates

To investigate the determinants of the number of entrepreneurs in a country, regression analyses are performed explaining total, female and male entrepreneurial activity (i.e., nascent entrepreneurs and new firms as a percentage of adult population). Corresponding with the hypotheses, eleven explanatory variables are included. Results are presented in Table 2.5.

Table 2.5: Regression analysis explaining entrepreneurial activity

	Entrepreneurial activity					
	Total		Female		Male	
	B-value	*t*-value	*B*-value	*t*-value	*B*-value	*t*-value
Constant	57.91	**4.06**	33.24	**3.09**	81.58	**4.39**
R&D investments	-4.57	-1.87*	-2.42	-1.31	-6.65	-2.09*
Per capita income	-1.00	**-2.37**	-0.80	**-2.51**	-1.21	**-2.22**
Per capita income squared	0.019	1.98*	0.016	**2.18**	0.023	1.79*
Unemployment	-0.28	**-2.43**	-0.13	-1.46	-0.44	**-2.88**
Service sector employment	-0.001	-0.02	-0.01	-0.20	0.02	0.16
Informal sector	-0.67	-0.77	0.24	0.36	-1.55	-1.36
Female labor share	-0.15	-0.87	-0.10	-0.76	-0.19	-0.86
Former communist country	-4.95	**-2.28**	-3.13	-1.90*	-6.70	**-2.37**
Importance family	26.17	**2.84**	17.04	**2.44**	35.00	**2.91**
Maternity leave coverage	0.001	0.04	-0.01	-0.23	0.01	0.19
Life satisfaction	0.53	0.51	1.01	1.28	0.06	0.05
R-square	0.803		0.817		0.788	
N	29		29		29	

Note: t-values in bold represent a significance level of 0.05 and * represents a significance level of 0.10.

From Table 2.5 it can be seen that total, female and male entrepreneurial activity are largely influenced by the same factors in the same direction, although for several factors the effects seem to be less strong for female entrepreneurial activity. We will discuss the (difference in) size of the effects later.

Several variables influence total entrepreneurial activity in a country, including R&D investments, (squared) per capita income, unemployment, former communist country, and importance of family.[91] The negative effect of R&D investments on total

[91] The number of explanatory variables (eleven) is relatively large, given the number of observations (29). However, the results for the six variables mentioned have been tested to be robust. In a regression excluding the variables with an insignificant influence, the estimated effects are fairly similar to those

entrepreneurial activity is in contradiction with Hypothesis 1. It may be argued that (high) investments in R&D are an indicator of the presence of large firms, which usually invest more in R&D than small businesses and tend to be more aware of their R&D investments and more willing to report on them. Also, R&D investments may be considered an input variable, which does not guarantee innovative output. Finally, the relationship between technological development and entrepreneurship may be non-linear. Assuming a U-shaped relationship[92], it may be argued that many of the less developed countries included in the empirical study are still in the 'Schumpeter II' phase (declining end of the U-shape), where the technological regime fosters economies of scale and scope, thereby reducing opportunities for small firms.

In conformity with Hypothesis 2, we find that the relationship between income level and entrepreneurship is U-shaped: per capita income negatively influences entrepreneurship and per capita squared positively influences entrepreneurship, indicating a downward and upward slope of the relationship, respectively. Hence, from a certain level of economic development onwards the negative impact of per capita income turns into a positive effect. Both the linear and the squared per capita income terms are significant. The estimated curves for female and male entrepreneurship are depicted in Figure 2.1[93].

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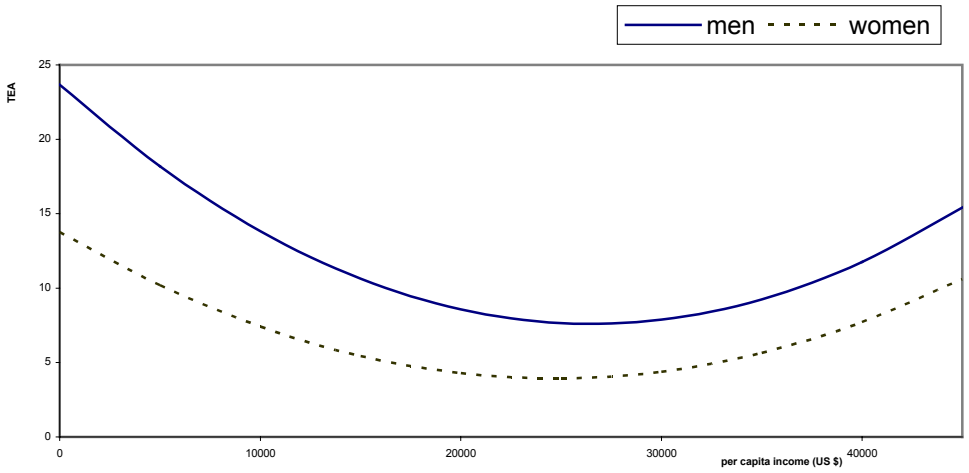
reported in Table 2.5. Also, with respect to the variables with an insignificant influence, additional tests revealed that their insignificance is not due to multicollinearity. For the three regressions in Table 2.5, only per capita income and per capita income squared have significantly high values for the variance inflation factor (VIF). This is not surprising given that these variables correlate heavily by construction. Removing and per capita income squared, the value for VIF is not significant for all variables, indicating an absence of multicollinearity problems. Leaving out per capita income squared, none of the insignificant variables from Table 2.5 become significant, *except for* life satisfaction in the female TEA regression, which becomes significant at 10 percent level. This is consistent with the results from the female share regressions, as we will see in the section discussing Regression Analysis II.

[92] Van Stel et al. (2004) provide empirical support for a U-shaped relation between the 'innovative capacity index' (developed in the World Economic Forum's *Global Competitiveness Report*) and the nascent entrepreneurship rate in the Global Entrepreneurship Monitor. The downward part of the curve reflects the Schumpeter II regime (creative accumulation), where the innovative advantage lies with large, established enterprises. The upward part of the curve reflects the Schumpeter I regime (creative destruction), where the technological regime is more favorable to innovative entry.

[93] The intercept term is calculated on the basis of mean values of the explanatory variables in Table 2.5 (excluding per capita income (squared)). Hence the y-axis is not crossed at the estimated constant terms from Table 2.5. Also note that the most right part of the curves are out-of-sample predictions as the highest value of per capita income in our data set is 35,000 US$.

Figure 2.1: Male and female entrepreneurial activity rates (%) as function of per capita income



We can see that the shape of these curves is quite similar for female and male entrepreneurial activity and that it is mainly the level of entrepreneurial activity that differs, in accordance with the figures in Table 2.1. Hypothesis 2a is supported.

The level of unemployment has a negative effect on entrepreneurial activity, outweighing the positive 'refugee' effect of unemployment. Hence, at the macro level unemployment is accompanied by a decrease in the number of entrepreneurial opportunities, canceling out the positive impact of unemployment as a push factor on entrepreneurship at the macro level[94]. This is in support of Hypothesis 3. Former communist countries (i.e., countries in economic transition) are characterized by relatively low levels of entrepreneurial activities. Although the importance of economies of scale is rapidly decreasing in these countries, adopting more democratic and liberal political and economic structures, it seems that entrepreneurship is still relatively underdeveloped as compared to other countries that are not experiencing this economic transition. Hypothesis 7 is supported. Moreover, as opposed to what is predicted in Hypothesis 8, the importance of family (i.e., high family values) positively influences entrepreneurial activity. Because entrepreneurship (i.e., self-employment) involves high risk and time investments, it is often assumed that entrepreneurship is not a 'viable' option for people who run a household and have high family values. However, self-employment may also enable household members to adjust time schedules to family needs as it usually involves more flexible working

[94] Note that in the analysis the effect of the business cycle has not been taken into account. This effect may be captured in the negative effect of unemployment on entrepreneurial activity.

hours. Moreover, family support and the possibility to work from the home may also play a role. We do not find evidence of effects of size of the service sector, the informal sector, female share in labor force, maternity leave coverage and life satisfaction on entrepreneurial activity. Hypotheses 4, 5, 6, 9 and 10 are not supported.

2.4.3 Regression Analysis II: Explaining the Female Share in Entrepreneurship

In the previous section we investigated determinants of the number of female and male entrepreneurs in a country (scaled on population). However, we are also interested whether certain variables influence female and male entrepreneurship differently. In other words, what determines the composition or diversity of entrepreneurship in a country? Using the outcomes in Table 2.5 is not appropriate for investigating the determinants of the diversity of entrepreneurship as the coefficients in this table refer to numbers of entrepreneurs in the population. The coefficients in the regressions explaining the number of male entrepreneurs (in the male population) are generally larger than those in regressions explaining the number of female entrepreneurs (in the female population) (see Table 2.5). This can be attributed simply to the fact that there are more male entrepreneurs than female entrepreneurs (see Table 2.1). Accordingly, from Table 2.5 we cannot read whether the relative impact of variables is different for female and male entrepreneurship, i.e., whether the composition or diversity of entrepreneurship is influenced. To investigate differential effects on female and male entrepreneurship, we propose a regression explaining the female share in the total number of entrepreneurs using the same set of explanatory variables as in Table 2.5[95]. Results are presented in Table 2.6. Note that to correctly interpret and understand the differential effects, the results in Table 2.6 should be studied alongside the findings in Table 2.5. More specifically, a positive effect on the female share of entrepreneurs may be interpreted in two different ways: a variable may either have a (relatively) larger positive or a (relatively) smaller negative effect on female entrepreneurship (as compared to male entrepreneurship). Which of these two effects is valid can be deduced from Table 2.5.

[95] An alternative way to investigate this is to write the model in natural logarithms. However, the occurrence of various zero values in our data set makes this method infeasible.

Table 2.6: Regression analysis explaining female *share* in total number of entrepreneurs

	B-value	*t*-value
Constant	-20.4	-0.8
R&D investments	-2.4	-0.6
Per capita income	-1.2	-1.6
Per capita income squared	0.02	1.3
Unemployment	0.36	**1.75***
Service sector employment	0.013	0.1
Informal sector	1.5	1.0
Female labor share	0.46	1.55
Former communist country	1.0	0.3
Importance family	-4.0	-0.2
Maternity leave coverage	-0.074	-1.1
Life satisfaction	5.2	**2.9****
R-square	0.656	
N	29	

* and ** represent significance levels of 0.10 and 0.01, respectively.

From Table 2.6 we see that only two factors (unemployment and life satisfaction) significantly influence the female share in entrepreneurship. The effect of unemployment is positive. This means that the negative effect of unemployment on entrepreneurial activity is (significantly) smaller for women than for men (see Table 2.5). This is opposite to what was predicted in Hypothesis 3a. It may be that the positive (push) effect of unemployment is larger for women than for men, i.e., women are more likely to start a business out of necessity in a situation of economic recession than men. Indeed, Reynolds et al. (2002) find that – although men are more likely to be involved in entrepreneurial activity – the difference in the entrepreneurial activity rate of men and women is smaller for 'necessity' entrepreneurship than for 'opportunity' entrepreneurship.

We also find a positive effect of life satisfaction. This has to be interpreted as a positive effect of life satisfaction on female entrepreneurship, while such an effect is non-existent for male entrepreneurship (see Table 2.5). Note that this is in contradiction with Hypothesis 10a. Maybe this result can be explained by the fact that, as compared to men, women tend to be more driven by emotions, i.e., they make more intuitive decisions. Accordingly, for women it may be more important that they feel confident (about themselves and the environment) before they decide to start a business. For men the decision to start a business may be less dependent on their emotional wellbeing.[96]

[96] Reversed causality (i.e., a positive effect of self-employment on satisfaction of women), is not an issue here as entrepreneurial activity refers only to a *part* of population (20 percent at most, see Table 2.1), while

No effects on the female share in entrepreneurship are found for the remaining variables although – given the small number of observations – the *t*-value of 1.55 for the effect of the share of women in the labor force may be considered high. Hypotheses 1a, and 4a through 9a, are not formally supported.

The significant effect of life satisfaction in Table 2.6 again demonstrates that studying the number of entrepreneurs (in the population) and studying the gender composition of entrepreneurship (as measured by the female share in total entrepreneurial activity) is not comparable, as Tables 2.5 and 2.6 report different *t*-values. Whereas in Table 2.6 the coefficient of life satisfaction is highly significant, in Table 2.5 the coefficients of life satisfaction have low *t*-values[97]. It also demonstrates the importance of applying a full model where the interplay of variables is accounted for.[98] Note that in Table 2.4 the direct correlation coefficient between female share in total entrepreneurial activity and life satisfaction is only 0.01. In this respect, we also refer to the positive (and intuitive) effect of the share of women in the labor force on the share of women in the stock of entrepreneurs. In Table 2.6 the *t*-value is 1.55, whereas the direct correlation is -0.07 (see Table 2.4).

2.4.4 Size of the Effects

In the previous sections we focused mainly on the significance and the sign of the estimated coefficients in the various regressions. However, we are also interested in the size of the effects. How much does total entrepreneurial activity (TEA) – for women and men – or the female share in entrepreneurship change if one of the explanatory variables changes with a given amount? And which variables have the largest impact? This should not be investigated by merely comparing the coefficients of the various explanatory variables as the measurement units are different. For instance, some variables are measured in percentages, while others are measured as a score on a Likert scale (see Table 2.3). To make the effects comparable, and to obtain an impression of the extent to which TEA or the female share in TEA can be influenced by a plausible change of an explanatory variable, we computed the ceteris paribus effect of an increase of one standard deviation for each explanatory variable.

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the life satisfaction variable is an average country score (see Table 2.3), i.e., it refers to the *whole* population. So, even if (female) entrepreneurs report to be more satisfied with their life as compared to (female) wage earners, it is unlikely that this has a large impact on the life satisfaction variable as this refers to the *whole* population of a country.

[97] For women this was partly due to multicollinearity (see footnote 30). Also note that the *absolute* effect of life satisfaction is larger for women (see Table 2.5). Hence, given the smaller number of female entrepreneurs the significant effect on the female *share* of entrepreneurs is not surprising.

[98] With respect to multicollinearity we find that, once per capita income squared is removed from the regression, the variance inflation factor (VIF) is sufficiently low for all variables. This was also true for the earlier regressions (see Table 2.5). Again, no variables with an insignificant influence in the regression analysis in Table 2.6 becomes significant after removing per capita income squared, indicating that their insignificance is *not* due to multicollinearity. Only the effect of the informal sector variable becomes somewhat stronger (coefficient 2.2; *t*-value 1.5) which is consistent with the argument that particularly women may be involved in informal entrepreneurial activity.

An exception is made for per capita income. As there is high variation in per capita income between the countries in our data set, ranging from 2,450 US$ for India to 34,870 US$ for the United States, an impulse of one standard deviation (or 8,960 US$, see Table 2.4) can hardly be considered plausible. Results are presented in Table 2.7.

Table 2.7: Effects of one standard deviation change on TEA and female entrepreneurship share

	TEA female (% of female adults)	TEA male (% of male adults)	Female *share* in TEA (% of entrepreneurs)
R&D investments	-0.9	-2.4	-0.9
Per capita income	-1.5	-2.3	-2.2
Unemployment	-0.7	-2.6	2.1
Service sector employment	-0.1	0.2	0.1
Informal sector	0.2	-1.6	1.6
Female labor share	-0.4	-0.8	2.0
Former communist country	-1.1	-2.4	0.3
Importance family	1.0	2.0	-0.2
Maternity leave coverage	-0.1	0.1	-1.1
Life satisfaction	0.8	0.0	4.1

Note: the effects are computed on the basis of the estimation results from Table 2.5 (second and third column) and Table 2.6. For per capita income the combined effect of the linear and the squared term is given for a per capita income change of 2,000 US$.

From Table 2.7 we can read that a ceteris paribus increase of one standard deviation in R&D investments has a negative effect of 0.9 percent point on the female TEA rate and of 2.4 percent point on the male TEA rate. Furthermore the percentage of women in the total stock of entrepreneurs decreases with 0.9 percent point. Likewise a one standard deviation increase of a country's score on life satisfaction has a positive effect of 0.8 percent point on female TEA, while it has no effect on male entrepreneurs. Given the larger number of male entrepreneurs (in the population), this implies a considerable effect on the female share in entrepreneurship. Indeed, from the last column in Table 2.7 we see that the effect is 4.1 percent point[99].

2.4.5 Regression Analysis III: Introducing Gender-Specific Independent Variables in the Analysis

The analyses presented above make use of explanatory variables that are similar for women and men. However, it may be argued that the explanation of female and male entrepreneurial prevalence rates can be improved by using gender-specific independent variables. For instance, when explaining variation in female

[99] Comparing Tables 2.5, 2.6 and 2.7, we see that, by and large, the ordering of variables based on the size of the effects is quite similar to the ordering based on the significance (*t*-values) of the effects. We feel that this increases the credibility of our estimation results.

entrepreneurial activity rates between countries, the *female* unemployment rate is more relevant than the *general* unemployment rate (aggregate of women and men). However, variables that are separately available for women and men among a large array of countries are scarce. Nevertheless, in this section we attempt to explain female and male entrepreneurship rates by way of gender-specific independent variables. Again we present both a correlation analysis and a regression analysis.

Gender-specific data for the 29 countries are available for unemployment, service sector employment, importance of family and life satisfaction. These gender-specific variables will be included in the regression analysis, in addition to the general variables used in previous analyses (see Table 2.3). Female and male unemployment rates for 2001 and data on the employment levels of women and men in the service sector for 2000 are obtained from the ILO LABORSTA database.[100] Female (male) employment in the service sector is scaled on total female (male) employment.[101] Gender-specific data for importance of family and life satisfaction are obtained from the World Values Surveys and European Values Surveys. Gender-specific data for these variables are available for all 29 countries. Average country scores for women and men are used. Measurement and rating categories are in accordance with the general variables used in previous analyses (see Table 2.3).

Table 2.8 presents the correlations among the gender-specific variables, also including total entrepreneurial activity rates of women and men (i.e., TEA female and TEA male). Moreover, the means and standard deviations of the gender-specific variables are presented. From Table 2.8 it can be seen that the only variable related to TEA female and TEA male is the importance of family for men. Importance of family for women is not significantly related to entrepreneurial activity. In Table 2.4 we see that importance of family is correlated with both TEA female (r=-0.40, p<0.05) and TEA male (r=-0.45, p<0.05), (erroneously) suggesting that the relationship is valid for both women and men. Hence, using gender-specific variables is important for adequate interpretation of the relationships.

[100] See: http://laborsta.ilo.org. No gender-specific unemployment data are available for India. Instead, we make use of the general unemployment rate (aggregate of women and men) in India to enable comparisons between the different analyses using either general or gender-specific variables. For the same reason, we use the general service employment rate for South Africa.

[101] Employment refers to people of 15 years and over in most countries, except for Brazil and Argentina (>10 years), and Mexico (>12 years). In some countries employment refers to 15 or 16 years and over (Australia, Belgium, Canada, Chile, Germany, Ireland, Italy, Japan, Korea, Poland, Slovenia, Spain, Switzerland, United Kingdom, United States), while in other countries it refers to certain time or age spans: 15 to 74 years in Finland, Germany, Iceland, Norway; 15 to 72 years in Russia; 15 to 66 years in Denmark; 15 to 64 years in the Netherlands and Sweden. For India employment refers to the public sector and non-agricultural private sector with more than 10 people employed. Service employment is measured including the following economic activity categories: 'wholesale and retail trade', 'hotels and restaurants', 'transport, storage and communications', 'financial intermediation', 'real estate, renting and business activities', 'public administration and defence', 'education', 'health and social work' and 'other community, social and personal service activities'. The gender-specific service employment data refer to 2000. However, data for Brazil and Russia are for 2001 and 1999, respectively, as no data are available for 2000.

The correlation of importance of family for men with both TEA female and TEA male suggests that when men consider family to be more important, this leads to an increase in both female and male entrepreneurial activity rates. There is no such crosswise effect for the importance of family for women. It may be argued that if men regard family as important, they become self-employed (enabling them to work flexible hours and/or from home) and their wives also start working in the business as unpaid family worker. This may not be true for women who become self-employed, i.e., husbands may be more likely to keep their own job instead of contributing or assisting in the spouse's firm, explaining the absence of an effect of importance of family for women on male entrepreneurial activity.

Table 2.8: Pearson correlation between gender-specific variables and TEA (female/male)

	1	2	3	4	5	6	7	8	9	10
1. **female** unemployment rate	1									
2. **male** unemployment rate	0.94**	1								
3. **female** service employment	-0.34	-0.36	1							
4. **male** service employment	0.13	0.18	0.54**	1						
5. importance family for **women**	0.13	0.16	0.22	0.23	1					
6. importance family for **men**	0.18	0.22	-0.06	0.16	-0.86**	1				
7. life satisfaction for **women**	-0.50**	-0.54**	0.69**	0.22	0.20	-0.01	1			
8. life satisfaction for **men**	-0.46*	-0.53**	0.70**	0.20	0.24	0.04	0.98**	1		
9. TEA **female**	0.07	0.13	-0.25	0.06	0.28	0.51**	0.03	0.05	1	
10. TEA **male**	-0.12	-0.05	-0.12	0.04	0.34	0.54**	0.07	0.10	0.92**	1
MEAN	8.23	7.16	76.88	56.30	-1.13	-1.19	7.16	7.15	5.43	10.13
STANDARD DEVIATION	6.29	5.15	8.99	7.12	0.06	0.07	0.83	0.77	3.38	5.43

Note: * Correlation is significant at the 0.05-level (2-tailed); ** Correlation is significant at the 0.01-level (2-tailed).

Results of the regression analyses explaining both TEA female and TEA male, using both general and gender-specific data, are presented in Tables 2.9a and 2.9b. The gender-specific independent variables are presented in bold. For ease of comparison we also present the results from Table 2.5 (including only general explanatory variables) in both tables.

Table 2.9a: Regression analysis explaining TEA female (including female-specific variables)

	TEA female (general variables only, see Table 2.5)		TEA female (including female-specific variables)	
	B-value	*t*-value	*B-value*	*t*-value
Constant	33.24	**3.09**	41.21	**3.97**
R&D investments	-2.42	-1.31	-3.01	-1.81*
Per capita income	-0.80	**-2.51**	-0.96	**-4.10**
Per capita income squared	0.016	**2.18**	0.020	**3.41**
Female unemployment	-0.13	-1.46	-0.15	**-2.20**
Female service sector employment	-0.01	-0.20	-0.12	-1.76*
Informal sector	0.24	0.36	-0.19	-0.31
Female labor share	-0.10	-0.76	-0.03	-0.25
Former communist country	-3.13	-1.90*	-4.71	**-3.02**
Importance family for women	17.04	**2.44**	17.62	**2.85**
Maternity leave coverage	-0.01	-0.23	-0.003	-0.12
Life satisfaction for women	1.01	1.28	1.06	1.65
R-square	0.817		0.859	
N	29		29	

Note: variables for which gender-specific information is used in right part of the table are indicated in bold. Moreover, *t*-values in bold represent a significance level of 0.05 and * represents a significance level of 0.10.

Table 2.9b: Regression analysis explaining TEA male (including male-specific variables)

	TEA male, (general variables only, see Table 2.5)		TEA male including male-specific variables	
	B-value	*t*-value	*B-value*	*t*-value
Constant	81.58	**4.39**	72.06	**3.33**
R&D investments	-6.65	-2.09*	-6.35	-1.91*
Per capita income	-1.21	**-2.22**	-1.20	**-2.44**
Per capita income squared	0.023	1.79*	0.023	1.91*
Male unemployment	-0.44	**-2.88**	-0.43	**-2.22**
Male service sector employment	0.02	0.16	0.05	0.37
Informal sector	-1.55	-1.36	-1.74	-1.47
Female labor share	-0.19	-0.86	-0.18	-0.77
Former communist country	-6.70	**-2.37**	-5.09	-1.54
Importance family for men	35.00	**2.91**	30.98	**2.82**
Maternity leave coverage	0.01	0.19	0.000	0.24
Life satisfaction for men	0.06	0.05	0.43	0.29
R-square	0.788		0.763	
N	29		29	

Note: variables for which gender-specific information is used in right part of the table are indicated in bold. Moreover, *t*-values in bold represent a significance level of 0.05 and * represents a significance level of 0.10.

Comparing the results in Tables 2.9a and 2.9b (including gender-specific explanatory variables) to those in Table 2.5 (including only general explanatory variables) we see that the explanatory value of the model (measured by R^2) increases for TEA female (from 0.817 to 0.859, or an increase of explained variation of 4.2 percent point) while it decreases marginally for TEA male. Hence, it appears that including gender-specific variables is important for understanding female entrepreneurial activity, while it does not create additional insight in the origin of male entrepreneurial activity.

Including gender-specific variables strengthens the effects of various explanatory variables on female entrepreneurial activity (TEA female). In particular, the U-shaped relationship of per capita income with TEA female has become more pronounced and the negative effect of R&D has become stronger. The per capita income effect can be explained by the fact that modern economies (with a higher per capita income) are generally characterized by a higher share of service and (given their higher prevalence in services) by more female entrepreneurs. This is consistent with the steeper upward part of the curve, as expressed by the larger coefficient for squared per capita income in the analysis with gender-specific variables. The larger negative effect of R&D for female entrepreneurs may be related to the lower propensity of women to start innovative firms, as hypothesized in Section 2.3. From Table 2.9a we also see that the

significance of life satisfaction has increased, i.e., when including female-specific variables the positive effect is nearly significant at the 10 percent level. This is consistent with the strong effect of life satisfaction on the female share in entrepreneurship in Table 2.6. Hence, for these variables including gender-specific variables contributes to our understanding of female entrepreneurship. Furthermore, the negative effects of (female) unemployment and the former communist country dummy have become (more) significant (vis-à-vis the analysis including general variables only).

Perhaps the most striking finding is that female service employment has a significant negative effect on female entrepreneurial activity, while service employment in general does not have an effect on TEA female. This counterintuitive finding may be related to the different denominator, i.e., scaling on total female employment instead of on total employment (including men and women). The negative effect suggests that if the share of women working in services (scaled on total female employment) increases, it may well be that this increase largely accrues to wage-employment in services instead of to self-employment, possibly signaling an increase in average firm size in services in modern economies (e.g., with more female personnel in super stores as compared to self-employed women in local grocery shops).

Remarkably, the results for male entrepreneurial activity (TEA male) are influenced less by including gender-specific variables in the model, as the small change in R^2 suggests. Only the effect of the communist country dummy has decreased somewhat.

The analysis presented above clearly illustrates the importance of using gender-specific economic and non-economic variables in empirical (regression) analyses explaining the (differences between) female and male entrepreneurship. Including gender-specific variables does not only alter coefficients of (some of) these gender-specific variables, but also those of several general variables. The influence on the effect of the general variables is due to the interplay between explanatory variables in multiple regression models. Furthermore, from the correlation analysis we have seen that there may also be crosswise effects, i.e., a specific male variable influencing female entrepreneurship, or vice versa. More gender-specific data are required to further explore these crosswise effects. In sum, more systematic collection of gender-specific data may have an important contribution to our understanding of the (differences between) determinants of male and female entrepreneurship.

2.5 Discussion and Conclusion

The aim of the present chapter is to investigate the factors influencing female and male entrepreneurship at the country-level. The variation in female and male entrepreneurial activity rates has given rise to the question what their determinants are. Using Global Entrepreneurship Monitor data for 29 countries we test hypotheses concerning the impact of several determinants on female and male entrepreneurship. We derive these

determinants from three streams of literature, including that on entrepreneurship in general, on female labor force participation and on female entrepreneurship. We use two measures of female entrepreneurship: the *number* of female entrepreneurs in the female population and the *share* of women in the total number of entrepreneurs. The first measure is used to investigate whether variables have an impact on entrepreneurship in general (influencing both female and male entrepreneurship). The second measure is used to investigate whether factors have a differential relative impact on female and male entrepreneurship, i.e., whether they influence the diversity or gender composition of entrepreneurship. Factors that contribute to a higher number of female entrepreneurs (in the population) may be different from those contributing to a higher diversity of entrepreneurship in a country.

We find that – by and large – female and male entrepreneurial activity rates are influenced by the same factors in the same direction. Hence, conditions for female entrepreneurship in a country tend to be similar to those for entrepreneurship in general (Delmar, 2003, p. 6). However, for some factors we find a significant differential impact on female and male entrepreneurship.

Regarding the determinants of entrepreneurship in general, we find negative effects of investments in R&D, the unemployment level and economic transition, and a positive effect of the importance of family. Moreover, we find evidence for a U-shaped relationship between entrepreneurial activity and per capita income. With respect to the differential impact of factors on female and male entrepreneurial activity, we find significant positive impacts of unemployment and life satisfaction on the share of women in the total number of entrepreneurs. More specifically, the negative effect of unemployment is smaller for women and the effect of life satisfaction on entrepreneurial activity is positive for women and non-existent for men.

The present study has an important conceptual and empirical contribution, in particular since there have been relatively few studies focusing upon the determinants of female and male entrepreneurial activity at the country level. From a conceptual perspective the present study brings together several streams of literature, discussing the (possible) influence on (female) entrepreneurship of a large range of factors, classified into five focal areas (i.e., technological, economic, demographic, institutional and cultural factors). From an empirical standpoint this study shows the methodological implications of studying the determinants of female and male entrepreneurial activity. When studying female entrepreneurship from a macro perspective, there are different ways to measure female entrepreneurship (i.e., in absolute or relative terms) and a distinction can be made between including general or gender-specific explanatory variables in the analysis. Moreover, developing a full regression model where the interplay of variables is accounted for may be more suitable for understanding the

origin of female and male entrepreneurship than merely investigating direct correlations.[102]

Future research should focus on including more countries in the analysis and investigating more explanatory factors. Cultural and also political factors should be included to rule out country differences in these areas. Moreover, future research should include institutional factors, such as support for entrepreneurship, availability of capital and regulatory or institutional factors (e.g., taxation, social security).

Findings in the present study also indicate that there may be a considerable share of (particularly female) entrepreneurs active in the informal sector, especially in poorer countries. To be able to provide full understanding of the reasons why women become self-employed, future research exploring female entrepreneurial motivation should take into account both formal and informal economic sectors. Moreover, in this study we find that unemployment has a different effect on female than on male entrepreneurship. Hence, it may be interesting for future research to study the mechanisms of the career choice of unemployed people. For instance, the effect of unemployment on the self-employment decision is likely to be dependent upon the reasons for unemployment, where a distinction can be made between voluntary unemployment (e.g., because of maternity leave, child and elderly care) or involuntary unemployment (e.g., because of company downsizing).

One of the most consistent influences on both female and male entrepreneurship throughout this study is the importance of family. For both women and men the importance of family (i.e., family values) has a positive impact on self-employment. Two factors probably play a role here. First, family can be supportive of the firm giving the entrepreneur a helping hand. Second, self-employment enables flexible working hours and working from home. Accordingly, self-employment can be geared to family needs. It is interesting to see that importance of family for men, in addition to entrepreneurial activity of men, also influences the entrepreneurial activity of women. Hence, if men become entrepreneurs their wives probably also contribute as unpaid family workers. Our correlation analysis suggests that this does not work the other way around, i.e., if women become self-employed their husbands are not more likely to become involved in their firms. This gives rise to question how far the (global) gender mainstreaming process has advanced, i.e., to what extent do women and men throughout the world have equal access to economic opportunities and are intra-household relations emancipatory?

Another striking result of this study is the positive effect of life satisfaction on the number of female entrepreneurs (in the population), which is contrary to what is argued in the 'social legitimation' perspective. Hence, life satisfaction may be an important policy issue for governments aiming to stimulate female entrepreneurship.

[102] For instance, we find that the direct correlation between female share in the labor force share and the female share in entrepreneurship is not significant, whereas there appears to be an effect of female labor share on female entrepreneurship share in the regression analyses.

Although life satisfaction is largely dependent upon factors that are difficult to influence, such as personal happiness and the economic climate, governments may be able to create higher levels of satisfaction among its female population by targeting problem areas and important issues for women, such as child care issues and gender mainstreaming. These are issues that may impact female entrepreneurship directly, but also indirectly – through satisfaction. Though it may be a long shot for governments to influence female entrepreneurship through satisfaction, awareness of this relationship is important.

Also, a promising line of research is the investigation of crosswise effects, i.e., the extent to which certain male-specific developments also impact female entrepreneurship and vice versa. In the present study we merely investigated this issue using correlation analysis. Follow-up research should also test for the existence of crosswise effects in regression analyses.

From a policy perspective it may be argued that before selecting and activating policy instruments, governments should have a clear idea what they want to accomplish: do they want to stimulate the number of female entrepreneurs (in the population) or the female share in entrepreneurship (i.e., the diversity of entrepreneurship)? The analyses in this study point out that there may be different factors involved. Considering that diversity of entrepreneurship is important from an economic perspective – in view of the extended and more diverse supply of goods and services consumers can choose from – it may be important for governments to focus upon stimulating the share of women in entrepreneurship. To this end, government policy should aim at influencing those factors that have a relatively stronger impact on female entrepreneurship than on male entrepreneurship. Moreover, for governments to have a clear understanding of the role of female entrepreneurship in the economic process and the relationships between entrepreneurship and other factors (whether economic, technological, demographic, institutional or cultural) more systematic data collection is of vital importance. Knowledge of the number and share of female entrepreneurs in different countries fosters large-scale research in the area of female entrepreneurship both within countries and across countries. Past and contemporary research on female entrepreneurship has mainly focused upon small groups of female entrepreneurs (in qualitative research) within countries and there are few large-scale studies investigating female entrepreneurship across countries.

Chapter 3: Business Accomplishments, Gender and Entrepreneurial Self-Image

3.1 Introduction

The present chapter 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 chapter 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, policy makers 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 in order to gain knowledge about this phenomenon (see Davidsson, 2003). However, our results may help to 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[103].

To further our understanding of the popular view of the concept of "entrepreneur", the primary research question of this chapter 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). Though 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 chapter is on the influence of behavior on entrepreneurial self-image. From a theoretical perspective, our study is a

[103] Some researchers may wish to further consider these multiple perspectives in light of the scientific paradigm of *realism*; i.e. the view that even though 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).

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, 1998b; 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.

The chapter 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 entrepreneurial typology (Vesper, 1999). 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 non-random 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.

3.2 Business Behaviors and Entrepreneurial Self-Perception

This chapter draws upon the world of self-concept. According to William James (1890, 1950), the 'empirical self'', consisting of a material, social and spiritual

component, is the key to understanding the experience of individuals[104]. In the present chapter 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[105]. 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 and 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). Though Bem's self-perception theory has been used extensively in other types of research applications[106] within the field of entrepreneurship relatively few empirical studies have focused upon explaining entrepreneurial self-perception from behavior.

[104] See Smith (1992) for a detailed discussion of William James's theory of self.

[105] "*This reciprocality does not mean that the different influences are of equal strength*" (Wood and Bandura, 1989, p. 362).

[106] Self-perception theory has been applied extensively to social scientific research since the mid 1970's, but primarily to empirical research in applied social psychology (Dolinski, 2000; Uranowitz, 1975; Weiner, 1974) and clinical psychology (Robak, 2001; Schnall, Abrahamson and Laird, 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).

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.

3.3 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 study we take a behavioral approach to studying entrepreneurship, consistent with the mainstream scholarly perspective (Gartner, 1990).

3.3.1 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. 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; and 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.

3.3.2 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 3.1). 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 3.1: 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-sized 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 established firm
Industry Captain	Runs a big business

3.3.3 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, 1967), innovation (Schumpeter, 1934), risk-taking (Knight, 1921;

Cantillon, 1931; Hull et al., 1980; Sexton and Bowman, 1985, 1986; Stewart et al., 1999; Begley, 1995; Stewart and Roth, 2001)[107], 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 this 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 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)[108]. More specifically, although Gartner (1990) labels the first factor, "Entrepreneur", six of the twelve 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 3.2).

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[109]. 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 non-founders (Begley, 1995; Begley and Boyd, 1987 and Hull et al., 1980).

[107] 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 by Brockhaus (Brockhaus and Nord, 1979; Brockhaus, 1980; Brockhaus and Horwitz, 1986).

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

[109] 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.

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 since 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.

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 for innovation is limited since maintenance of the franchisor's concept is important (Kaufman 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.

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[110]. 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 since 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 since 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

[110] Per Davidsson, personal communication, 2003.

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.

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 born 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 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 non-champions 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[111].

[111] 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.

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 they have 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[112]. Hence, ownership is seen as more entrepreneurial than management, irrespective of firm size or characteristics.

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.

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 '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, even though 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 non-family firm.

The results of the ranking are presented in Table 3.2. The ranking is done as follows. For three characteristics (opportunity perception, risk-taking and innovation) we discriminate between four levels (low, medium, medium-high, 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 3.2. 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 3.2 it can be argued that founding a firm from scratch involves the highest degree of

[112] These conclusions are based on a study of IMAS (Institut für Markt und Socialanalyzen) 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).

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).

Table 3.2: Ranking business accomplishments according to degree of entrepreneurship[a]

Business Accomplishment	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.

Since 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 Table 3.2, its ranking on the basis of innovation and opportunity perception 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.

3.4 Gender and Entrepreneurship

In addition to business accomplishments, this chapter 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.

3.4.1 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 in some countries[113]. However, some of this increase is due to an overall increase of women in the labor 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 to 35 percent of total business ownership in many Western countries (Carter, 2000)[114]. Reynolds et al. (2002) report that throughout the 37 countries participating in the Global Entrepreneurship Monitor, men are 50 percent more likely to be involved in entrepreneurial activity than women[115]. 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 percent of the working male population is self-employed, compared with only about 9 percent 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, 1998b; 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

[113] See Center for Women's Business Research (www.womensbusinessresearch.org) and Carter (2000).
[114] For the United States, see US Small Business Administration (1995) and NFWBO (1996).
[115] In the Global Entrepreneurship Monitor entrepreneurial activity includes nascent entrepreneurs (starting or operating a business no older than three months) and new businesses (in existence for less than 3.5 years). See Reynolds et al., 2002, p. 38.

total workweek committed to the business (Brush, 1992; Goffee and Scase, 1985; and 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 sum, 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.

3.4.2 Gender and Self-Perceptions in Business and Entrepreneurship

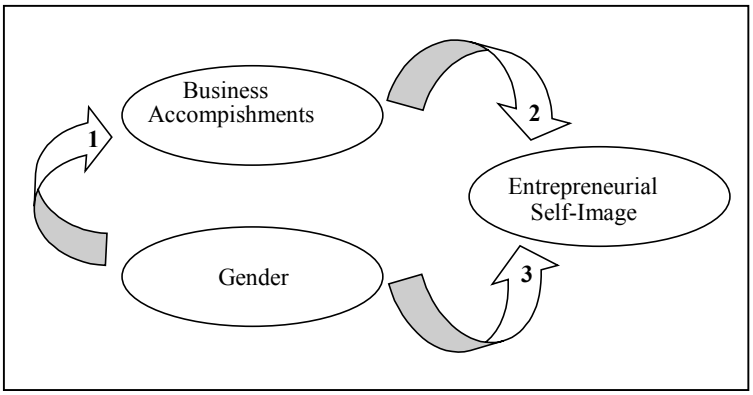
Past research on gender differences in self-perception has mainly focused on managerial self-perception. In general, these studies indicate that women tend to underrate their skills or performance as compared to men (Wohlers and London, 1989; Lindeman et al., 1995). This underrating has been attributed 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 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 and 1975; Powell and Butterfield, 1979 and 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.

3.5 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 Figure 3.1.

Figure 3.1: Influences on entrepreneurial self-image



Based on this model we test the following hypotheses. Hypothesis 1 (H1) represents the impact of certain business accomplishments on entrepreneurial self-image (arrow 2 in Figure 3.1). H1 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 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 3.2 and 3.3).

H1: People with certain business accomplishments (e.g., the entrepreneurial activities as proposed by Vesper)[116] 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 (arrow 1 and 2 combined in Figure 3.1), whereas the direct effect refers to gender differences in self-image that cannot be attributed to differences in business accomplishments (arrow 3 in Figure 3.1). 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

[116] In addition to the entrepreneurial activities of Vesper's typology in Table 3.1, 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 3.1).

distinguishing between direct and indirect gender effects in other areas of entrepreneurial behavior, such as financing (Verheul and Thurik, 2001).

As discussed earlier in this chapter, 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 (H2a), representing the direct effect of gender on entrepreneurial self-perception (arrow 3 in Figure 3.1) and Hypothesis 2b (H2b), predicting an indirect effect of gender on entrepreneurial self-image (arrow 1 and 2 combined in Figure 3.1), with business accomplishments posited as (partially) mediating that effect. To summarize, we formulate Hypotheses 2a and 2b as follows:

H2a: Women have a lower entrepreneurial self-image than men, controlling for their particular business accomplishments (the direct effect).

H2b: Women have a lower entrepreneurial self-image than men due to differences in particular business accomplishments (the indirect effect). That is, business accomplishments partially mediate the relationship between gender and entrepreneurial self-image.

3.6 Ranking Business Accomplishments as Entrepreneurial Behaviors According to an Expert Panel

3.6.1 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 3.3)[117]. The classification of business accomplishments is based

[117] 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 Autonoma de Barcelona), Barcelona, 21-22 November 2002 (*64*

on the entrepreneurial typology as proposed by Vesper (1999) as presented in Table 3.1. 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 3.3 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[118]. 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[119]. Of the 216 respondents, 162 were included as experts in the study[120].

respondents) and (6) the UKBI 4th National Incubation Conference, Edinburgh, 25-26 November 2002 (*22 respondents*).

[118] The answer: (6) "don't know" was coded missing.

[119] Practitioners include the following: government officials or policy makers, 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 sub-samples but the rank orderings remained essentially the same. Hence, the combined means are reported here.

[120] 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).

Table 3.3: Description of variables

Name of variable	Description of variable
Entrepreneurial Self-Image [a]	The answer to the question: *would you call yourself an entrepreneur?* (1 = 'no', 2 = 'don't think so', 3 = 'maybe', 4 = 'possibly', 5 = 'definitely')
Gender	Whether an individual is male of female. (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". (no=0; yes=1)
Founder [c]	Created a new business from scratch?
Franchisee	Started a franchise business?
Acquirer [c]	Acquired an on-going concern?
Runner [c]	Managed a small to mid-sized business beyond start-up?
Take-Off Artist [c]	Steered a company into a high growth trajectory?
Turnaround Artist [c]	Saved a failing company?
Intrapreneur [c]	Led an effort to create business unit in established firm?
Innovator [c]	Made something new happen (e.g. new product, program) other than a new business unit or new company?
Industry Captain [c]	Ran a large company?
Champion [c]	Supported subordinate innovator(s) or intrapreneur(s)?
Owner	Owned a major part of a business?
Service Provider	Assisted entrepreneurs as a service provider?
Family Business	Worked as member of family business (2 or more family members, including yourself, active in the business)?
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? (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 these questions 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).

3.6.2 Results of the Expert Panel Study

Expert panel scores for each of the business accomplishments are displayed in Table 3.4. The ranking of the accomplishments according to the experts appears fairly similar to the rankings derived from a review of the literature (see Table 3.4, last column). Starting a (non-franchise) 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 percent 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 percent 'probably' or 'definitely' considering it an example of entrepreneurial behavior. Since all thirteen business accomplishment items are viewed as either 'probably' or 'definitely' an example of entrepreneurial behavior by almost 20 percent of the respondents in the expert panel, we decided to include all business accomplishments in further exploratory analyses based on the alumni panel dataset.

Table 3.4: Ranking business accomplishments as "Entrepreneurial Behaviors" according to an expert panel (*N*=162)

Business Accomplishment	Mean	Std. deviation	% rated 1, 2 by experts[a]	% rated 1 by experts[a]	Literature ranking (Table 3.2)
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.

3.7 Testing the Proposed Model and Hypotheses

3.7.1 Method

Data source and sample characteristics

To test the relationships between gender, business accomplishments and entrepreneurial self-perception, about 2000 questionnaires were sent to various sub-samples of alumni at a large Midwestern public university in the United States: 512 to MBA graduates (72 or 14 percent of which responded); 1200 to alumni identified as either a president or CEO in the Dun and Bradstreet database (118 or 10 percent of which responded); and 283 to recent graduates who had enrolled in an entrepreneurship course while at college (17 or 9 percent of which responded). Of these questionnaires 331 were returned to sender, and 212 responded, of which five 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 sub-samples 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 since 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[121]. In hindsight, the content of the cover letter – which was constructed not only for research but also non-research 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

[121] This is supported by the fact that about 60 percent 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 US sample from Reynolds (1997b), indicate that 37.5 percent 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.

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 3.5 for report of means and standard deviations.

The low response rate may be further explained by the fact that letters were sent out to company addresses instead of to individuals. Also, 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 sub-sample 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 percent) 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 even though they never graduated[122]. Of the people with a university degree (either Bachelor's or Master's) approximately 60 percent 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 40 years of an entrepreneur. 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[123]. However, in our study most of the respondents (approximately 50 percent) fall in the age category of 46 to 55 years old (see Table 3.5). 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 3.3), this may have influenced the age distribution in the sample since 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 non-randomness of the sample, and the response bias regarding age, education and location, conclusions drawn from this study should be viewed as exploratory in nature.

[122] For the remainder of the respondents (i.e., nine respondents) data on education level are missing.
[123] It should be born in mind that Storey (1994) and Reynolds et al. (1999) make use of start-up samples, where individuals are likely to be younger.

Table 3.5: Pearson correlation between all variables for the total sample

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Entrepr. Self-Image	1																				
2. Gender	-0.23**	1																			
3. Founder	0.59**	-0.13	1																		
4. Runner	0.40**	-0.21**	0.30**	1																	
5. Owner	0.29**	-0.08	0.35**	0.47**	1																
6. Small Business Person [a]	0.56*	-0.18**	0.73**	0.78**	0.78**	1															
7. Intrapreneur	0.17*	-0.12	0.05	0.21**	0.14*	0.18*	1														
8. Innovator	-0.05	-0.004	-0.12	0.05	0.15*	0.04	0.28**	1													
9. Champion	0.07	0.06	-0.06	0.06	0.02	0.007	0.28**	0.28**	1												
10. Corporate Entrepreneur [a]	0.08	-0.04	-0.06	0.16*	0.16*	0.11	0.76**	0.76**	0.62**	1											
11. Acquirer	0.16*	-0.19**	0.05	0.27**	0.23**	0.24**	0.26**	0.13	-0.07	0.18*	1										
12. Turnaround Artist	-0.02	-0.18*	0.03	0.19**	0.11	0.14*	0.15*	0.18*	0.03	0.18*	0.36**	1									
13. Franchisee	0.08	-0.06	-0.13	0.08	0.06	-0.001	0.000	-0.002	0.13	0.04	-0.05	0.17*	1								
14. Take-Off Artist	0.13	-0.11	0.13	0.41**	0.20**	0.33**	0.33**	0.32**	0.13	0.38**	0.32**	0.23**	-0.08	1							
15. Industry Captain	0.16*	-0.15*	0.19	0.22**	0.23**	0.28**	0.28**	0.18**	0.07	0.26**	0.16*	0.24**	-0.05	0.36**	1						
16. Service Provider	0.09	-0.02	0.04	0.11	0.04	0.08	0.10	0.04	0.17*	0.13	0.11	0.07	-0.07	0.14*	0.16*	1					
17. Family Business	0.12	0.06	0.15*	0.16*	0.25**	0.24**	0.06	-0.08	0.02	-0.002	0.03	0.03	-0.04	-0.06	-0.03	0.09	1				
18. Age	0.20**	-0.22**	0.22**	0.22**	0.18**	0.27**	0.05	-0.001	-0.03	0.02	0.19**	0.12	0.19**	-0.004	0.02	-0.01	-0.07	1			
19. Education level	-0.31**	-0.03	-0.25**	-0.25**	-0.26**	-0.30**	0.05	0.06	0.02	0.06	-0.14*	-0.09	0.07	-0.13	-0.10	0.04	-0.16*	-0.05	1		
20. Business degree	-0.34**	-0.12	-0.31**	-0.31**	-0.25**	-0.29**	0.01	0.09	0.03	0.07	-0.04	0.01	-0.07	0.02	0.06	0.02	-0.11	-0.25**	0.33**	1	
21. Intro course	-0.16*	0.20**	-0.20**	-0.20**	-0.12	-0.21**	-0.07	-0.12	-0.04	-0.11	-0.13	-0.01	-0.06	-0.09	-0.07	-0.06	0.13	-0.45**	-0.16*	0.05	1
MEAN	3.76	0.29	0.62	0.38	0.29	0.43	0.29	0.29	0.09	0.22	0.25	0.13	0.03	0.17	0.05	0.13	0.23	4.57	1.50	0.61	0.08
STD. DEVIATION	1.57	0.45	0.49	0.49	0.46	0.36	0.45	0.46	0.29	0.29	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	206	206	206	206	206	206	207	198	201	207

* Correlation is significant at the 0.05-level (2-tailed); ** Correlation is significant at the 0.01-level (2-tailed). [a] Small Business Person combines Founder, Runner and Owner activity; Corporate Entrepreneur combines Intrapreneur, Innovator and Champion activity (see Factor Analysis, Table 3.6).

3.7.2 Description of Variables

This section describes the variables used to test the model and hypotheses (see Table 3.3).

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).

Gender

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

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 non-formal 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. Since experience tends to increase with age, we want to separate these two effects.

3.7.3 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 Figure 3.1), is tested with Pearson 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, McGrath and MacMillan (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[124].

Throughout this study we use both one- and two-tailed hypotheses. As critical values of the one-tailed test procedures are always lower than 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.

[124] To test for direct and indirect effects the studies in the present thesis assume a fully recursive model where disturbances in the system of regression equations are not related. Accordingly, the effects on the dependent variable (in this case entrepreneurial self-image) can be consistently estimated using equation-by-equation Ordinary Least Squares regressions. For a detailed description, see Greene (2000, p. 679).

3.8 Results

3.8.1 Factor Analysis and Scale Formation for Business Accomplishments

Table 3.6 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 (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 (> 0.60) for each factor are combined into scales, the resulting Cronbach Alpha reliability coefficients are 0.64, 0.52 and 0.51 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'. Also, someone saving a failing business is not necessarily a business owner, but can be a manager. The business accomplishment *Take-Off Artist* is omitted 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 Alpha 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.

Table 3.6: Factor analysis matrix of business accomplishments[a]

Business Accomplishment	Factors 1 Small Business Person	2 Corporate Entrepreneur	3 Acquirer/ Turnaround Artist	4 Franchisee	5 Industry Captain	6 Service Provider	7 Family Business
Founder	**0.62**	-0.21	-0.18	-0.19	0.40	-0.09	0.12
Intrapreneur	0.15	**0.65**	0.17	-0.07	0.12	0.10	0.05
Innovator	-0.05	**0.78**	0.12	-0.02	0.09	-0.18	-0.05
Take-Off Artist	0.42	0.43	0.33	-0.16	0.15	0.13	-0.36
Franchisee	0.06	-0.01	0.004	**0.93**	-0.05	-0.05	-0.05
Runner	**0.81**	0.10	0.22	0.12	-0.04	0.15	-0.05
Turnaround Artist	-0.06	0.08	**0.67**	0.35	0.42	0.02	0.12
Acquirer	0.22	0.12	**0.82**	-0.12	0.12	0.08	-0.02
Family Business	0.18	0.02	0.04	-0.06	-0.05	0.08	**0.91**
Champion	0.001	**0.66**	-0.31	0.28	-0.05	0.34	0.06
Owner	**0.72**	0.14	0.09	0.07	0.12	-0.14	0.28
Industry Captain	0.17	0.22	0.09	-0.05	**0.83**	0.11	-0.10
Service Provider	0.01	0.03	0.08	-0.06	0.10	**0.92**	0.06
Eigenvalues	2.87	1.62	1.21	1.19	1.02	0.92	0.79
Cronbach Alpha	0.64	0.52	0.51				
$N = 207$							

Note: only factor loadings $\geq$ 0.1 are presented. Factor loadings $\geq$ 0.6 are highlighted in bold. [a] Principal Component Analysis, Varimax Rotated. [b] Cronbach Alpha is computed including the highlighted activities.

3.8.2 Descriptive and Bivariate Statistics

In addition to the standard deviations mentioned earlier, Table 3.5 also reports the means, and correlation coefficients between the major variables in this study.

3.8.3 Test for H1: 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 3.5 provides support for the relationship between Entrepreneurial Self-Image and three of the business accomplishment variables, including *Acquirer* (r=0.16, p<0.05), and *Industry Captain* (r=0.16, p<0.05) and *Small Business Person* (r=0.56, p<0.01)[125].

Table 3.7 presents the results of Ordinary Least Squares (OLS) linear regression analyses 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 3.7 presents the change in R^2 for each block when entered first or last. Although Business Accomplishments as a block explains 32 percent of the total variance (when entered first) and 16 percent (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=-0.94; p<0.01). 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.

Because Small Business Person activity consists of three separate business accomplishments: Founder, Runner and Owner activity, the question remains which of these activities is most important in determining an individual's self-perception as an entrepreneur. In an additional analysis, including the separate business accomplishments (instead of the scales derived from the factor analysis) it is found that the effect of Small Business Person (as presented in Table 3.7) is largely driven by Founder and Runner activity, whereas Owner activity has no significant influence.

[125] Small Business Person is made up of Founder, Runner and Owner activity. Of these separate activities, Founder shows the highest correlation with Entrepreneurial Self-Image (r=0.59, p<0.01), followed by Runner (r=0.40, p<0.01) and Owner(r=0.29, p<0.01), respectively.

Entrepreneurial Self-Image is first determined by Founder activity (with a *t*-value of 7.00) and subsequently by Runner activity (with a *t*-value of 2.83)[126].

3.8.4 Test for H2: Gender effects on Entrepreneurial Self-Image controlled for Business Accomplishments

As shown in Table 3.5, the bivariate relationship between Gender and Entrepreneurial Self-Image is significant and negative (r=-0.23; p<0.01), suggesting a significant total gender effect. As shown in Table 3.7, the unstandardized coefficient for Gender is significant (B=-0.67, p<0.01), 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)[127].

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 at two percentage points from 0.05 to 0.03. This effect appears largely due to Small Business Person activity, which is positively correlated with Entrepreneurial Self-Image and negatively correlated with Gender (see Table 3.5). More specifically, it is Runner activity within the Small Business Person scale that seems to cause this mediating effect[128]. In sum, 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 variable[129].

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 percent) 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.

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[126] Moreover, in this analysis including the separate business accomplishments also starting a franchise business (i.e., Franchisee) has a positive impact on Entrepreneurial Self-Image.

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

[128] Runner activity is the only business accomplishment out of the three that make up the Small Business Person scale that is correlated with gender (see Table 3.5).

[129] 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.

Table 3.7: Results of regression analyses explaining entrepreneurial self-image

Explanatory Variables	*B*-value	*t*-value	ΔR^2 [a]
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	
Intro 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-square	0.413		
Adjusted *R*-square	0.369		
F-statistic	9.36**		

** Significant at the 0.01-level; * Significant at the 0.05-level; [a] Change in R^2 when adding this variable first / last to the model (including all variables, i.e., business accomplishments, controls and gender). *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 - 0.78** ($p<0.01$). Adding the business accomplishment Take-Off Artist in the analysis does not change the results.

3.9 Discussion

3.9.1 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)[130]. 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 founders and small to mid-sized business managers (combined into the Small Business Person scale together with business ownership) are most likely to describe themselves as entrepreneurs. On the other hand, those reporting business accomplishments as *Corporate Entrepreneurs* (including intrapreneurs, innovators, and champions) are less likely to call themselves entrepreneurs. This is in contrast 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 should be interpreted carefully. *Turnaround Artist* activity is included in the analysis even though it is fairly strongly correlated with the *Acquirer* variable (r=0.36, p<0.01) and both load on the same factor in the seven-factor solution derived from the factor analysis[131]. One explanation for this negative effect of Turnaround Artist activity on Entrepreneurial Self-Image 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 (non-owner)/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

[130] However, there may be an underlying factor, such as capability, exerting a positive influence on both business accomplishments and entrepreneurial self-image. Further research should rule out this possibility by including these factors in the analysis.

[131] Furthermore, although the t-value for *Turnaround Artist* is statistically significant in the regression analyses, note that the zero-order correlation coefficient is practically zero.

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.

3.9.2 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 approximately 46 years old), more highly educated (with almost 95 percent 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, even though in our study older respondents, respondents with a Bachelor's degree (rather than Master's degree) and respondents with a non-business 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. Also, 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 3.3). 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[132]. 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[133]. 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

[132] 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).

[133] 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).

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 entrepreneurial self-perception.

3.9.3 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 of 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.

An alternative interpretation of the results is that the term, "entrepreneur" may have a male connotation for some women. Hence, even though 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 entrepreneurs 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 nonprofit 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.

3.10 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. These relationships are investigated using an exploratory study based on a non-random 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, Franchisee, Service Provider and Family Business). For further analysis the number of business accomplishments

Regression analysis is used to identify those business accomplishments that university alumni associate with self-perceptions of entrepreneurship. The findings, taken together, appear to 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*) and managing a small to medium sized business beyond start-up (*Runner*). On the other hand, Corporate Entrepreneurs (including *Intrapreneur*, *Innovator*, and *Champion* activity) are not likely to perceive of themselves as 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, 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 also through a likely indirect effect (through Business Accomplishments). 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 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. 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 sum, 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.

Chapter 4: Allocation and Productivity of Time in New Ventures of Female and Male Entrepreneurs

4.1 Introduction

The availability of human time can be regarded as a fundamental and scarce resource in the economy (Juster and Stafford, 1991). According to Becker (1965) households or individuals can allocate their time to different activities, distinguishing between production or work-oriented activities and consumption-oriented activities. Assuming that work-oriented activities yield financial returns, consumption-oriented activities are characterized by foregone earnings (i.e., opportunity costs). Homework may be considered as a separate activity, as it does not (directly) yield revenues, nor can it be considered leisure time (Reid, 1934; Mincer, 1962; Gronau, 1977).

Since Gary Becker's (1965) "*A Theory of the Allocation of Time*" a substantial amount of research has been done in this area, both by economists and researchers from other disciplines[134]. Within (labor) economics and occupational choice theory time allocation has been mainly studied within the context of wage or contract labor. Time allocation research has not paid much attention to the distinction between wage-employment and self-employment, even though self-employment is different from wage-employment regarding time use in at least two respects. First, self-employed individuals tend to spend more time in the market than wage-employed individuals (Carrington et al., 1996; Ajayi-Obe and Parker, 2004). Time is one of the main inputs into self-employment and this is the case in particular for new ventures (Lévesque and Schade, 2004; Lévesque and MacCrimmon, 1997; Cooper et al., 1997). The longer working hours among the self-employed may be explained by greater job satisfaction and work demands (Ajayi-Obe and Parker, 2004). Second, self-employed individuals tend to have greater flexibility of working hours than wage-employed individuals.

In the field of entrepreneurship few studies have investigated time allocation decisions. The research that has been done in this area focuses upon time allocation decisions within the firm rather than within and outside the firm (McCarthy et al., 1990; Cooper et al., 1997). However, studies by Lévesque and MacCrimmon (1997) and Lévesque and Schade (2004) have dealt with the question how individuals divide their time between leisure and work time, where work time is divided between time spend in the new venture and time spend on a wage job. The present chapter may be

[134] Juster and Stafford (1991, p.471/2) argue that in the United States economists are the main contributors, whereas in Europe most of the research on time allocation is done by sociologists, planners and statisticians with an interest in national income accounts.

seen as extending these studies. Where Lévesque and MacCrimmon (1997) is an analytical paper and Lévesque and Schade (2004) deals with time allocation decisions of business and economics students within an experimental setting, the present study focuses on time allocation decisions of entrepreneurs of new business ventures.

For an entrepreneur the choice between work and leisure time will be dependent upon both preferences and productivity of work time. The present study investigates the allocation and productivity of work time in new ventures. For these ventures in particular time investment is an important issue, as a series of (usually) new and non-recurrent activities is undertaken, laying the foundation of the firm and securing its viability. Explanatory factors of the preference for work time and the productivity of work time are derived from the literature on time allocation and entrepreneurship. Special focus will be on gender differences. Hypotheses are tested by way of both linear and nonlinear regression analyses.

The structure of the present study is as follows. The next section deals with the factors influencing the preference of work time versus other time uses, and the factors influencing the efficiency of time use (i.e., the productivity of work time). Hypotheses will be formulated for these influences. Subsequently, we provide information on the data source, introduce our model and present and discuss the results of the empirical study.

4.2 Determinants of Time Use / Allocation

Time allocation theory makes a distinction between different activities an individual can allocate his or her scarce time to. For the purposes of this study we argue that, in addition to investing time in the business, an entrepreneur can spend time outside the business on other work activities (running a second firm, wage-employment, work-related education), schooling, homework (household and family responsibilities), personal needs and leisure activities. Time spent on these activities limits the time available for running the business. This study does not deal with time allocation between "outside-the-firm" activities, but focuses on explaining the number of hours invested in the business versus that invested in other activities. For ease of presentation in this study we use the term *work* time for time spend in the business and *leisure* time for time spent outside the firm.

The number of hours invested in the business will be dependent upon the preference for work time versus leisure time and the productivity of work time. Becker (1993) makes a distinction between general human capital, applying to all types of economic activity, and specific human capital, referring to a specific type of activity. We argue that the preference for work time will be influenced mainly by *general* human capital (e.g., gender, age and family situation), and the productivity of work time by *specific* human capital (e.g., education, firm or industry-specific knowledge), as well as social

and financial capital. In subsequent paragraphs the determinants of both the preference for work time and the productivity of work time are discussed and hypotheses are formulated.

4.2.1 Preference for Work Time

In the present section the influence on the preference for work time versus other time uses is discussed, distinguishing between effects of other sources of income, side-activities, gender and age of the entrepreneur, and having a partner.

Revenues and other sources of income

An increase in wage (in case of wage-employment) or revenues per hour (in case of self-employment) may lead to an increase or decrease of working hours, depending upon whether the 'substitution effect' (i.e., individuals substitute work for leisure hours when returns to work increase) or the 'income effect' (i.e., individuals respond to their higher earnings by consuming more leisure at the expense of working hours) dominates (Blundell and MaCurdy, 1999). In the empirical literature findings are indeterminate. Ajayi-Obe and Parker (2004) show that in response to higher wages both wage-employed and self-employed individuals work fewer hours. However, Biddle and Hamermesh (1990) find that higher wages lead to more market work.

Whereas the substitution effect refers to the productivity of work time, the income effect refers to the preference for work time versus leisure time. To investigate income effects, we do not focus upon revenues from the firm, but upon other income, earned independently of the number of hours invested in the firm (possibly by the spouse). The availability of other income is likely to reduce the preference for working hours (Ajayi-Obe and Parker, 2004). The following hypothesis is formulated:

H1: The availability of other income (than that extracted from the business) negatively influences the preference for work time.

Gender, family responsibilities and part-time work

The number of hours worked per person has decreased considerably in the last hundred years (Maddison, 1982; 1987). However, there is a divergence in the development of working hours of men and women. For men working hours have declined, whereas for women they have increased substantially (Killingsworth and Heckman, 1986). Contemporary time allocation decisions also show gender differences. Employment rates (whether measured in terms of number of jobs or hours worked) are still lower for women than for men in most OECD countries (OECD, 2002). Moreover, within any occupation men tend to work longer hours than women (Ajayi-Obe and Parker, 2004).

Within self-employment men are more likely to work on a fulltime basis than women (OECD, 1998b). The combination of work and family responsibilities tends to be an important motivation for women to engage in self-employment, enabling them to have more flexibility in their use of time (Longstreth et al., 1987). However, the "double assignments" of female entrepreneurs also tends to limit the time they can spend in the business.

Generally, the participation in other activities besides running the firm, such as wage-employment, running a second firm or household activities comes at the expense of the number of hours an entrepreneur invests in his or her business. The following hypothesis is formulated:

H2: Participation in side-activities (next to running a firm) reduces the preference for work time.

It may be argued that gender differences with respect to time investments in the business are largely due to household and childcare activities, preventing women to work fulltime or as many hours as men do. Accordingly, we hypothesize that, when controlled for side-activities, there is no gender difference in invested hours in the business:

H3: Gender of the entrepreneur does not influence the preference for work time (*when controlled for side-activities*).

Because marriage and the presence of children (i.e., childcare and household activities) tend to go hand-in-hand it is important to untangle these effects on time allocation preferences. Having a partner (whether or not you are married) may be expected to have negative influence on the number of working hours of both men and women as partners want to spend time together, time that is drawn way from the job or the business. The following hypothesis is formulated:

H4: Having a partner has a negative effect on the preference for work time.

Age of the entrepreneur

Time allocation decisions are strongly related to age (Juster and Stafford, 1991). Market work of men tends to peak between the age of 25 and 44 years old, whereas leisure is high for both young and old men (Hill, 1985; Blinder and Weiss, 1976). In general, there seems to be a reversed U-shaped relationship between age and the preference for work time, where this preference is highest in 'middle-aged' individuals. However, this reversed U-shaped relationship may be weaker for entrepreneurs, as it may be expected that young people who run a business have a higher preference for work time as compared to other 'youngsters'. The following hypothesis is formulated:

H5: There is a reversed U-shaped relationship between age of the entrepreneur and the preference for work time.

Controls

In the explanation of the preference for work time in the firm the following controls are included:

Number of employees. The influence of firm size (as measured by the number of employees) on the preference for work time is ambiguous. On the one hand, larger firms are characterized by a more complex structure, with more employees to be managed. On the other hand, in larger firms there is more room and need for specialization and role differentiation where the entrepreneur delegates tasks and responsibilities to employees (Cooper et al., 1997; Churchill and Lewis, 1983).

Services. A service business may require less scale, time and effort than a production company or high-tech business, with inherent complex production or technological structures.

Running a business from home may either lead to a higher or lower preference for work time. There is direct competition between homework and business activities, where time spent in the business has a negative effect on time spent on homework, and vice-versa.

4.2.2 Productivity of Work Time

In this section we will discuss the influence of human, social and financial capital on the productivity of work time (which will be positively related to firm performance) in new ventures.

Human capital

According to human capital theorists (Becker, 1965; Mincer, 1974) knowledge increases the cognitive ability of an individual, resulting in more productive and efficient behavior. Davidsson and Honig (2003) argue that individuals with higher levels of human capital are more self-confident. Hence, human capital will influence the productivity of work time of an entrepreneur. Indeed, human capital has been found to positively influence performance of entrepreneurial firms (Chandler and Hanks, 1994, 1998; Cooper et al., 1994; Pennings et al., 1998). A distinction has been made between general and specific human capital (Becker, 1993). Castanias and Helfat (1991; 2001) build on Becker's notion of general versus specific human capital and discriminate between generic, industry-specific and firm-specific skills or knowledge.

General human capital influences the extent to which an individual has (had) the opportunity to acquire relevant knowledge, skills and contacts (Cooper et al., 1994). An entrepreneur's education and experience may enhance learning and increase the problem-solving ability of an individual within a given environment (e.g., a firm).

Indeed, Gimeno et al. (1997) find that formal education positively influences the economic performance of the venture. The following hypothesis is formulated:

H6: Educational level has a positive influence on the productivity of work time.

According to Cooper et al. (1994) gender can also be seen as a general human capital factor. Like education level, gender "may serve as a proxy for life experiences and access to networks and other resources that bear upon the prospects for success of individual entrepreneurs" (Cooper et al., 1994, p. 376). Although the educational level is largely similar for female and male entrepreneurs (Fischer et al., 1993; Birley et al., 1987), men are more likely to have entrepreneurial experience (Fischer et al., 1993; Kalleberg and Leicht, 1991), financial management experience, and industry experience (Fischer et al., 1993; Verheul and Thurik, 2001). In addition, it has been suggested that women do not have equal access to financial and social capital (Fischer et al., 1993; Moore and Buttner, 1997). Hence, women may be less productive than men because they have had fewer opportunities to acquire different types of capital[135]. However, when controlling for the different forms of human, social and financial capital (as well as for sector and firm size), we do not expect to find gender differences with respect to productivity of work time. The following hypothesis is formulated:

H7: Gender of the entrepreneur does not influence the productivity of work time (*when controlled for human, social and financial capital*).

Age of the entrepreneur may also be "picking up some omitted variables measuring the effect of human capital, such as years of work experience" (Gimeno et al., 1997, p. 772). Younger people often have had less opportunity to build up relevant work experience. On the other hand, younger people may be more energetic, ambitious and optimistic about future career opportunities. We expect that the knowledge accumulation of older entrepreneurs does not outweigh the decrease in productivity. The following hypothesis is formulated:

H8: Age of the entrepreneur has a negative effect on the productivity of work time.

Management-specific knowledge of entrepreneurs built up through earlier experiences increases the probability of pursuing profitable strategies and dealing adequately with the different management issues (e.g., personnel, finance) (Cooper et al., 1994). It is important to distinguish between management and entrepreneurial experience, the latter referring to experience with starting and running a small firm. It has been found that entrepreneurial experience is an important factor explaining new venture performance, and that management experience is of less importance (Stuart and Abetti, 1990; Gimeno et al., 1997). The following hypothesis is formulated:

[135] Research has shown that the performance of female-owned firms in terms of profits, revenue growth and employment is below that of male led-firms (Rosa et al., 1996; Carter et al., 1997).

H9: Entrepreneurial experience has a positive influence on the productivity of work time.

Entrepreneurs who have worked in the same industry in the past are likely to have a network of relationships with suppliers, customers and distributors, providing them with support and credibility (Cooper et al., 1994). Industry-specific knowledge has proven to be important for new venture performance (Cooper et al., 1994). The following hypothesis is formulated:

H10: Experience in the industry has a positive influence on the productivity of work time.

Past work experience of the entrepreneur may be relevant for new firm performance, above and beyond industry experience. According to Vesper (1980) entrepreneurs who run firms that are closely related to the activities they did in the past have acquired relevant skills and abilities as well as the appropriate 'prior mental programming'. The following hypothesis is formulated:

H11: The extent to which past work is related to the current activities of the entrepreneur has a positive influence on the productivity of work time.

Preparation and/or planning of the process of new venture creation may also lead to higher performance of the new firm. Duchesneau and Gartner (1990) find that a comprehensive planning process as well as time spent on planning positively relate to performance. In addition, gathering relevant information about the start-up process and the specific line of business has found to be important (Duchesneau and Gartner, 1990). After start-up it is important to keep up with market and industry developments to be able to maintain productivity. The following hypotheses are formulated:

H12: Business planning has a positive influence on the productivity of work time.

H13: Reading professional literature to keep up with developments in the industry has a positive influence on the productivity of work time.

Financial capital

Financial capital can have a *direct* effect on productivity through the ability to undertake more capital-intensive or ambitious business strategies, change courses of actions, and buy time (and learn from mistakes). High capital-intensive strategies are relatively well protected from imitation and characterized by higher rates of return. *Indirectly*, capital investments may enable training and more comprehensive planning, influencing firm performance (Cooper et al., 1994). Cooper and Gimeno-Gascon (1992) find that most studies investigating the relationship between initial capital and performance have found that more capital leads to a higher performance. The following hypothesis is formulated:

H14: The amount of initial (i.e., start-up) capital has a positive influence on the productivity of work time.

Social capital

Social capital refers to the access of an individual to various resources (e.g., capital, information, access to markets) through interaction with members of a network (Portes, 1998; Bourdieu, 1986). This network may relate to relationships with family, friends and the community but also to more formal arrangements, such as professional or business networks. Interaction and communication within networks of entrepreneurs may contribute to higher performance of a venture as it enables the exchange of valuable information and other resources[136]. Indeed, Davidsson and Honig (2003) find a strong positive effect of being a member of a business network on early stage firm performance. The following hypothesis is formulated:

H15: Contact with other entrepreneurs in a network has a positive effect on the productivity of work time.

Controls

In the explanation of the productivity of work time the following controls are included:

Number of employees. The productivity of work time in a larger firm may be higher as there is room for delegation and specialization and specific tasks are fulfilled by employees who are most qualified to perform them. On the other hand, the level of red tape (bureaucracy) could present an impediment to efficient and effective operations in larger firms, although this may not be particularly important for new ventures.

Services. Because the service sector is characterized by relatively high labor intensity, it may be that the productivity of work time in these businesses is lower than in firms where capital is the main production factor[137].

Innovation. The innovation variable in our study measures the extent to which products or services are based on new technology. It may be expected that the use of a new technology leads to an increase in the productivity of work time.

Firm status. A business may be started from scratch; it may be a take-over of an existing business, or a re-started business. It may be expected that take-overs and restarted businesses have a higher performance than firms that are started from scratch.

[136] In this context Davidsson and Honig (2003) refer to *bridging social capital* based on *weak ties*. For a discussion of the importance of weak ties in obtaining resources we refer to Granovetter (1973).
[137] Cooper et al. (1994) find that growth is lower for retail firms and firms in personal services.

Outsourcing. A business that contracts out certain activities may have a higher performance per time unit as one can contract out those activities with which the owner-manager has little experience or that do not belong to the core business[138].

4.3 Data Source and Variable Description

To test the model and hypotheses we use data gathered through an extensive and detailed survey of the research institute EIM Business and Policy Research. A total sample of approximately 2000 Dutch entrepreneurs was obtained from the population of Dutch entrepreneurs who started a business in 1994. Of these 2000 entrepreneurs, approximately 1500 are male and 500 are female. This is comparable to the average distribution of female and male entrepreneurs in most OECD-countries (OECD, 1998b).

The present study focuses on the first year after start-up and is based upon a sub-sample of 1256 Dutch entrepreneurs (of whom 919 are male and 337 are female) for which information on all relevant variables is available. In this study an entrepreneur is someone who is owner or owner-manager of the business. Information is available and used on the number of hours worked, and the characteristics of the entrepreneur and his or her business. Because entrepreneurs are followed during subsequent years, information on time allocation decisions is also available for the years after start-up, enabling both a cross-sectional comparison of time allocation decisions of entrepreneurs and a comparison over time. For the purposes of the present study the main analyses are of a cross-sectional nature, and we will only briefly discuss changes in the number of working hours over time to validate the model.

Table 4.1 presents the explanatory and control variables included in the present study. In addition to variable descriptions, means and standard deviations for the variables are presented. The Hours variable has an average of 3.95, indicating an average number of working hours close to 40 hours a week. The mean for female and male entrepreneurs is 3.31 and 4.18, respectively. Hence, men work more hours, on average, than women.

[138] However, empirical evidence on the relationship between outsourcing and firm performance is limited. For example, Gilley and Rasheed (2000) find that there is no direct effect of outsourcing on firm performance, but that outsourcing interacts with firm strategy and environmental dynamism.

Table 4.1: Description of variables

Variable name	Variable description	Mean	St. dev.
Hours	Number of hours invested in the firm in 1994 [1=<10; 2=10-19; 3=20-29; 4=30-39; 5=40-49; 6=50-60; 7=>60]	3.95	2.05
OtherIncome	Do you or your partner have other sources of income? [0=no; 1=yes]	0.74	0.44
Necessity	Are you dependent upon the profit out of the firm for subsistence? [1 {practically not} to 4 {completely}]	2.29	1.19
OtherJob	Do you have another (wage) job besides running the business? [0=no; 1=yes]	0.27	0.44
OtherFirm	Do you run another firm besides running the business? [0=no; 1=yes]	0.04	0.19
FamilyCare	Do you have family responsibilities besides running the business? [0=no; 1=yes]	0.10	0.30
Schooling	Do you take schooling besides running the business? [0=no; 1=yes]	0.06	0.24
Gender	Are you male or female? [0=male and 1=female]	0.27	0.44
Partner	Do you have a partner? [0=no partner; 1=partner]	0.81	0.39
Age	Age in categories [1=<20; 2=20-24; 3=25-29; 4=30-34; 5=35-39; 6=40-44; 7=45-49; 8=50-54; 9=55-59; 10=>60]	4.69	1.80
Education	What is your highest level of education? [1=average secondary education; 2=higher secondary education; 3=low-level vocational training; 4=Leerlingstelsel*; 5=mid-level vocational training; 6=high-level vocational training, 7=university]	4.34	1.84
ENTexperience	Did you run a business prior to the start-up of this firm? [0=no; 1=yes]	0.06	0.25
INDexperience	What is the degree of industry experience you have? [1 {very weak} to 5 {very strong}]	3.87	0.94
Similarity	Are your current activities related to past work? [1 {no} to 3 {almost identical}]	2.02	0.77
BusinessPlan	Did you write a business plan prior to or after start-up? [0=no; 1=yes]	0.37	0.48
ProfLiterature	Do you read professional literature to keep up with industry developments? [1 {never} to 3 {regularly}]	2.52	0.69
StartCapital	What is the total amount of start-up capital? [1=,<fl.10.000; 2=fl.10.000-fl.25.000; 3=fl.25.000-fl.50.000; 4=fl.50.000-fl.100.000; 5=fl.100.000-fl. 250.000; 6=fl.250.000-fl.500.000; 7= >fl.500.000]**	2.15	1.45
Contacts	Do you have contacts with other entrepreneurs beyond regular business contacts in networks? [1 {never} to 3 {regularly}]	1.58	0.71
Employees	How many employees do you have in 1994?***	0.35	1.55
Service	Do you run a service firm? [0=no; 1=yes]	0.49	0.50
HomeBased	Do you run the firm from home or do you have a business premises? [1=business premises; 2=home-business premises; 3= home-based]	2.46	0.83
Innovation	Are your products/services based upon new technology that has not been used until 3 years ago? [1 {practically not} to 4 {almost completely}]	1.54	0.88
FirmStatus	What is your firm's status? [1=new firm; 2=restart existing firm; 3=take-over]	1.25	0.63
Outsourcing	Are certain activities within the firm contracted out? [0=no; 1=yes]	0.45	0.50

* In the 'Leerlingstelsel' students go to school for 1 day a week and work during the rest of the week (i.e., a minimum of 20 hours); ** StartCapital is measured in Dutch Guilders (florin). One guilder is equal to 0.45378 Euro; *** The number of employees is measured in terms of employees who work fulltime, i.e., more than 32 hours a week.

4.4 Model Specification

In our empirical analysis we first test for the effects of the explanatory variables on the number of hours worked in the firm using a linear regression analysis. However, variation in the number of working hours across entrepreneurs is assumed due to either differences in preference for working hours or differences in productivity of work time. The linear regression analysis does not enable us to distinguish between these differences and we resort to a nonlinear regression analysis, disentangling these two effects on the number of working hours.

The nonlinear model is derived as follows. We assume that entrepreneurs maximize their utility, $Max_n U(\pi(n), N-n)$, where profit (π) is dependent upon the number of hours worked (n), and N is the total number of hours available per week[139]. Utility is positively influenced by profit and leisure time N-n. We assume a Cobb-Douglas specification for utility: $U_i = \pi_i(n_i)^{\alpha_i}(N-n_i)^{1-\alpha_i}$, where the relation between profit and working hours is taken as $\pi_i = \eta n_i^{\gamma_i}$. We expect that $0 < \alpha_i < 1$ and that γ_i is positive (working more hours results in higher profit). Because we assume that the productivity of an additional working hour is less than that of the preceding hour, we expect the γ_i on average to be somewhat below unity. Substituting the profit relationship, taking logarithms and optimizing over n leads to the following relationship: $n_i = \frac{\alpha_i \gamma_i}{1-\alpha_i+\alpha_i\gamma_i} N$, where α_i is the individual-specific preference for profit versus leisure time and γ_i is the individual-specific productivity of work time. Both an increase in α and γ lead to a higher utility-maximizing number of working hours. The individual-specific preference and productivity are determined by the factors as specified in the hypotheses.

The number of hours work per week (n) is categorized from 1 to 7 (see Table 4.1). The maximum number of hours available per week is assumed to be 100 corresponding to a category code of 10. Hence, we fix N at 10 in the nonlinear regression analysis, with $n = \frac{10\alpha_i\gamma_i}{1-\alpha_i+\alpha_i\gamma_i}$. The model is estimated using non-linear least squares regression

[139] This is a departure from Lévesque and Schade (2004) who assume bounded rationality in the choice for the number of working hours. In Section 4.5.5 we investigate to what extent entrepreneurs correct for apparent errors in their choice of utility maximizing hours, suggesting that there is a certain degree of 'rationality' in their time allocation decisions.

analysis. To ensure identification of the nonlinear regression equation, we choose to fix α_0 at 0.5. Altering this value does not substantially affect the results.

4.5 Results

In Table 4.2 we present the results of both the linear regression analysis, explaining the number of working hours in the firm, and the nonlinear regression analysis, explaining the preference for work time versus leisure time (α) and the productivity of time use (γ). The average value of the estimated α_i and γ_i is 0.43 and 0.89, respectively. This confirms our expectations that the values for these parameters fall within the unit interval. For each of the variables we also included the mean for female and male entrepreneurs to investigate indirect gender effects (via the other explanatory variables) on time investments.

Table 4.2: Linear and nonlinear regression results

Variables	Mean Variables		Linear model (Hours)	Nonlinear model (Hours)		Profits
	Male	Female		α	γ	
Constant			2.771***	0.5	0.222	0.003
OtherIncome	0.70	0.84	-0.239**	-0.027**		
Necessity	2.48	1.78	0.406***	0.039***		
OtherJob	0.27	0.26	-0.864***	-0.102***		
OtherFirm	0.04	0.03	-0.133	-0.024		
FamilyCare	0.03	0.29	-0.177	-0.020		
Schooling	0.05	0.10	-0.638***	-0.078***		
Gender	0	1	-0.252**	0.023	-0.166	-0.189***
Partner	0.80	0.85	0.199*	0.020		
Age	4.76	4.50	-0.194	-0.016	-0.020	0.013
Age_sq	25.97	23.12	0.012	0.001		
Education	4.35	4.29	0.041*		0.013	-0.009
ENT experience	0.07	0.04	0.188		0.068	-0.055
IND experience	3.92	3.75	0.147***		0.043**	-0.025
Similarity	2.08	1.84	0.128**		0.047*	0.068
BusinessPlan	0.39	0.32	0.280***		0.106**	0.080
ProfLiterature	2.53	2.51	-0.071		-0.028	-0.005
StartCapital	2.26	1.86	0.219***		0.096***	0.056***
Contacts	1.61	1.49	0.140**		0.055**	0.070*
Employees	0.42	0.15	0.006	-0.013**	0.132*	0.007
Service	0.47	0.56	-0.407***	-0.028	-0.042	0.066
HomeBased	2.45	2.48	-0.278***	-0.025***		
Innovation	1.58	1.41	0.026		0.005	0.003
FirmStatus	1.25	1.23	0.227***		0.111***	0.060*
Outsourcing	0.46	0.42	0.352***		0.137***	-0.025
			R^2=0.490	R^2=0.497		R^2=0.486

Note: the dependent variable is Hours for the (non)linear Hours models. The dependent variable for the profit model (in the final column) is the logarithm of expected profit (in 1995). Unstandardized coefficients are presented. *, ** and *** represent significance levels of 0.10, 0.05 and 0.01, respectively.

4.5.1 Number of Working Hours

From the linear regression results we see that several factors influence the number of working hours in the firm. The side-activities OtherJob and Schooling have a negative effect on the number of hours invested in the firm. Also the availability of other

income (OtherIncome) negatively influences the number of hours worked in the firm, whereas the dependency of the entrepreneur on the firm's profit (Necessity) positively influences time investments. The variables INDexperience, BusinessPlan, StartCapital, FirmStatus, Outsourcing, Similarity and Contacts all have positive effects on the number of hours invested in the business. Service and home-based firms are characterized by lower time investments. Also, there is a weak positive influence of Partner and Education on hours invested in the business. Even when controlled for side-activities, gender has a negative effect on time invested in the business, i.e., women invest less of their time in the business than men.

Contrary to what may be expected, the control variable Employees does not significantly influence the number of hours invested in the business. The subsequent sections, dealing with the outcomes of the nonlinear model, indicate that this may be explained by the fact that the number of employees has a significant *negative* effect on preferences and a *positive* effect on productivity, i.e., these two contrary effects cancel out the overall effect of Employees on the number of hours invested in the firm. This shows the importance of discriminating between performance and productivity effects, to be able to understand time allocation decisions.

4.5.2 Preference for Work Time

From the nonlinear regression results we see that the preference for work time versus leisure time is determined by several variables. The availability of other income than that generated from the firm (OtherIncome) has a negative impact on the preference for work time, whereas the degree of dependency upon the profit generated from business activities (Necessity) has a positive impact. Hence, it may be argued that the more an entrepreneur is dependent upon *revenues* and *profit* from the firm for subsistence, the higher the preference for investing time in the business. Hypothesis 1 is supported.

Having a wage job on the side (OtherJob) or being involved in schooling next to running a business (Schooling) negatively influence the preference for working hours. However, the side-activities OtherFirm and FamilyCare do not influence preferences. It may be that entrepreneurs who run more than one firm have already taken these additional hours into account answering the question of how many hours they invest in the business. Also, it seems that taking care of the family (FamilyCare) comes at the expense of leisure time rather than work time. Hypothesis 2 is only partially supported.

Age does not appear to have the hypothesized reversed U-shaped relationship with preference for work time. The effect of both Age and Age squared is not significant. Although not significant, the signs of the coefficients are contrary to what we expected. This outcome may be specific to the study of time preferences of entrepreneurs. As we argued, young entrepreneurs may not have a (high) need for leisure time. Moreover, older entrepreneurs may have more time available, for

instance because children have left the home. Hypothesis 5 is not supported. Moreover, there is no significant effect of Partner on preference for work time. Hypothesis 4 is not supported. Gender does not appear to have a separate effect on the preference for work time. Hypothesis 3 is supported.

With respect to the controls we see that the number of employees (Employees) has a negative effect on the preference for work time. It appears that entrepreneurs hire more employees to be able to delegate some tasks and responsibilities and work fewer hours. Also, running a firm from the home (HomeBased) appears related to a lower preference to invest time in the business.

4.5.3 Productivity of Work Time

The productivity of time use is to a large extent explained by the amount of start-up capital (StartCapital), whether an entrepreneur has industry experience (INDexperience), has written a business plan (BusinessPlan) and has contacts with other entrepreneurs in networks (Contacts). Hypotheses 10, 12, 14 and 15 are supported. Moreover, there is a small positive effect of business similarity (Similarity) on the productivity of time use. This provides some support for Hypothesis 11. We do not find significant effects for Education, Gender, Age, ENTexperience and ProfLiterature. Hypotheses 6 to 9 and 13 are not supported.

The control variables FirmStatus and Outsourcing are also important in explaining the productivity of work time. A take-over has a higher productivity than new or restarted firms, and firms that contract out activities are characterized by a higher productivity than firms that do not engage in outsourcing. There is also a small positive effect of firm size on productivity of work time. Again, a higher number of employees enables delegation of activities to those employees who are best qualified for the job.

4.5.4 Gender Effects

It is striking to see that even though we controlled for side-activities and other explanatory factors, the linear regression results indicate that women invest less of their time in the business than men. Hence, there is a negative *direct* effect of the gender of the entrepreneur on the number of hours invested in the business. In addition, there may be *indirect* gender effects on time investments through the other explanatory variables. In Table 4.2 we have included the means of the explanatory variables for both female and male entrepreneurs. On the basis of these means and using chi-square statistics, we find that – as compared to male entrepreneurs – female entrepreneurs are less dependent upon profit from the firm for subsistence (Necessity), have on average a lower educational level (Education), have less industry experience (INDexperience), their businesses are less similar to previous work (Similarity), they are less likely to have written a business plan (BusinessPlan), have less capital invested in the business (StartCapital) and are less likely to have contacts with other entrepreneurs (Contacts), whereas these explanatory factors all have a positive

influence on the number of hours worked. Moreover, we find that female entrepreneurs have more access to other sources of income (OtherIncome), are more likely to follow schooling besides running the business (Schooling), and are more likely to run a service firm (Service) than male entrepreneurs, whereas these factors have a negative influence on the number of hours invested. Hence, indirectly the gender of the entrepreneur has a negative impact on the number of hours invested in the business for a range of reasons.

Although gender has a negative effect on the number of hours worked, it does not have a significant (direct) impact on either the preference for work time or the productivity of work time. However, the average value of the efficiency coefficient of time for the female sample is 0.68, as compared to 0.96 for the male sample (and 0.89 for the total sample). There is no such difference in the average value of alpha (i.e., the preference for work time). Average values of alpha amount to 0.43 for the total and male sample and 0.42 for the female sample. The difference in average value for gamma between female and male entrepreneurs may largely be attributed to negative *indirect* gender effects. Female entrepreneurs have less industry experience (INDexperience), are less likely to have written a business plan (BusinessPlan), have less start-up capital (StartCapital), are less likely to have contact with other entrepreneurs outside regular business contacts (Contact), and have smaller firms in terms of number of employees (Employees). These factors all have a positive impact on the productivity of work time.

4.5.5 Profits and Predictions

The model assumes that entrepreneurs use their knowledge about the extent to which various factors influence the productivity of working hours and that they choose their working hours by way of 'rationally' maximizing utility. In the present section we discuss these assumptions. First, we test whether the expectations of entrepreneurs about how distinct factors influence their productivity reflects the actual impact of these factors. To test for this we perform a regression analysis using data on expected profits in 1995 (reported by the entrepreneurs one year after start-up). Basis for this analysis is the profit equation $\pi_i = \eta n_i^{\gamma_i}$ proposed earlier in this study. A logarithmic transformation of this equation is used $\ln(\pi_i) = \ln\eta + \gamma_i \ln n_i + \varepsilon_i$ to test for the influence of the components of γ_i on profits in 1995 (using 162 observations, n_i measured in 1995)[140].

[140] We used only those observations from 1995 for which there was a positive profit that was not (considerably) higher than the original expectation. Observations are limited to the ones with positive profit since there can not exist negative profits according to long-run expectations (otherwise the entrepreneurs would have never started in the first place).

The final column in Table 4.2 reports the results of the components of γ_i in the profit equation. Comparing the outcomes of the nonlinear model with those of the profit equation – with the nonlinear model estimating expectations of productivity and the profit equation estimating the realization of profits – it can be seen that expectations are not completely fulfilled[141]. Although some factors have very similar impacts in the two models (i.e., the nonlinear model and the profit equation), with respect to the impact of industry experience and outsourcing, the outcomes of the two models (i.e., the nonlinear model and the profit equation) diverge. It may be that entrepreneurs think that outsourcing is efficient (enabling them to concentrate on the core business), but that – in fact – outsourcing is relatively expensive, negatively affecting the profits. The absence of an industry effect in the profit equation may be attributed to an overestimation of capacities of entrepreneurs with industry experience, running the risk of being overconfident and not adequately adapting to industry developments.

Second, an important test of the validity of the assumption of rational choice is its out-of-sample predictive ability. Entrepreneurs, who work either more or less hours than predicted by the model, are expected to adjust their time investments in the next years to increase utility. Entrepreneurs with a positive residual in the regression explaining working hours in 1994 are expected to decrease their efforts in 1995 while those with a negative residual are expected to increase their efforts. We tested this by a regression on the number of working hours in 1994, including the number of working hours in 1995 and the 1994 working hours residual as explanatory variables. The coefficient of the 1994 residual is -0.41 and is significant at the 0.01-level (with a sample size of 680). Similar analyses for later years (where 1995 is replaced by 1996 through 1999, with sample sizes between 613 and 348) show comparable coefficients. This suggests that there is about 40 percent adjustment within a year, with little adjustment in later years. Hence, entrepreneurs appear to adjust their working hours towards the predicted utility maximizing ones, lending support to the validity of the model. However, adjustment is not perfect, suggesting that there are omitted variables or maybe bounded rational decision making (cp. Lévesque and Schade, 2004).

4.6 Discussion and Conclusion

The present study has started from the notion that time is an important resource for entrepreneurs, and in particular for entrepreneurs in new ventures. For these ventures time investment is an important issue as a series of (usually) new and non-recurrent activities is undertaken, laying the foundation of the firm and securing its viability.

There have not been many studies investigating time allocation decisions of self-employed individuals (distinguishing between work time within the firm and time

[141] It should be noted that the fact that many of the outcomes in the profit equation are less significant, is attributable to the lower number of observations used for testing the profit equation (n=162).

spent outside the firm). In addition to studying influences on the number of working hours (using a linear model), the present study also explicitly distinguishes between preference and productivity effects on the number of working hours (using a nonlinear model). Both the preference for work time in the firm and the productivity of work time are expected to have a positive impact on the number of working hours in the firm. Special focus is on gender differences regarding time allocation and productivity of time use.

To test for the influences on allocation and productivity of working time (within the firm) a nonlinear model is proposed that is tested with data gathered by the research institute EIM Business and Policy Research on 1256 Dutch business owners or owner-managers (of whom 919 are male and 337 are female) who started a business in 1994.

Preference effects occur through having other income available, having a wage-job on the side, schooling activities, the number of employees and whether a firm is home-based or not. Productivity effects work through factors, such as industry experience, business planning, the amount of start-up capital, contacts with other entrepreneurs in networks, the number of employees and outsourcing activities. A separate test investigating influences on the actual level of profits indicate that the amount of start-up capital and networking are most important in explaining productivity.

The expectations of the entrepreneurs about which factors influence their productivity do not completely coincide with their actual impact. In particular, the expected productivity impacts of the amount of industry experience and outsourcing activities appear to be relatively optimistic when compared to their actual impacts. With respect to the set of factors influencing productivity, this study can create some awareness among both policy makers and entrepreneurs about why some firms are productive and others are not, and give recommendations about how to increase the productivity of time use.

That the distinction between preferences and productivity is an important one is demonstrated in this study by the effect of firm size (as measured by the number of employees). We have seen that firm size does not have an overall effect on the number of working hours (in the linear) model. However, studying the effect of firm size more closely, we see that the absence of a size effect can be attributed to a balancing out of a negative size effect on preferences and a positive size effect on productivity.

The present study emphasizes the effect of gender on the allocation and productivity of time invested in new ventures. A distinction is made between total, direct and indirect gender effects to create more insight in the way gender of the entrepreneur can influence time allocation decisions.

Total gender effects refer to differences in average time investments and productivity of time use of female and male entrepreneurs. Underlying reasons for these differences are not (explicitly) discussed and/or taken into account. In this study we have seen that

on average women work fewer hours in the business than men (i.e., mean for the *Hours* variable is 3.31 for women and 4.18 for men); the preference for work time on average is quite similar for women and men (i.e., average value for alpha is 0.43 for men and 0.42 for women); and the productivity of work time on average is lower for women than for men (i.e., average value for gamma is 0.68 for women and 0.96 for men).

Direct gender effects refer to gender differences in time allocation, preferences and productivity when controlling for a range of other factors. These effects may be considered residual effects as we control for a range of factors, but there still may be other factors in play that account for this direct effect. From the linear regression analysis we have seen that there is a negative direct effect of gender on the number of working hours, i.e., when controlled for a range of other explanatory factors, women work fewer hours than men do. From the nonlinear regression analysis we have seen that there are no direct effects of gender on either the preference for or the productivity of working hours. However, we do find a negative direct effect of the gender of the entrepreneur when estimating (expected) profits. It may be argued that the lower profit levels in businesses of women are due to their ambitions, with women being more likely to value quality and pursue other goals that are not directly related to financial performance (e.g., Brush, 1992; Rosa et al., 1996; Verheul et al., 2002).

Indirect gender effects refer to differences in time allocation decisions and productivity of working time that can be attributed to differences between women and men regarding the other explanatory variables. We find negative indirect effects of gender on the number of working hours, and both the preference for and productivity of working hours. For instance, with respect to the productivity of working hours we see that because women have less industry experience, are less likely to have written a business plan, invest lower amounts of start-up capital, are less likely to have contact with other entrepreneurs in networks, and have smaller firms, and these factors – in turn – all have a positive impact on productivity, women experience lower productivity levels. To conclude we have seen that on average female entrepreneurs work fewer hours in the business than male entrepreneurs which is due to an on average lower productivity of work time of women. This is an indirect gender effect, where the lower productivity of work time of women can – in turn – be attributed to lower amounts of human, social and financial capital of female entrepreneurs, smaller firm size and possibly specific ambitions or goals, not directly related to economic performance.

In the present study the classification of explanatory factors as either 'preference' or 'productivity' factors (with the exception of gender, firm size and sector) are derived from theoretical considerations in the literature. Future research may explore whether the influence of the selected factors works through preferences, productivity or both. In the latter case it may be fruitful to single out the most important effect through including the explanatory variables at both side, i.e., explaining both preferences and productivity in the nonlinear regression analysis.

From a practitioners standpoint it is important to understand why female entrepreneurs display lower productivity levels (per time unit) than male entrepreneurs. If (local) policy makers find ways to increase the productivity in firms led by women by way of increasing human, social and financial capital levels, this may raise the economic performance of these firms, as well as that of the regions within with these firms are established. The present study suggests that productivity in female-led firms can be increased through different mechanisms, for instance, stimulating women to acquire some industry experience prior to starting up their own firm, stimulating women to become member and take part in networks where they can learn from the experiences of other entrepreneurs, and also promoting access of women to financial capital. With respect to networking it may be argued that because women still tend to take on the bulk of household and/or childcare responsibilities, they have limited time to spend on networking. Indeed, increasing access to affordable childcare facilities that fit the needs of female entrepreneurs is an important policy issue in the Netherlands. For example, most of the day-care centers in the Netherlands are relatively expensive (in particular for female entrepreneurs who do not have an earning partner) and fail to have flexible opening hours (Mandos et al., 2001).

From a financial perspective, policy makers can raise the awareness among women that financial capital can heighten productivity levels, provided they make the right investments and make efficient use of it. It is important for policy makers to draw the right conclusions about the effects of capital investments in female-led firms. In this respect it is important to understand where the lower amounts of capital invested in female-owned firms come from, for instance, can they be attributed to the business profile, ambitions of female entrepreneurs and/or gender-related problems acquiring financial capital. In their study Verheul and Thurik (2001) indicate that the smaller amount of financial capital used by female entrepreneurs is largely determined by the profile of women-owned businesses.

Chapter 5: Start-Up Capital; Does Gender Matter?

5.1 Introduction

Developed countries are undergoing a fundamental shift away from a managed economy and toward an entrepreneurial economy (Audretsch and Thurik, 2001). Economic activity is moving from large, incumbent firms toward small, new ones. There is a growing literature about how and why the developed countries are undergoing this fundamental shift (Brock and Evans, 1989, Admiraal, 1996 and Audretsch and Thurik, 2000). The speed of this industrial transformation process has varied considerably across countries and industries (Carree et al., 2002 and Thurik, 1999). Increasingly, evidence becomes available that this transformation has to be promoted (Gavron et al., 1998). Empirical evidence shows that those countries and industries that are lagging behind in this process experience lower growth and productivity levels and higher levels of unemployment (Thurik, 1996, Carree and Thurik, 1999 and Audretsch and Thurik, 2000). Entrepreneurship seems to be a driving force in economic development. However, entrepreneurship itself cannot be a determinant of growth. It is an ill-defined, at best multidimensional concept. Understanding its role requires the decomposition of the concept (Wennekers and Thurik, 1999). Dimensions of entrepreneurship are smallness, competition, deregulation, innovation, co-operation, variation, turbulence and motivation (Audretsch and Thurik, 1999 and 2001). Deregulation and variation are essential dimensions. Low barriers should enable a broad variety of entrepreneurs to enter the market. Diversity in terms of products, processes, forms of organization and targeted markets should leads to a selection process where customers are at liberty to choose according to their preferences. This process where entrepreneurs seek for better products, processes, forms of organization and markets can only thrive under enabling rather that constraining public policies (Audretsch and Thurik, 2001). Therefore, it is important that all potential entrepreneurs are able to play a role in securing maximum diversity and in taking maximum advantage of free competition. No group of potential entrepreneurs should experience any barrier for starting or developing a business. From this perspective it is worth noting that female entrepreneurs are still underrepresented.

The desire of women to be economically independent leads to their increasing participation in the labor market and an increasing number of female entrepreneurs (Koper, 1993). Moreover, contextual factors, like social structures, family and organized life influence the access women have to entrepreneurial opportunities (Brush and Hisrich, 1999).

In spite of the growing number of female entrepreneurs, the share of female entrepreneurs is still disproportionally low when compared to their participation rate. Considering the backward position of female entrepreneurs and the need for diversity, it is important to pay attention to specific barriers for female entrepreneurs, like the combination of social and economic responsibilities and the consequences of these specific barriers for female entrepreneurship. Furthermore, it is important to investigate whether the impact of general barriers, like the acquisition of financial resources, differs between female and male entrepreneurs[142].

Entrepreneurs may meet several obstacles when starting a business like unexpected or fierce competition, delayed customer payments and limited access to financial resources. Indeed, acquiring financial capital is often referred to as an important problem for entrepreneurs (Hughes and Storey, 1994; EIM, 1998; OECD, 1998b). Entrepreneurs starting up a business usually have little equity to finance their business with, while debt capital is difficult to acquire. Banks are often reluctant to lend money to small businesses because of low expected profit margins, asymmetrical information and high risks (EIM, 1998). Most starting entrepreneurs use their own money for financing their business. However, when the amount of financial capital needed is higher, more external capital is needed. External capital is an important source also for small enterprises (OECD, 1998b). Bank loans in particular are much relied upon. This is also put forward by Riding and Swift stating that "*It is well known that small businesses rely heavily on banks for both short- and long-term debt capital*" (Riding and Swift, 1990, p. 329). Other important sources of external finance are family members, suppliers and other business partners (Van Uxem and Bais, 1996). These sources will not be explicitly investigated in the present study.

Considerable sums of public money are spent to diminish alleged debt gaps, particularly for small expanding firms and start-ups. Subsidized loans and loan guarantees are the most common instruments of government assistance programs to support small and new businesses. The idea is that capital markets do not provide adequate funds for small and new businesses. There are differing views whether the resulting debt gaps influences the probability of survival. In the analysis of Cressy (1996) this is not the case whereas in that of Evans and Jovanovic (1989) and Bates (1990) it is. In the present chapter we focus on the specific situation of female start-ups.

In the literature much attention is paid to financial problems of female entrepreneurs. This may have to do with the size of their businesses. It is often reported that the start-up size of businesses run by women is smaller than that of businesses run by men (Carter and Rosa, 1998; OECD, 1998b; Stigter, 1999). A variety of reasons is brought

[142] Female entrepreneurship is not only important because of the need for diversity. Entrepreneurship is an important opportunity to combine work- and household responsibilities (OECD, 1998b). Moreover, female entrepreneurs can play an important role in the fulfilment of contemporary needs, because they often start in relatively new and experimental industries.

forward for the smallness of the enterprises run by women. First, female entrepreneurs usually have a smaller amount of equity capital available because of lower salary payments in earlier jobs, discontinuities of earlier jobs or because family property is usually registered in the name of the husband. Second, the amount of start-up capital may also be related to the sector where an entrepreneur operates (EIM/ENSR, 1996). Women often start in sectors with low capital requirements, like the service sector. Banks are often reluctant to lend money to these sectors characterized by a high mobility. Finally, women are more likely to be risk avers than men (EIM/ENSR, 1996). This can also be an explanation for the smaller size of the businesses of female entrepreneurs.

Apart from the amount of start-up capital, female and male entrepreneurs may differ with respect to the capital structure of their business. Clearly, a distinction can be made between equity and debt capital. Finance theorists have argued about whether there exists an optimal capital structure for small firms in terms of both debt and equity (Hughes and Storey, 1994). Market imperfections, like taxes, bankruptcy costs, agency costs (monitoring) and the signaling effect (information asymmetry leading to information costs) have been brought forward as determinants of the firm's optimal capital structure (Van der Wijst and Thurik, 1996). In practice, the ensemble of market imperfections leads to a trade-off between equity and debt financing.

In the neo-classical tradition, the trade-off theory describes the optimum in terms of a trade-off between tax advantages of debt and the increase in expected bankruptcy costs. The agency theory gives an alternative explanation, independent of taxes and bankruptcy costs, which is based on minimizing agency costs. Myers' Pecking Order Theory uses elements from both the trade-off theory and the agency theory. According to the Myers' Pecking Order Hypothesis the financing of projects is undertaken first by using internal resources, then debt and equity as a final resort. Holmes and Kent have developed a 'Restricted Pecking Order Theory' (Holmes and Kent, 1991). This theory can be applied to small firms by assuming that small firms usually are not able to issue shares and owner-managers want to be in control of their business. As a consequence, small businesses are unlikely to use (external) equity. Furthermore, this theory is applicable only in case entrepreneurs have a genuine choice between equity and debt capital in the sense that they have personal equity available and relevant access to credit. The existence of an optimal capital structure is no longer debated in the theory of finance. The remaining issue is essentially an empirical one, i.e. whether, or under which set of circumstances - including the size of the firm - the various determinants are of sufficient economic importance.

In reality, a wide variation in the patterns of finance across small firms is to be expected, due to differences in the life cycle position of firms, size and strategies towards independence and growth (Hughes and Storey, 1994). In fact, the seemingly irrational behavior of those running small businesses may increase this variation. D'Amboise and Muldowney even state that "*The goals of the small business person*

are vague, inadequately defined, pragmatic and short-ranged" (d'Amboise and Muldowney, 1988, p. 231).

In the literature there is little consensus about the differences in the composition of financial capital between female and male entrepreneurs. Some state that female and male entrepreneurs do not differ with respect to the amount of their own resources used (Rosa *et al*., 1994). Others conclude that female entrepreneurs make more use of their own resources and less of debt financing with the exception of money borrowed from family and friends (Carter and Rosa, 1998; Honig-Haftel and Martin, 1986; Neider, 1987; Hisrich and Brush, 1987; Olm et al. 1988; Johnson and Storey, 1993). Moreover, men may have better access to formal sources of debt financing, like banks and private financial institutions (OECD, 1998b) and informal financial networks (Olm *et al*., 1988, Riding and Swift, 1990). In the present study our focus will be on the proportion of bank loans because of the relative importance of bank loans within the total amount of debt finance used by small businesses.

It can be concluded from the literature that female and male entrepreneurs differ with respect to the way in which they finance their businesses. However, there is ambiguity about the determinants and the direction of these differences. To investigate the differences between female and male entrepreneurs and their causes the present study deals with the following question: *'What is the impact of gender on financial capital?'* We will discriminate between the *amount* of capital and its *composition*. The amount of financial capital refers to total investment in the start-up venture. With respect to the composition of capital a distinction is made between equity and debt. In this study we will concentrate on internal equity, which is equity provided by the entrepreneur, as we assume that starting entrepreneurs, who are the subject of this study, are hardly in a position to acquire external equity through stock market quotation. Moreover, we also focus on a particular type of debt, namely bank loans. As can be deducted from the literature bank loans are an important source of debt capital for starting entrepreneurs. One has to bear in mind that internal equity and bank loans together do not add up to the total amount of financial capital used to start a venture. Other types of finance include external equity (although this is not very likely) and debt capital provided for by suppliers, other business partners and family and friends (F-capital).

Moreover, the impact of gender on financial capital can be *direct* or *indirect*. The indirect effect refers to differences between male and female entrepreneurs with respect to the type of business and their type of management and experience. Below, this is referred to as *'the female profile'*. The direct effect cannot be attributed to these differences and can be called a *gender effect*, i.e. female and male entrepreneurs with the same characteristics differ with respect to the way in which they finance their businesses. Both effects are depicted in Figure 5.1. To our knowledge, this study represents the first discrimination between direct and indirect effects of gender on the amount and composition of financial capital.

5.2 Differences between Male and Female Entrepreneurs

5.2.1 Introduction

'No two entrepreneurs are the same'. Entrepreneurs differ with respect to the sector they work in, their background and experience, the size of their enterprises, etc. This applies to female as well as to male entrepreneurs. It is interesting to investigate in what way female and male entrepreneurs differ. For instance, they may differ because their societal opportunities are unevenly distributed or as a result of a different upbringing.[143] The present chapter focuses on differences between female and male entrepreneurs with respect to their experience and education, the time they spend on running their business, networking, sector, firm size and entrepreneurial characteristics. Differences between male and female entrepreneurs with respect to these factors will be used to construct the 'female profile'. Of course there will be other factors that can be used making up the female profile. However, this study deals only with those factors that are most likely to have impact on the amount and composition of financial capital. Moreover, the availability of these factors in the data set is also an important reason for the selection of factors. The present chapter deals with differences between male and female entrepreneurs with respect to these factors. In the next chapter differences with respect to these factors are captured in terms of a set of hypotheses.

5.2.2 Experience and Education

Male and female entrepreneurs differ with respect to experience and education (Brush, 1992). The *level* of education of female and male entrepreneurs is roughly identical, whereas the *type* of education differs (Van Uxem and Bais, 1996, Birley, Moss and Saunders, 1987). Male entrepreneurs are more likely to have completed a technical schooling, while the education of female entrepreneurs usually is more economical, administrative or commercial of nature. Moreover, female entrepreneurs usually are more specialized in personal services (Van Uxem and Bais, 1996).

The *length* and *type* of experience of women and men in the labor market vary considerably. Men are more likely to have been employed prior to the start-up of their business and tend to have more working experience (Van Uxem and Bais, 1996; Welsch and Young, 1982). Differences in type of experience are related to differences in type of education. Female entrepreneurs are more likely to be experienced in fields like teaching, sales, administration and personal services (Hisrich and Brush, 1983; Scott, 1986; Neider, 1987; Welsch and Young, 1982) as opposed to management,

[143] Adherents of 'liberal feminism' believe that women differ from men due to unevenly distributed opportunities in society caused by numerous forms of discrimination. Adherents of 'social feminism' believe that women and men differ as a result of a different upbringing (socialization). Boys and girls are being taught different values leading to different life styles and ideals. See Mills and Voerman, 1997 and Fischer et al., 1993.

sciences and technology (Watkins and Watkins, 1983; Stevenson, 1986). Men are also more likely to have earlier entrepreneurial experience (Fischer *et al*. 1993, Kalleberg and Leicht, 1991). Additionally, they have more industry experience and experience with human resource management, financial management and the application of modern technologies (Fischer *et al*. 1993, Van Uxem and Bais 1996).

5.2.3 Part-Time Entrepreneurship

Male entrepreneurs work more often on a full-time basis when compared to their female counterparts (OECD, 1998b). More than half of the enterprising women carry out other activities besides running their own business, like being employed or taking care of their family (Stigter, 1999). Of those female entrepreneurs who work part-time in their business, approximately half is part-time entrepreneur due to household activities, whereas only a small percentage of the male part-time entrepreneurs have similar obligations (Van Uxem en Bais, 1996). Male entrepreneurs work more often on a part-time basis in their own business as a result of having another enterprise or having other employment (Stigter, 1999). Female entrepreneurs have 'double assignments'; i.e. they are running an enterprise and a household at the same time. These 'double assignments' may limit the time female entrepreneurs spend on their businesses (Loscocco, 1991; Tigges and Green, 1992).

5.2.4 Networking

Only recently female entrepreneurs started acknowledging the importance of networking activities (Moore and Buttner, 1997). There is a general feeling that in the past women wanted to prove they could do it on their own. There are several ways in which networking activities can be measured (Aldrich, Rosen and Woodward, 1987; Birley, Cromie and Myers, 1991). Indicators proposed are (1) the tendency to network, (2) the size of the network (number of people), (3) the composition of the network and (4) the time spend on networking.

The tendency to network does not differ significantly between female and male entrepreneurs. Women understand the importance of using a network (Hansen and Allen, 1992). The size of the networks used by male is similar to that used by female entrepreneurs (Cromie and Birley, 1992). However, in a discussion on the differences in network compositions and size, Brush refers to Aldrich (1989) who states that women usually engage in smaller networks consisting primarily of women (Brush, 1992). Men spend more time developing and maintaining networks (Cromie and Birley, 1992). Household activities of women (‘double assignments’) and other social obligations may lead to more isolation than men usually experience (Moore and Buttner, 1997). This implies that women spend less time on networking. Moreover, the members of both formal and informal networks are not always open to accepting women.

5.2.5 Sector

Male and female entrepreneurs work in different sectors. Female entrepreneurs are overrepresented in the retail- and service sectors, in particular in personal services (OECD, 1998b). Male entrepreneurs are overrepresented in manufacturing, wholesale trade and financial services (Van Uxem and Bais, 1996). Within sectors, female entrepreneurs are often found in supporting jobs or occupations. The businesses of female entrepreneurs can be characterized as 'supporting services', such as secretarial, translation and processing activities (Van Uxem and Bais, 1996).

5.2.6 Size

By and large, female entrepreneurs have smaller businesses than men. The smallness of female entrepreneurial activity can be related to the sector of their business, e.g. sectors with low barriers to entry, high competition and low profit margins, and the relatively high proportion of part-timers among female entrepreneurs. Their smallness becomes manifest in several ways, like low returns, a small workforce (if any) and a small amount of start-up capital (Van Uxem en Bais, 1996). The main business objective of male entrepreneurs is growth so that they can reap the fruits of increasing returns. However, growth is merely a secondary objective for female entrepreneurs (Van Uxem en Bais, 1996). This can be related to the situation where their business is not the only means of earning a living. Most female entrepreneurs have an earning partner.

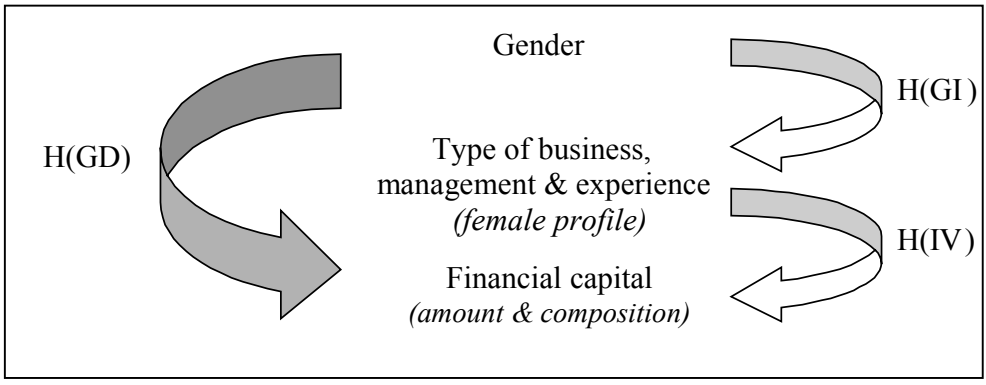
5.2.7 Entrepreneurial Characteristics

Men and women have different values. This is concluded in a study by Sexton and Bowman-Upton (1990) about the extent to which men and women possess entrepreneurial characteristics, like perseverance, autonomy, propensity to take risks and readiness to change. Although the differences with respect to entrepreneurial characteristics are rather small, it is reported that men put a higher value on perseverance and risk and a lower value on autonomy and change than women do. Moreover, women value their own entrepreneurial characteristics lower than men (Van Uxem and Bais, 1996). This is the case especially with regard to taking risk, industry knowledge and technological knowledge. The lack of confidence of female entrepreneurs in their own entrepreneurial capabilities may be attributed to a relatively negative self-perception. Social and cultural factors play an important role in maintaining this negative self-image of women, like the subordinate role of women in large parts of the world and internalized gender specific images and values (Hofstede, 1991).

5.3 Hypotheses

Hypotheses can be formulated relating differences between male and female entrepreneurs to the amount and composition of financial capital. The manner in which these hypotheses are formulated is displayed in Figure 5.1. Hypotheses of type H (IV) refer to the impact of the intermediary variables on financial capital in terms of differences between male and female entrepreneurs. Hypotheses of type H (GI) refer to the relation between gender and the intermediary variables. Hypotheses of type H (GI) and H (IV) together make up the indirect effect of gender on financial capital, while hypotheses of type H (GD) reflect the direct effect of gender on financial capital. Hypotheses have been formulated regarding the effect of gender on the total amount of financial capital, the proportion of equity, which in this study refers to internal equity, and the proportion of bank loans. One has to bear in mind that internal equity and bank loans do not necessarily add up to the total amount of financial capital. This indicates that equity and bank loans are not entirely complementary and there is another effect of gender on the residual category of financial capital, including for instance F-capital.

Figure 5.1: Direct and indirect impact of gender on business finance and hypotheses



The hypotheses formulated below are coded using abbreviations. These abbreviations are clarified in Table 5.1.

Table 5.1: Abbreviations used

Abbreviation	Description
IV	Intermediary variables
PT	Part-time entrepreneurship
S	Services
FM	Financial management experience
RA	Risk attitude
N	Networking
GI	Female profile
GI and IV	Indirect effect of gender
GD	Direct effect of gender
A	Amount of financial capital
E	Proportion of equity
B	Proportion of bank loans

5.3.1 Financial Management Experience and Financial Capital

Female entrepreneurs are more likely to have less experience with financial management than male entrepreneurs because women usually have less opportunity to accumulate management experience due to the vertical segregation of the labor market. Prospective entrepreneurs with little experience of financial management maybe assumed to be unaware of the way in which they can acquire financial capital and of whom they can contact for help and advice. Entrepreneurs with financial management experience are assumed to be able to use their earlier experience to convince credit managers of banks to invest in their venture. This might also be valid when attempting to convince business angels and venture capitalists. Moreover, tax shields can be an incentive to use bank loans for financing the business. Entrepreneurs with financial experience may be better informed about these tax incentives. Financial management experience may also involve knowledge about the importance of free cash flows for entrepreneurs. Constraints on financial resources may hinder a flexible response on market fluctuations. Interest payments on bank loans corrode free cash flows. In that case entrepreneurs will be inclined to use personal resources for financing their business. Finally, financial management might be associated with a sufficient amount of personal savings based upon success in earlier jobs and investments. The following hypotheses are formulated[144]:

[144] One has to bear in mind that in this study a distinction is made between internal equity (equity provided for by the entrepreneur) and bank loans. This leaves a residual category of capital, including mainly F-capital. Equity and bank loans are not entirely complementary. The implication of hypotheses H (IV=FM,

H (GI=FM): Female entrepreneurs have less experience with financial management than their male counterparts.

H (IV=FM, A): Experience with financial management leads to a higher amount of financial capital.

H (IV=FM, E): Experience with financial management leads to a higher proportion of equity in the total amount of financial capital.

H (IV=FM, B): Experience with financial management leads to a higher proportion of bank loans in the total amount of financial capital.

5.3.2 Part-Time Entrepreneurship and Financial Capital

Female entrepreneurs are more likely to work on a part-time basis than male entrepreneurs. Women often try to combine work- and household responsibilities. Part-time entrepreneurship usually goes together with a smaller business involving relatively few investments and requiring a small amount of financial capital. Part-timers are supposed to bring in a high proportion of equity, because they are able to, having resources out of their other activities, and they are willing to, having their risks spread among various activities. Additionally, banks may have a limited inclination to support part-timers. Part-time entrepreneurship can have a signaling effect. By working part-time, the entrepreneur gives a signal that the business is not important or successful enough to merit all the entrepreneur's resources. This means that outside parties, like banks, can be expected to be more cautious when deciding whether or not to invest in the venture. This leads to the following hypotheses:

H (GI=PT): Female entrepreneurs work on a part-time basis more often than their male counterparts.

H (IV=PT, A): Part-time entrepreneurship leads to a smaller amount of financial capital.

H (IV=PT, E): Part-time entrepreneurship leads to a higher proportion of equity in the total amount of financial capital.

H (IV=PT, B): Part-time entrepreneurship leads to a smaller proportion of bank loans in the total amount of financial capital.

5.3.3 Networking and Financial Capital

Having contact with other entrepreneurs can lead to the exchange of relevant information. Female entrepreneurs spend less time networking than their male counterparts, which may deprive them of important information concerning the acquisition of finance. Network activities are assumed to improve the entrepreneur's

E) and H(IV=FM, B) is that experience with financial management may lead to a lower proportion of F-capital. In case of the impact of financial management experience on the use of F-capital it can be said that financial experience is associated with a touch of professionalism, making the use of F-capital less likely.

view on his or her goals and future activities and hence his or her capital requirements. Network activities are assumed to lower barriers when acquiring bank loans. We have no a priori hypothesis about the influence of networking on the proportion of equity in the total amount of financial capital. The following hypotheses are formulated:

H (GI=N): Female entrepreneurs more often spend less time networking than their male counterparts.

H (IV=N, A): Networking leads to a higher amount of financial capital.

H (IV=N, E): No a priori hypothesis.

H (IV=N, B): Networking leads to a higher proportion of bank loans in the total amount of financial capital.

5.3.4 Sector and Financial Capital

Female entrepreneurs are more likely to work in the service sector. This sector is characterized by relatively small initial investments requiring a small amount of financial capital. The service sector is generally associated with low investments in tangible assets, like machines and buildings and high investments in intangibles, like human capital and customer relations. In case of bankruptcy, the former have a high value in second hand markets, the latter a low value, if any. Investment in the service sector is less attractive for banks. Therefore the service sector is associated with a low proportion of debt (bank loans). We have no a priori hypothesis about the influence of the service sector on the proportion of equity in the total amount of financial capital. The following hypotheses are formulated:

H (GI=S): Female entrepreneurs work in the service sector more often than their male counterparts.

H (IV=S, A): Entrepreneurial activities in the service sector require a smaller amount of financial capital.

H (IV=S, E): No a priori hypothesis.

H (IV=S, B): Entrepreneurial activities in the service sector lead to a smaller proportion of bank loans in the total amount of financial capital.

5.3.5 Size and Financial Capital

Enterprises of female entrepreneurs generally are smaller than those of male entrepreneurs. A smaller amount of financial start-up capital is assumed to make equity financing more likely compared to debt financing. An analysis of the financial structure of small businesses indicates that the bulk of their funds are personal savings of the owner-manager and retained profits from business operations (Kotey, 1999). This corresponds with the views of Weston and Brigham who state that small firms tend to start out using only owners' resources (Weston and Brigham, 1981). Several reasons can be brought forward for the reliance of owners of small businesses on

personal resources for the financing of their business. First, the availability of equity is not likely to vary considerably between entrepreneurs. Generally, as the scale of the business increases, the amount of personal resources will not suffice and the use of bank loans and other types of external finance will have to be taken into consideration. Thus, equity decreases with size, because banks require some sort of buffer capital and this buffer decreases proportionally as size increases. Second, autonomy is an important motive for starting up a business (Van Uxem and Bais, 1996). Entrepreneurs are reluctant to loose control of the business in an early stage by pursuing a bank loan. However, as the business starts to grow the need for debt capital will increase, eventually leading to the acquisition of external capital and a loss of control. A third reason is related to Myers' Pecking Order Theory. According to this theory the financing of projects is undertaken first by using internal resources, then debt and finally external equity (stock market). The Restricted Pecking Order Theory by Holmes and Kent can be applied to small businesses assuming that small businesses are rarely in a position to issue shares to acquire external capital. In case of start-ups there is no basis for a stock market quotation. It has also been noted that entrepreneurs starting a business set great value on being in control of their business, thereby partly minimizing their need of external financial capital (debt as well as equity). Moreover, internal resources, in the shape of retained earnings, play an important role in the Pecking Order Theory. However, these funds are by definition not available for starting firms. Accordingly, starting entrepreneurs will have to finance their business with other internal resources: personal resources, i.e. internal equity. Finally, there is a supply side reason for the capital structure of small firms. Banks are reluctant to lend to starting small businesses, because they do not possess audited financial statements, they do not have many business assets that can be easily evaluated or used as collateral and have little repayment history or records of profitability (Berger and Udell, 1998). Moreover, the fixed cost element of transactions puts small businesses at a disadvantage in raising external finance (Chittenden, Hall and Hutchinson, 1996). The impact of the leverage effect on small businesses is not clear and no evidence has been found in the literature. The following hypotheses are formulated:

H (GI=A): Female entrepreneurs generally have smaller businesses than their male counterparts.

H (IV=A, E): A small amount of financial capital leads to a higher proportion of equity in the total amount of financial capital.

H (IV=A, B): A small amount of financial capital leads to a smaller proportion of bank loans in the total amount of financial capital.

5.3.6 Risk Attitude and Financial Capital

Women are assumed to be more risk avers than men and risk aversion implies a reliance on equity instead of bank loans. This is confirmed by Kotey and Meredith who state that risk aversion of entrepreneurs leads to dependency on personal equity as a source of finance (Kotey and Meredith, 1997) and Carland who claims that a higher

risk taking propensity and a better understanding of the risks inherent in investments leads to the use of more debt finance (Carland et al., 1989). Debt financing increases the financial risk of the firm because interest payments on debt are to be paid when due, irrespective of the firms' profitability or liquidity levels. Moreover, debt financing involves the risks of fluctuating interest rates, redemption and liability. The following hypotheses can be derived:

H (GI=RA): Female entrepreneurs have a lower propensity to take risks than their male counterparts.

H (IV=RA, A): The propensity to take risks leads to a higher amount of financial capital.

H (IV=RA, E): The propensity to take risks leads to a smaller proportion of equity in the total amount of financial capital.

H (IV=RA, B): The propensity to take risks leads to a higher proportion of bank loans in the total amount of financial capital.

5.3.7 Direct Effect

The direct effect of gender on financial capital cannot be explained using intermediary variables. However it can be interpreted in the following way. Female entrepreneurs may have less confidence in their entrepreneurial capabilities than male entrepreneurs, leading to the start-up of smaller enterprises. Moreover, it is possible that female entrepreneurs have other ambitions than male entrepreneurs or set more value on 'quality' instead of 'quantity'. They serve a niche market or focus on customer satisfaction rather than strive after growth of their business through diversification. A possible supply side reason for the smaller firms of women is the conservative attitude of male businessmen and entrepreneurs or, more important, that of bankers.

Female entrepreneurs may have less personal financial resources than male entrepreneurs. For instance this is due to discontinuity of past labor relations, leading to a smaller proportion of equity within the total amount of financial capital. Finally, female entrepreneurs may experience difficulties acquiring bank loans for instance due to discrimination based on images of women not being adequately equipped for entrepreneurship. The remaining hypotheses are:

H (GD, A): Gender has a negative direct impact on the amount of financial capital.

H (GD, E): Gender has a negative direct impact on the proportion of equity within the total amount of financial capital.

H (GD, B): Gender has a negative direct impact on the proportion of bank loans within the total amount of financial capital.

5.4 Empirical Analyses

5.4.1 Data Source

To investigate the impact of gender on financial capital and to test the hypotheses dealt with in the previous chapter, use is made of a panel of 2000 Dutch firms that have started their business in the first quarter of 1994. Approximately 1500 are male and 500 are female. This is a reasonable representation of the average distribution of female and male entrepreneurs in most OECD-countries (OECD, 1998b). The panel is set up and implemented by EIM Business and Policy Research. The data consist of questions concerning the process of starting-up, the period prior to the start-up phase and the shape of the prospective business. The focus is on the background of the entrepreneur (education and experience), the motives for starting up a firm, financial data and investments, management bottlenecks and expectations. The panel is set up in the year 1994. For the present analyses the results are used of the first questionnaires sent out in 1994. Follow-up questionnaires were distributed to map developments in the years after start-up. The national character of the data set limits the extent to which the conclusions can be generalized since the financial support of start-ups, the operating procedures of financial institutions and other institutional barriers to entry may differ between countries.

5.4.2 Description of Variables

From the data source described in the previous paragraph, the following variables are selected for the empirical analyses. The dependent variables are the amount of start-up capital, the proportion of equity and the proportion of bank loans in the total amount of start-up capital. The amount of financial capital is both a dependent variable and an explanatory variable when explaining the composition of financial capital. The description and measurement of the variables is presented in Table 5.2.

Table 5.2: Description of variables

Variable name	Description	Measurement	Average	Std.dev
Start-up capital (A)	Amount of start-up capital	Observations are given one out of 7 different amounts in thousands of Dutch guilders*	48.51	93.36
Proportion equity (E)	Proportion of equity in total amount of start-up capital	Observations are ordered according to classes 1 to 12**	8.40	4.38
Proportion bank loans (B)	Proportion of bank loans in total amount of start-up capital	Observations are ordered according to classes 1 to 12**	3.62	3.68
Services (S)	Whether the entrepreneur works in the service sector or in non-services	Dummy variable: services = 1 and elsewhere = 0	Percentage (1) = 25	
Risk attitude (RA)	The extent to which an entrepreneur is willing to take risks	Observations are ordered according to classes 1 (very weak) to 5 (very strong)	3.81	0.79
Part-time (PT)***	Whether the entrepreneur is engaged in other activities besides the own business	Dummy variable: part-time = 1 and full-time = 0	Percentage (1) = 50	
Networking (N)	The extent to which an entrepreneur has contact with other entrepreneurs	Observations are ordered as follows: 1 (never), 2 (sometimes) and 3 (regularly)	1.57	0.71
Financial management (FM)	The extent to which an entrepreneur had previous experience with financial management	Observations are ordered according to classes 1 (no experience) to 4 (much experience)	2.06	0.98
Gender	Whether the entrepreneur is male or female	Dummy variable: female = 1 and male = 0	Percentage (1) = 27	

* The following amounts (in 1000 Dutch guilders) are selected: (1) 5, (2) 17.5, (3) 37.5, (4) 75, (5) 175, (6) 375 and (7) 500. ** Classes 1 to 12 refer to the following percentages: (1) 0, (2) 1-10, (3) 11-20 … (11) 91<100 and (12) 100%. *** Part-time entrepreneurship is defined as performing other activities besides running a business. This is in contradiction with other studies where someone is considered a part-time entrepreneur when working less than 40 hours per week. This is a time-based definition. As a rule, entrepreneurs who engage in other activities besides entrepreneurship work less than 40 hours a week. However, there may be exceptions. The correlation between the explanatory variables is presented in Table 5.3, as a test of multi-collinear distortions. Generally, the correlation coefficients are low. The highest absolute value of the Pearson correlation coefficients of Table 5.3 is that of the start-up capital and part-time entrepreneurship, being 0.20. One may conclude that, although most values are significantly differing from zero, this is not relevant considering their small values. Furthermore, experiments omitting variables in a pseudo stepwise fashion did not reveal any suspicion of multi-collinear distortions.

Table 5.3: Pearson correlation between explanatory variables

	1	2	3	4	5	6	7
1. start-up capital	1.00	-0.12**	0.08**	-0.20**	0.09**	0.16**	-0.13**
2. services	-0.12**	1.00	-0.03	0.07**	-0.07**	-0.11**	0.14**
3. risk attitude	0.08**	-0.03	1.00	-0.06*	0.06*	0.15**	-0.09**
4. part-time	-0.20**	0.07**	-0.06*	1.00	0.01	-0.03	0.08**
5. networking	0.09**	-0.07**	0.06*	0.01	1.00	0.13**	-0.10**
6. financial management	-0.16**	-0.11**	0.15**	-0.03	0.13**	1.00	-0.15**
7. gender	-0.13**	0.14**	-0.09**	0.08**	-0.10**	-0.15**	1.00

** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).

5.5 Analyses

The hypotheses formulated in the previous section are tested using multiple regression analyses to determine the direct and indirect impact of gender on the amount and composition of start-up capital. Single bilateral correlation is used to test whether there is a connection between gender and the other explanatory variables of start-up capital.

In Table 5.4 the correlation between gender and the intermediary variables is presented. All hypotheses of type H (GI) are supported at a 5 percent level of significance. The following profile can be constructed of the female entrepreneur in comparison with the male entrepreneur: female entrepreneurs are more likely to work part-time, more likely to work in the service sector, they are more averse to risk, have less experience with financial management, spend less time on networking and start smaller businesses.

Table 5.4: Correlation between gender and the intermediary variables

Intermediary variables	Direction of correlation	Hypothesis
Services	positive	H (GI=S)
Risk attitude	negative	H (GI=RA)
Part-time	positive	H (GI=PT)
Networking	negative	H (GI=N)
Financial management	negative	H (GI=FM)
Start-up capital	negative	H (GI=A)

Regression analysis is used to determine the direct and indirect impact of gender on the total amount of start-up capital and the proportion of equity and bank loans in the total amount of start-up capital. The results are presented in Tables 5.5, 5.6 and 5.7,

respectively. A distinction is made between taking into account all explanatory variables, the intermediary variables (the female profile) or just the gender dummy variable. The *B*-values refer to the coefficients of the explanatory variables. The number of observations is smaller in case the intermediary variables are taken into account because they are not always available.

Table 5.5: Regression results explaining the total amount of start-up capital

Hypothesis	All variables		Intermediary variables		Gender		
	B-value	*t*-value	*B*-value	*t*-value	*B*-value	*t*-value	
Services	-16.77	-3.32	-18.76	-3.73	.	.	(IV=S,A)
Risk attitude	4.67	1.67	5.34	1.91	.	.	(IV=RA,A)
Part-time	-36.54	-8.41	-37.56	-8.64	.	.	(IV=PT,A)
Networking	9.47	3.09	10.11	3.29	.	.	(IV=N,A)
Financial management	11.84	5.20	12.71	5.60	.	.	(IV=FM,A)
Gender	-16.84	-3.34	.	.	-27.11	-5.69	(GD,A)
R^2	0.09		0.085		0.017		
N	1757		1757		1913		

From the intermediary variables column in Table 5.5 we conclude that the amount of start-up capital is lower if firms are operating in the service sector, if entrepreneurs are risk averse, if they operate on a part-time basis, if they do not indulge in networking and if they have no earlier experience with financial management. All these effects are significant at the 5 percent level. Hence, this implies that all hypotheses are supported. From the gender column we conclude that women start their business with a smaller amount of start-up capital than men. From the all variables column we conclude that in a joint analysis the intermediary variables effect and the gender effect remain present. This implies that a negative effect of gender on the amount of start-up capital can be separated in a direct and indirect effect. The direct effect can be found in the all variables column, whereas the indirect effect can be inferred from the results of the correlation between gender and the intermediary variables (Table 5.4) and the effect of the intermediary variables on the amount of start-up capital. The indirect effect can also be associated with the difference between the coefficients of the total and the direct effect of gender on the amount of start-up capital. The indirect effect can be explained using the intermediary variables, i.e. the female profile. The direct effect cannot be explained by the female profile. The following interpretation can be given. Female entrepreneurs may have a lack of confidence in their entrepreneurial capabilities when compared to male entrepreneurs. Moreover, women may have less equity than men or they fear that they will meet with discrimination when they apply for a bank loan. Below, the composition of the start-up capital will be discussed.

The regression results of the analysis on the proportion of equity are presented in Table 5.6. From the intermediary variables column we conclude that the proportion of equity in the total amount of start-up capital is higher if entrepreneurs are risk averse, if they work on a part-time basis, if they have networking contacts with other entrepreneurs and if they have a smaller amount of start-up capital. The only effect not significant at the 5 percent level is that of networking for which no a priori hypothesis was formulated. No a priori hypothesis has been formulated with respect to the effect of services on the proportion of equity and no significant effect has been found in the analysis. From the gender column we conclude that gender has no significant effect on the proportion of equity. From the all variables column it can be concluded that in a joint analysis the intermediary effects remain present and a gender effect appears. The total effect of gender on the proportion of equity, which is not significant, can be separated in a direct and indirect effect. The direct effect can be found in the all variables column, whereas the indirect effect can be inferred from the results of the correlation between gender and the intermediary variables (Table 5.4) and the effect of the intermediary variables on the proportion of equity. The indirect effect can also be associated with the difference between the coefficients of the total and the direct effect of gender on the proportion of equity. Neglecting the intermediary variables one is inclined to conclude that gender has no influence on the proportion of equity. However, when the female profile is taken into account, it can be concluded that female entrepreneurs are less able to acquire equity than their male counterparts. The gender effect that female entrepreneurs have a smaller proportion of equity may be caused by relatively little personal resources as a means of financing the business.

Table 5.6: Regression results explaining the proportion of equity in the total amount of start-up capital

Hypothesis	All variables		Intermediary variables		Gender		
	B-value	*t*-value	*B*-value	*t*-value	*B*-value	*t*-value	
Services	-0.11	-0.45	-0.17	-0.69	.	.	(IV=S,E)
Risk attitude	-0.57	-4.27	-0.55	-4.12	.	.	(IV=RA,E)
Part-time	1.36	6.47	1.47	6.37	.	.	(IV=PT,E)
Networking	0.01	0.69	0.12	0.80	.	.	(IV=N,E)
Financial management	0.37	3.40	0.40	3.67	.	.	(IV=FM,E)
Start-up capital	-0.01	-9.69	-0.01	-9.52	.	.	(IV=A,E)
Gender	-0.57	-2.36	.	.	-0.05	-0.23	(GD,E)
R^2	0.108		0.105		0.000		
N	1627		1627		1760		

The regression results of the analysis on the proportion of bank loans are presented in Table 5.7. From the intermediary variables column we conclude that the proportion of bank loans in the total amount of start-up capital is lower if entrepreneurs are risk

averse, if they work on a part-time basis, if they do not engage in networking activities, if they have experience with financial management and if they have a small amount of start-up capital. Apart from the effect of financial management and networking all effects are significant at the 5 percent level: hypotheses H (IV=FM, B) and H (IV=N, B) are not supported. Moreover, hypothesis H (IV=S, B) has not been supported in the analysis: no significant effect of the service sector on the proportion of bank loans has been found. As with the proportion of equity, on average, gender has no impact on the proportion of bank loans. This can be read from the gender column. From the all variables column we conclude that in a joint analysis the intermediary variables effect remains present and a small gender effect, significant at the 10 percent level, appears. This implies that the total effect of gender, which is insignificant, can be divided in a direct and indirect effect. The direct effect can be found in the all variables column, whereas the indirect effect can be inferred from the results of the correlation between gender and the intermediary variables (Table 5.4) and the effect of the intermediary variables on the proportion of bank loans. The indirect effect can also be associated with the difference between the coefficients of the total and the direct effect of gender on the proportion of bank loans. Neglecting the intermediary variables one is inclined to conclude that gender has no influence on the proportion of bank loans. However, when the female profile is taken into account, it can be concluded that female entrepreneurs have a higher proportion of bank loans in the total amount of start-up capital. This can be interpreted in the following way. Female entrepreneurs may be more successful in convincing credit managers of banks of their ideas and capabilities than male entrepreneurs. Here one has to bear in mind that the data do not allow for women entrepreneurs who did not succeed in acquiring bank loans or for the 'price' of bank loans to be included in the analysis.

Table 5.7: Regression results explaining the proportion of bank loans in the total amount of start-up capital

Hypothesis	All variables		Intermediary variables		Gender		
	B-value	*t*-value	*B*-value	*t*-value	*B*-value	*t*-value	
Services	-0.27	-1.14	-0.24	-0.10	.	.	(IV=S,B)
Risk attitude	0.70	5.29	0.67	5.12	.	.	(IV=RA,B)
Part-time	-1.09	-5.20	-1.07	-5.14	.	.	(IV=PT,B)
Networking	0.02	0.11	0.01	0.07	.	.	(IV=N,B)
Financial management	-0.15	-1.36	-0.16	-1.51	.	.	(IV=FM,B)
Start-up capital	0.01	7.39	0.01	7.27	.	.	(IV=A,B)
Gender	0.43	1.79	.	.	-0.20	-0.85	(GD,B)
R^2	0.121		0.12		0.001		
N	1169		1169		1269		

The distinction between a direct and indirect effect appears to be vital for understanding the impact of gender on the composition of the start-up capital. In the case of the total amount of start-up capital, leaving out the separation between direct and indirect does not lead to incorrect conclusions about the impact of gender. However, it does cover up the reasons why female entrepreneurs use less start-up capital than male entrepreneurs.

5.6 Summary and Conclusions

The focus of this study is on the differences between female and male entrepreneurs with respect to the amount and composition of financial capital. Using a panel of 2000 Dutch start-ups (1994) we find that female entrepreneurs have a smaller amount of start-up capital than their male counterparts, but that they do not significantly differ with respect to the composition of financial capital. On average the proportion of equity and the proportion of bank loans in the businesses of female and male entrepreneurs is the same. This does however not imply that gender has no impact on the composition of financial capital. When investigating the impact of gender on the size and composition of the start-up capital a distinction is made between an indirect and direct effect. The indirect effect is represented by the way women differ from men in terms of type of business and management and experience. The profile of female entrepreneurs differs from that of male entrepreneurs: female entrepreneurs are more likely to work part-time, more likely to work in the service sector, they are more averse to risk, have less financial management experience and spend less time networking. The direct effect cannot be attributed to these differences and is called a gender effect. When corrected for the indirect effect, i.e. the female profile, the direct effect tells us that female entrepreneurs have a smaller amount of start-up capital, a smaller proportion of equity and a higher proportion of bank loans. This direct effect can be interpreted as follows. The smaller amount of financial capital of female entrepreneurs may be attributed to a lack of confidence in their own entrepreneurial capabilities, which discourages female entrepreneurs to start with a large amount of financial capital. Moreover, female entrepreneurs may have different ambitions and objectives than male entrepreneurs. For instance, female entrepreneurs are more likely to attach value to 'quality' instead of 'quantity' aspects of life. Female entrepreneurs may have more problems acquiring financial capital, i.e. equity and debt capital. The smaller proportion of equity may be attributed to female entrepreneurs having less personal resources they can use to finance their business with. For instance this may be due to discontinuity of past labor relations. Contrary to what is generally assumed, our investigation suggests that women are able to acquire a larger proportion of bank loans. Here one has to bear in mind that the data do not allow for women entrepreneurs who did not succeed in acquiring a bank loan or for the 'price' of bank loans to be included in the analysis.

It can be concluded that when separating the total impact in a direct and indirect component gender has impact on the amount as well as the composition of financial capital. Consequently, merely focusing on the total impact of gender on financial capital can lead to misleading conclusions. The impact of gender on the amount of capital is likely to be overestimated because part of the negative total effect can be attributed to the female profile. When controlled for the female profile a smaller negative (direct) effect remains. In case of the proportion of equity and bank loans, when not controlled for the female profile there is no significant effect of gender on the composition of capital. However, when properly controlled for the effect of gender on equity is negative, whereas the effect on bank loans is positive.

Clearly, the present study is based on Dutch data and cannot be easily generalized to other countries. To improve knowledge of female entrepreneurship future studies should focus on international data that enable a comparison of gender issues in different countries. Moreover, the empirical analysis can be expanded to include more (and other) explanatory variables of start-up capital. Factors that could provide additional information are the age and marital status of the entrepreneur, the number of previous businesses owned (entrepreneurial experience), motives for starting up a business and self-confidence. The latter variable may be difficult to measure and can probably only be captured through self-rating. Additionally, the study should focus not only on businesses that are in the first phase of the (business) life cycle. Next to start-up ventures established businesses should be taken into account because these businesses have a track record that is important for the acquisition of debt capital from financial institutions. Recent spectacular changes in the European stock exchange landscape (the advent of specialized stock exchanges for smaller and high-risk ventures and the merger activities) are not thought to affect the reach of our conclusions. In the present study we deal with very small firms with an average start-up capital of less than 50.000 Dutch guilders. The entrepreneurial climate however may change in Europe due to the extension of venture capital type markets. This long-term effect may also influence the ability of very small start-ups to attract capital.

Research on the impact of gender should not be confined to financial capital. The impact of gender on organizational issues may even be more illuminating than that on financial capital. Female entrepreneurs are often considered to have a different organizational approach than male entrepreneurs. Moreover, organization can be a variable that intermediates between gender and financial capital. In this sense there will be an indirect effect of gender through organization on financial capital.

Differences between male and female entrepreneurs can also express themselves through other aspects of entrepreneurship like the use and composition of labor, the use of knowledge related factors (input factors) and growth rates and survival rates of the firm (output factors). When taking into account output factors, it can be expected that female entrepreneurs use their smaller amount of capital more effectively, i.e. they use less capital for given output levels. Thus, female entrepreneurs have a smaller

amount of financial capital when compared to male entrepreneurs and this may imply that they make more efficient use of their relatively scarce resources.

Extending the analysis of the impact of gender to other input factors than financial capital, and taking into account output factors as well will result in a better understanding of differences in the way male and female entrepreneurs operate. Moreover, expansion of the number of intermediary variables in the analysis will create better insight in the gender-based differences and the specific nature of female entrepreneurship.

Chapter 6: Gender Differences in Strategy and HRM: The Case of the Dutch Real Estate Brokerage

6.1 Introduction

The substantial increase in the number of women business owners and their contribution to economic growth and job creation in the last decade in most developed countries is accompanied by an increasing number of studies on the phenomenon of female entrepreneurship. It is argued that female and male entrepreneurs differ with respect to personal characteristics, such as motivation and experience, and the distinctive features of their business, such as firm size and sector. Studies in the field of female entrepreneurship have mainly focused upon personal(ity) characteristics and gender-specific barriers to entrepreneurship[145]. Although several studies have investigated the characteristics of female-owned businesses, such as size, age and sector, relatively few studies have explored the strategy and structure of these businesses (Brush, 1992). The goal of the present study is to explore whether there are differences with respect to strategic and human resource management in male and female-owned firms. This is done within the context of the real estate brokerage in the Netherlands.

Several studies demonstrate the importance of human resource management for performance, whether this concerns the individual performance of employees (Campbell et al., 1970; Asher, 1972) or performance at the organizational level (Pfeffer, 1998; Guest, 1997; Ichniowski et al., 1997; Huselid et al., 1997; Huselid, 1995; Boselie et al., 2001; Koch and McGrath, 1996)[146]. Hall (1993) argues that intangible resources or the capabilities of the firm – including employee know-how and culture – have a large contribution to creating sustainable competitive advantage[147].

Especially in the service sector human resources and knowledge management play an important role. Heskett et al. (1997, p. 98) argue that "*Service encounters are at the heart of the profit chain for many services. And they distinguish most services from*

[145] Most studies on female entrepreneurship have focused on the problems and weaknesses of female entrepreneurs. The present study adopts the viewpoint that female and male entrepreneurs have their own strengths and weaknesses and that they can learn from each other.
[146] See Paauwe (2004) for a detailed overview and discussion of the research done in the area of HRM and performance.
[147] This is in line with Prahalad and Hamel (1990) emphasizing the importance of the core competence of the firm for performance.

manufacturing processes". Employee satisfaction and loyalty can positively influence profits and growth by way of customer loyalty and satisfaction. This is also acknowledged by Maister (1997) arguing that motivating and educating employees is important for productivity and quality and, accordingly, for market place success[148]. The present study focuses on gender differences regarding strategy and human resource management in the context of a particular type of business services: real estate brokerage.

Gender issues in entrepreneurship can be studied in three different ways. First, gender can be included as a control variable in quantitative studies measuring the influence of gender within a small range of dimensions or even a single one, such as finance or performance. Within these type of studies case findings usually are not extensively elaborated upon. Second, gender issues can be investigated qualitatively where gender is the basis for a theoretical discussion exploring conceptual relationships. The present chapter is situated in-between both types of study, discussing the influence of gender on a broad range of dimensions within a narrow and well-defined environment (i.e., real estate agents in the Netherlands). Although we do not control for other influences in the analysis, we present information on and discuss other factors that could play a role in the study[149]. The present study is exploratory in nature and aims at investigating possible gender differences in entrepreneurship, assuming these differences are worth studying[150]. Instead of formulating a small number of propositions tested using an extensive data set, a broad range of propositions is explored using data material from in-depth interviews, including opinions and perceptions of the respondents. A brief overview of the research themes investigated in the light of gender differences and the corresponding propositions explored in the present study is presented in Table 6.1.

The structure of the present chapter is as follows. Section 6.2 focuses on the number and characteristics of women in the Dutch real estate brokerage. Background information is provided on the population and selected sample of real estate agents as the basis for the empirical discussion in the present study. In Section 6.3 the research

[148] Instead of focusing upon ways to market and sell their services, according to Maister (1997) service firms should focus on developing the knowledge and skill basis of staff workers, who try to induce workers to buy.

[149] Whereas most studies include female-owned businesses of different sectors and even of different countries, this study only deals with businesses in the Dutch real estate brokerage preventing difficulties in the interpretation of the results.

[150] We will not go into this discussion here as this is not within the scope of the present study. However, we acknowledge that there is no consensus in the literature regarding the importance of studying gender differences. On the one hand there is the viewpoint that it is more important to study the effectiveness of rather than gender differences in style. On the other hand there is a stream of literature considering the study of gender differences important because of the learning effect. In this view capabilities and characteristics of female and male entrepreneurs are complements rather than substitutes. We argue that diversity in entrepreneurship resulting from the increase in the number of female entrepreneurs is important as this will lead to an increase in competition and a larger and more diverse supply of goods and services to the consumer (see Verheul and Thurik, 2001).

methodology is discussed. Section 6.4 is divided into three parts: background of the entrepreneur (motivation and experience), strategy and strategic management (goals, strategy and support) and human resource management (recruitment and selection, training and development, compensation and leadership). Each of these (sub)-sections contains both a theoretical and an empirical discussion. Whereas background characteristics of the Dutch real estate agents are dealt with in a descriptive analysis, for the topics of strategic and human resource management propositions are formulated which are investigated using the sample data[151]. See Table 6.1. Section 6.5 concludes giving a summary of the results and recommendations for further research.

Table 6.1: Research themes and corresponding propositions

Research themes	Propositions
Background of the entrepreneur motivation experience	 Descriptive background information; no propositions are formulated
Strategy and strategic management goals / strategy support: networks and mentors	 1 and 2 3 and 4
Human resource management recruitment and selection training and development compensation leadership	 5 through 8 9 10 and 11 12 through 15

6.2 Women in Dutch Real Estate

The present study focuses on gender differences in the Dutch real estate brokerage. As opposed to the United States the real estate brokerage in the Netherlands is dominated by men[152]. Less than ten percent of the Dutch real estate businesses is female-owned (Risseeuw et al., 2001). Also, the share of female entrepreneurs in the real estate brokerage lags behind that of female entrepreneurs in the Netherlands, which amounts up to approximately 30 percent (Ministry of Economic Affairs, 2000). However, both the number and share of female real estate agents is increasing. See Table 6.2, presenting data of the NVM (Dutch Real Estate Association) representing 1,700 of the total of 5,800 real estate businesses in the Netherlands and nearly 60 percent of all housing transactions and 65 percent of total employment in the real estate brokerage in the Netherlands (CBS, 2000; Risseeuw and Van Goor-Balk, 2000).

[151] The propositions are tested using chi-square statistics where $p <= 0.10$ implies support and $p > 0.10$ implies rejection.
[152] Reskin (1984) describes the feminization of real estate sales in the United States.

Table 6.2: Number and percentage of female NVM-real estate agents in the period 1998-2001

Year	Number of real estate agents	Number of female real estate agents	Percentage of female real estate agents
1998	2,750	325	11.8
1999	2,800	340	12.1
2000	3,300	435	13.2
2001	3,600	520	14.4

Note: this table includes both wage-employed and self-employed female real estate agents.

Table 6.3 presents background information of the real estate agents in the population (*N*=1484)[153].

Table 6.3: Population data

	total population	female-owned firms	male-owned firms	test on gender differences
number of firms[a]	*N*=1484 (100%)	7.3%	84.2%	
average firm size (ftes)	5.9	4.9	5.2	*p*=0.576
average firm age	23.64	13.94	23.40	*p*=0.000
firm age by class				*p*=0.000
1-3 years	14%	15%	10%	
4-7 years	16%	30%	16%	
> 8 years	70%	55%	74%	
share of residential brokerage in total revenues	65%	78%	65%	*p*=0.000

[a] The percentages of female- and male-owned firms do not add up to 100 percent as there are also 'mixed' businesses with both male and female real estate agents.

Approximately 7 percent of the entrepreneurs in the population of real estate brokers is female (see Table 6.3). The size of female- and male-owned firms in the Dutch real estate brokerage is fairly similar[154]. Since women only recently started to enter the real estate business in the Netherlands female-owned businesses in the population are younger. Approximately 45 percent of the female-owned real estate businesses are in existence for less than seven years, as compared to 25 percent of the male-owned

[153] This population is derived from the NVM population of real estate agents and includes all businesses that provided information for an annual report on real estate brokerage This annual report is commissioned by the Dutch Real Estate Association NVM.

[154] The average firm size of the entire population is higher than that of women- or men-owned businesses, because the population also includes businesses operated by both men and women. These 'mixed' firms tend to be larger.

businesses. In addition, female real estate agents have a larger share of residential brokerage in their revenues as compared to male real estate agents. Compared to the business-to-business market, residential brokerage (or business-to-consumer market) is characterized by relatively small-scale transactions and is usually less lucrative.

6.3 Methodology and Sample Characteristics

To create insight into the impact of gender on strategy and HRM within the context of the Dutch real estate brokerage, in-depth interviews were conducted with 28 Dutch real estate agents (of whom 15 were male and 13 female) in August and September of the year 2000. All respondents are members of the Dutch Real Estate Association (NVM). For this exploratory study sample selection was based on the technique of 'cross-referencing'. This selection procedure was used to ensure that respondents were motivated to participate in the research project and devoted time and effort to answering the questions. On the part of (potential) male respondents a lack of motivation was expected. Because real estate brokerage in the Netherlands traditionally is dominated by men, and women are only slowly starting to enter the business, men may still consider female real estate agents as an 'exception-to-the-rule'. On the part of (potential) female respondents gender differences could be considered a 'non-issue' as it is likely that women do not want to be treated as a separate group and want to be valued for their capabilities instead of being assessed purely on the basis of their gender.

Selecting respondents on the basis of cross-referencing entails the danger of a biased sample because only respondents are selected who value the topic of gender and may therefore be expected to emphasize differences rather than similarities. Thus, although the cross-referencing technique has the advantage of selecting the most interesting businesses, at the same time these businesses may deviate from the population as a whole.

Table 6.4 presents information for the selected sample (N=28). The average firm size in the sample is larger than the average firm size in the population. This is largely due to selection bias using the technique of cross-referencing. Both in the population and in the selected sample the average size of the business of female real estate agents is smaller than the average size of the business of male agents, although this difference is more pronounced in the sample. The difference in average size of male- and female-owned businesses can be attributed to differences regarding the way in which control was obtained over the business. Whereas most of the female real estate agents founded the firm they currently own, male agents were more likely to buy or inherit the business. Newly founded firms are almost by definition smaller than existing firms. However, comparing the average size of newly founded female- and male-owned firms, female-founded businesses are smaller. Considering the different routes to business ownership, it comes as no surprise that the female-owned real estate

businesses in the sample are younger than the male-owned businesses. All of the male-owned businesses have existed for eight years or more. Of the 13 female-owned businesses four existed for less than seven years, of which three less than three years. However, controlled for gender differences in routes to entrepreneurship in the sample, female real estate agents tend to be longer in business than male agents[155]. The differences in firm size and age of male- and female-owned businesses as well as the different routes to ownership in the sample may complicate the interpretation of gender effects in the study. Not taking into account these 'intervening' factors may lead to overestimation of possible gender effects. Within the scope of this study we only can allude to the existence of possible 'intervening' factors, since we are not able to test them statistically with a sample of 28 respondents.

Table 6.4: Sample characteristics

	total sample	women	men	test on gender differences
number of firms	28	13	15	
average firm size (ftes)	10.11	8.01	11.96	p=0.121
average firm age	25.14	13.46	35.27	p=0.002
firm age by class				p=0.068
1-3 years	3	3	0	
4-7 years	1	1	0	
8 years and over	24	9	15	
ownership status				p=0.002
bought/inherited	13	2	11	
founded	15	11	4	
average 'entrepreneurial age' [a]	9.00	10.15	8.00	p=0.452
average age at business start-up/take-over	35	37	34	p=0.222
average age entering labor market	22	21	22	p=0.675
labor market experience (years)	13	16	12	p=0.080
experience in real estate (years)[b]	7	10	6	p=0.032

Note: because of the fairly crude measurement of the values in this table findings should be interpreted with caution.

[a] Entrepreneurial age is defined as the number of years since the entrepreneur founded or otherwise acquired (bought or inherited) the current firm.

[b] This refers to average number of years experience in real estate as an employee.

[155] 'Entrepreneurial age' is defined as the number of years since the entrepreneur founded or acquired the current firm. See Table 6.4.

Due to the selection technique the selected sample differs – with respect to age and size of the business – from the population of Dutch real estate agents. Although the sample is not representative for the population of Dutch real estate agents as a whole, it serves as a valid base for gender studies (provided that possible intervening factors are taken into account). This is important since the focus of the present study is to investigate gender differences rather than to create insight into particular aspects of the Dutch real estate brokerage.

To test for gender differences 15 propositions are formulated (see Table 6.1 for a brief overview of the themes). The propositions are tested using chi-square statistics. A proposition is supported if $p<=0.10$[156]. We will not burden the text with these testing methods, but merely report whether a proposition is supported or not.

6.4 Theory and Findings

6.4.1 Background Characteristics

The background of the entrepreneur, including the motivation to start a business and labor market experience, can have an important impact on the shaping of organizations. The motivation to engage in entrepreneurial activity involves personal goals pursued by starting a business. Within small businesses the personal goals of the owner-manager usually coincide with business goals, as there are no or relatively few stakeholders interfering with these goals. Hence, the strategy of the owner-manager of a small business is likely to depend upon the personal motivation to start a business. In addition, knowledge of the market and of entrepreneurial elements, acquired through education and experience, is likely to have consequences for managing the business. In the present study it is argued that insight into the background characteristics of entrepreneurs contributes to a better understanding of the way in which businesses of women and men are organized.

Motivation

Personal and business goals tend to converge within small businesses. There appears to be a high degree of correspondence between the motivation to engage in entrepreneurial activity of the owner and the strategy pursued (Carson et al., 1995; Goffee and Scase, 1995). Van Uxem and Bais (1996) find that the main reasons for starting a business in the Netherlands are the wish to be independent and the challenge of undertaking something new. This was true for both men and women. Despite this overlap in motivation there are also differences between women and men, particularly since the bulk of the higher positions in business and public professional life are

[156] Propositions in Table 6.5 and further are coded as follows: + p<0.10, * p<0.05, ** p<0.01 and *** p<0.001.

occupied by men. Women often experience barriers trying to attain higher (managerial) positions within an organization. This relatively 'invisible' opposition is usually referred to as the 'glass ceiling effect'. Although it has been suggested that the glass ceiling is 'shattering' and women 'break it down', this does not seem to be the case for women in business (The Economist, 1996, p. 13; Maume, 1999). In this respect, women may be likely to start a business because they are dissatisfied with their job and the lack of opportunities to make a career. Moore and Buttner (1997) argue that women move beyond the glass ceiling within large businesses through starting their own business.

Although gender roles are losing their importance with the advancement of the process of gender mainstreaming[157], in practice the bulk of the household activities in the Netherlands is still performed by women (Breedveld, 2000). Self-employment and the accompanying flexibility in working hours offer women the opportunity to combine household activities with paid employment. This flexibility may be promoted even further by operating a business from the home (Van Uxem and Bais, 1996). The possibility of combining work and household responsibilities is referred to as an important reason for women to engage in self-employment (Buttner and Moore, 1997; Brush, 1990; Chaganti, 1986). Although the flexibility of working hours is likely to motivate women to start their own business it should be born in mind that self-employment is more time-consuming than wage-employment. Self-employment may therefore lead to conflicts between the different responsibilities as women have less time for household activities.

Several studies argue that women tend to pursue intrinsic goals[158] rather than financial gain (Cuba, Decenzo and Anish, 1983; Brush, 1992; Rosa et al., 1994). Buttner and Moore (1997) argue that self-fulfillment is an important reason for women to become self-employed. Women are also assumed to attach more value to the social contribution of their business, for instance through emphasizing customer satisfaction (Chaganti and Parasuraman, 1996). As compared to men, women are more likely to pursue a combination of goals. In this respect Brush (1992) argues that women are better at integrating different goals in their business strategy. Women consider (interpersonal) relationships important and tend to reconcile different interest groups, such as family, work and society, in their decision making. Women tend to view their business as part of a cooperative network of relationships, where business, societal and personal dimensions can overlap (Brush, 1992).

[157] The process by which women gradually start participating in 'parts' of society previously occupied by men has been referred to as gender mainstreaming (Verstand-Bogaert, 1999).

[158] Intrinsic goals are intangible and psychological in nature, such as the wish to be independent, challenging work, self-fulfillment and 'family security'. The latter can refer to securing the future of family members by succession of the business (Kuratko et al., 1997) or the possibility to combine household and work responsibilities (Olson and Currie, 1992). The first definition of 'family security' involves financial security and is more likely to be operated by men, whereas the second definition refers to the aspect of care within security and is more likely to be used by women. Extrinsic goals, in contrast, are tangible and include financial and other material rewards of self-employment.

The majority of female real estate agents indicate that dissatisfaction with previous employment gave rise to their self-employment 'adventure' (see Table 6.5). The main reason for this dissatisfaction is disagreement with the employer on subjects, such as opportunities for promotion and the distribution of ownership shares. Only one of the male respondents admits that dissatisfaction played an important role in the choice to become self-employed. This difference in dissatisfaction between male and female real estate agents may be explained by their different routes to entrepreneurship (i.e., their ownership status). It seems that entrepreneurship of women in the Dutch real estate brokerage is highly *necessity-driven*[159]. For the male respondents entrepreneurship is *opportunity-driven* rather than necessity-driven. Whereas most of the women established their own real estate business, the men were likely to be involved in a 'take-over'. In more than half of the cases male respondents are offered the position of (successor)-owner after being selected and supported by their employer to take control over the business. Thus, unlike the female respondents, the male respondents did not enter self-employment at their own initiative. Instead it happened by coincidence due to an arising opportunity.

Contrary to what is indicated in the literature female real estate agents are not more likely to pursue intrinsic goals and even are more explicit about the importance of financial revenues than male real estate agents. However, both female and male real estate agents are driven by intrinsic goals, such as the learning effect and "being your own boss", in their decision to start or acquire a business.

Although not a significant effect, in the empirical study female real estate agents are more likely to report the existence of conflicts between household and work responsibilities than male entrepreneurs (see Table 6.5). While half of the female respondents reports difficulties, about one-third of the male respondents does. Male real estate agents indicate they are more likely to separate work and private life because they do not want problems in the private sphere influencing their work (and the other way around). This is in accordance with Brush (1992) who argues that women see their business as part of a network of relationships.

[159] It has to be born in mind that a generation effect is in play here as most of the female respondents are early-generation entrepreneurs.

Table 6.5: Motivation for start-up (dissatisfaction/combining responsibilities)

Motivation for start-up***	*number of firms*	male	female	total
	dissatisfaction	1	9	10
	other	12	3	15
	total	13	12	25
	p=0.001			
Difficulties with combining responsibilities	*number of firms*	male	female	total
	difficulties	3	6	9
	no difficulties	8	6	14
	total	11	12	23
	p=0.265			

Propositions are coded as follows: +p<0.10, * p<0.05, ** p<0.01 and *** p<0.001.

Most of the women in the sample seem conscious of the connection between their own identity and that of their business. The majority of the female real estate agents (14 of the 15) indicate that they (want to) identify themselves with their business, i.e., to shape their own identity through self-employment, as compared to only one of the 13 male real estate agents. The connection between personal and business identity is also expressed through the appearance of their business premises. Female respondents are more likely to admit that the interior of the business reflects their own lifestyle.

Experience

Women and men differ with respect to the type and the amount of labor market experience they possess (Stigter, 1999; Birley, Moss and Saunders, 1987). Men tend to have more labor market experience in terms of both wage- and self-employment (Kalleberg and Leicht, 1991). This difference may be attributed to the fact that women experience labor market discontinuity due to pregnancy and household responsibilities. In addition, Kalleberg and Leicht (1991) argue that male entrepreneurs usually have more industry-specific experience and more experience with starting and running a business than female entrepreneurs. As a consequence, men are likely to have more management experience and experience with personnel, technical and financial issues (Van Uxem and Bais, 1996). However, as the process of gender mainstreaming continues gender differences in experience are bound to disappear in the near future.

From the empirical study it appears that female real estate agents have more (general) labor market experience as well as more industry-experience than their male counterparts (see Table 6.4)[160]. Although most of the respondents, both male and

[160] This may be related to the higher average age of female real estate agents in the sample: the average age of the male respondents is approximately 48 years versus 51 years for the female agents. Moreover, the

female, were employed in the real estate business before starting or running their own business in this sector, differences exist with respect to whether the respondents previously worked for the real estate business they currently own. Whereas most of the men were offered the possibility of running the business they had previously worked for and were put forward as successor or co-owner of the business, for women this was less frequently the case. Most of the women started their own business after a period of wage-employment in the real estate business. Only one female entrepreneur has previous entrepreneurial experience as co-owner of the business she currently runs. In contrast, most of the male entrepreneurs (9 of the 15) have entrepreneurial experience[161], either in the real estate brokerage as a co-owner of the business they now own solely or in a different line of business. An equal, albeit small, number of female and male entrepreneurs indicates to have experience as a chief executive officer.

6.4.2 Strategy and Strategic Management

It is argued that strategy is less developed in smaller than in larger businesses due to a lack of time and money (Lasher, 1999; Matthews and Scott, 1995; Robinson and Pearce, 1984). Strategy has been defined as a plan of action that states an organization's goals and outlines the required resources and activities to achieve these goals (Wagner and Hollenbeck, 1995, p. 618). Whereas strategy merely refers to planning activities, strategic management emphasizes the process by which business goals are realized. Wagner and Hollenbeck (1995) define strategic management as a process of setting organizational goals and directing the organization toward goal achievement. The strategic management process involves different activities, including formulating a strategic plan on the basis of goals and mission of the business, implementation of the strategic plan and performance evaluation. The comprehensive concept of strategic management also incorporates HRM, discussed in the subsequent section. This section focuses on some of the factors that are part of the strategic management process, including goals and strategy formulation and networking and support as a particular means to accomplish these goals.

Goals and strategy

Goals can be defined as a desired state of affairs directing the activities necessary to realize these results (Daft, 1998). Goals are diverse and can refer both to the start-up of the business and the management of an established business (Kuratko et al., 1997). Goals guide and motivate (entrepreneurial) activities and are subject to change as they can be adjusted in time. Whereas entrepreneurs are often driven by financial goals, such as making a living, most of them pursue a combination of different goals.

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women in the sample entered the labor market at the average age of 21 years old whereas the men were on average 22 years old (see Table 6.4).

[161] With a *p*-value of 0.004 this is a significant difference.

An important distinction is that between personal and business goals. Whereas personal goals usually coincide with the motivation of individuals to start or continue a business, business goals pertain to the needs and wants of the business instead of those of the owner-manager. Personal and business goals are to some extent related[162] and tend to be further apart as the size of the business increases and there are more stakeholders. In small businesses these goals are assumed to converge as management and ownership of the business tend to be in the hands of one person, i.e., the owner-manager. Personal goals and motivation have already been discussed. Here we will focus on business goals and strategy.

For the Netherlands it is found that male entrepreneurs are more ambitious regarding growth than female entrepreneurs[163]. Moreover, male entrepreneurs seem to focus on future opportunities in case of business growth, whereas female entrepreneurs tend to focus on the present situation with growth dependent on market demand (Ministry of Economic Affairs, 2000). It may be argued that women tend to pursue continuity rather than growth. Factors that have been put forward explaining the low growth orientation of female entrepreneurs, include a lack of experience of women in managing a growing business (Cliff, 1998; Cromie and Birley, 1992), the combination of household and work responsibilities and the fact that women are often engaged in business on a part-time basis (Stigter, 1999; Brush, 1992; Goffee and Scase, 1995). Also, women may be more likely to attach value to the quality of their products rather than to the volume of their sales and may therefore be reluctant to pursue a growth strategy (Brush, 1992; Chaganti and Parasuraman, 1996).

Strategies developed and implemented to pursue goals vary according to the degree of assertiveness: defensive versus aggressive strategies (Olson and Currie, 1992) and the degree of diversification: specialization versus generalization (Carter et al., 1997). Whereas a defensive strategy emphasizes survival and stability, an aggressive strategy focuses on growth and innovation. A defensive strategy is likely to make use of specialization. A strategy of specialization often involves serving a niche market, where the business is 'sheltered' from direct competition. The emphasis is on production of high quality and tailor-made products and services. Price competition becomes important when the business adopts a strategy of generalization. To pursue an effective 'price' strategy it is important to minimize costs and expenditures and maximize the resources available for marketing purposes.

Small businesses tend to adopt a strategy of specialization since they usually can not take advantage of economies of scale and scope. They compete on the basis of tailor-made products and services. The strategy of a small business often reflects the values

[162] People who become self-employed because of the financial rewards are likely to pursue financial goals, whereas people who become self-employed to combine household and work responsibilities are likely to attach less value to growth-oriented goals.
[163] Seventy-five percent of the male entrepreneurs pursue a growth strategy versus 62 percent of the female entrepreneurs (Ministry of Economic Affairs, 2000).

and characteristics of the owner-manager (Olson and Currie, 1992). Because women and men are likely to adhere to different values and have different experiences it may be argued that strategies vary according to the gender of the entrepreneur (Chaganti, 1986). Chaganti and Parasuraman (1996) argue that female entrepreneurs adopt a more defensive and specialized strategy than male entrepreneurs. Accordingly, the strategy of female entrepreneurs is characterized by high quality products and services, full customer service, fair prices and a limited range of supplied products and services (a specialized strategy)[164]. The following two propositions are formulated:

P1: Female entrepreneurs are less likely to pursue growth than male entrepreneurs.

P2: Female entrepreneurs are more likely to pursue a specialized strategy than male entrepreneurs.

Table 6.6: Findings on goals and strategy

P1: Growth orientation* Growth orientation is assumed if the respondent mentioned growth (either measured by number of employees or by financial performance indicators) as one of his/her goals.	*number of firms*	male	female	total
	growth orientation	10	3	13
	no growth orientation	5	10	15
	total	15	13	28
	p=0.021			
P2: Diversification* A firm is diversified if it serves more than one real estate market segment (e.g., residential estate, commercial estate, agricultural estate, financial services and real estate management)[a].	*number of firms*	male	female	total
	specialized	3	7	10
	diversified	12	6	18
	total	15	13	28
	p=0.038			

[a] The maximum number of segments reported is four. Propositions are coded as follows: + p<0.10, * p<0.05, ** p<0.01 and *** p<0.001.

From the results in Table 6.6 it can be seen that the majority of the male entrepreneurs considers growth an important business goal against a minority of the female entrepreneurs[165]. This is in line with Proposition 1. The lower growth-orientation of women may be related to the fact that female respondents are more likely to serve a niche market than male entrepreneurs. Female-owned businesses tend to focus on the

[164] This particular strategy of women may be attributed to different factors, such as a lack of financial resources, a lack of knowledge and skills and well-developed relational capabilities of women. The latter are extremely useful when operating on a niche market with a strong customer orientation and where expertise is emphasized.

[165] With respect to other business goals, such as customer satisfaction, high quality products and services and contribution to the community, relatively few differences appear between male and female real estate agents. This may be explained by the fact that the Dutch real estate association advocates the quality of the real estate services of their members.

business-to-consumer market, i.e., housing market, instead of the business-to-business market characterized by higher growth potential.

With respect to the degree of diversification we see from Table 6.6 that about half of the female respondents versus the majority of the male respondents (12 out of 15) serve more than one segment. Male entrepreneurs seem to be keener on diversification as they are more likely to engage in the provision of financial and insurance services to their customers. However, the difference in diversification between female and male real estate agents may be connected to differences in firm age, ownership status and firm size[166]. We see from Table 6.4 that the male respondents run older and larger firms, which they bought or inherited. In these types of firms it is more likely that a diversification strategy is pursued than in small and young start-up firms. Hence, although it appears that on average women are less likely to pursue a diversification strategy and there is a gender effect, it may be that the business profile is the underlying factor determining the degree of diversification. Hence, we have to be careful in arguing that Proposition 2 is supported.

Support: networks and mentors

Entrepreneurs can make use of outside support, such as colleagues, family, friends and connections to pursue business goals. At start-up entrepreneurs have to fulfill new and non-recurring activities, with which they usually have no experience and for which they usually are inadequately educated. Networks offer an infrastructure of knowledge and experience entrepreneurs utilize for the development of their business. As compared to men, women make more use of external sources of information and expertise to compensate for their own supposed lack of knowledge. The informational need of women may be intensified by the relative lack of confidence in their own capabilities (Van Uxem and Bais, 1996). In the Netherlands female entrepreneurs are more likely to participate in a network than male entrepreneurs[167]. However, because of the time constraint of household activities female entrepreneurs may be more likely to participate in local networks. It is also argued that networks of women are smaller and more personal (Aldrich, 1989); that women are less likely to be a member of professional networks and service clubs, such as the Rotary (Cromie and Birley, 1992) and they prefer to participate in social clubs where membership is not directly based on business activities or the self-employment status and that the networks women participate in are relatively homogeneous in nature (Ibarra, 1993).

Female entrepreneurs are often supported by their spouse, friends or family (Ibarra, 1993). Support provided by these relationships is usually financial and tangible in nature. For advice and the development of business contacts female entrepreneurs tend

[166] Nevertheless, the difference between female and male real estate agents with respect to firm size is not significant (see Table 6.4).
[167] 76 percent of the male entrepreneurs participates in a network as compared to 82 percent of the female entrepreneurs (Ministry of Economic Affairs, 2000).

to consult people outside of the personal sphere (Cromie and Birley, 1992). These people are referred to as mentors whose task it is to fill (future and potential) entrepreneurs in on a certain profession and related activities.

Using the present sample, we do not expect to find gender differences regarding the participation in local networks as real estate brokerage is locally bound[168]. Moreover, because estate agents in the sample are members of the Dutch Real Estate Association (NVM), which is a professional network, we can not 'pass judgment' on the likelihood of participation in (professional) networks[169]. The following propositions on networking and support are formulated:

P3: Female entrepreneurs are more likely to participate in gender homogenous networks than male entrepreneurs.

P4: Female entrepreneurs are more likely to make use of mentors who familiarize them with the profession than male entrepreneurs.

Table 6.7: Findings on support

P3: Gender homogenous networks Respondents were asked whether they participate in gender homogenous networks.	*number of firms*	male	female	total
	gender homogenous networks	0	1	1
	no gender homogeneous networks	15	12	27
	total	15	13	28
	p=0.274			
P4: Role of a mentor* Respondents were asked whether they receive(d) help of a mentor in starting or running the business.	*number of firms*	male	female	total
	Mentor	3	8	11
	no mentor	12	5	17
	total	15	13	28
	p=0.025			

Propositions are coded as follows: + p<0.10, * p<0.05, ** p<0.01 and *** p<0.001.

No support is found for Proposition 3 (see Table 6.7). Only one female entrepreneur is explicit about her involvement in meetings with other female real estate agents. However, she also participates in mixed networks. Women seem to be aware of the constraints of participating in networks that merely consist of women, maybe because the real estate business is dominated by men. However, female entrepreneurs do not seem to disapprove of networks consisting solely of women. These homogeneous networks are considered useful for exchanging experiences, although merely participating in female networks is considered not sufficient.

[168] Palm (1992), studying the Bay Area, and Lukkes en Van Rooden (1986), studying the Netherlands, both report working areas for estate agents within a range of 20 kilometres.

[169] Most of the female real estate agents in the sample argue that participation in professional networks makes their business more credible and legitimate.

Support is found for Proposition 4 as the majority of the female respondents is supported professionally by a personal mentor. See Table 6.7. In most cases this is someone outside of their organization. Interesting is that in all cases the mentor was an older man, usually from within the family of the female entrepreneur, such as a father (in-law) or uncle. The tasks of these mentors range from advice and counseling to financial and moral support. Some of the male respondents also received support. This support was provided by their previous employers appointing them as potential successor and, accordingly, preparing them to take over the business.

6.4.3 Human Resource Management

Human resource management (HRM) has been defined as "the process of attracting, developing and maintaining a talented and energetic workforce to support organizational mission, objectives and strategies" (Schermerhorn, 2001, p. 240). Recruiting, motivating and maintaining employees are some of the main problems of small businesses (Hornsby and Kuratko, 1990). Although small business owners acknowledge the importance of personnel management for business development and survival, in practice little attention is paid to the 'human' aspect of business. Instead, functional aspects, such as finance, marketing and production, have precedence over HRM (McEvoy, 1984). Also, there is a lack of time, money and employees to formalize HRM practices in small businesses (Hornsby and Kuratko, 1990; Deshpande and Golhar, 1994, Marlow and Patton, 1993; Jackson et al., 1989). HRM is a comprehensive concept consisting of many aspects. The focus in this study is on recruitment and selection, training and development, reward structure and leadership style in female- and male-owned small businesses[170].

Recruitment and selection

Because small businesses lack time and money, recruitment and selection procedures tend to be informal and simplistic (Heneman and Berkley, 1999; Ram, 1999)[171]. According to Heneman and Berkley (1999) small businesses often use recruitment sources that are convenient, inexpensive and directly controllable. Small businesses tend to use existing networks and personal contacts rather than employment agencies or educational institutions to recruit personnel (Deshpande and Golhar, 1994; Goffee and Scase, 1995). In addition, entrepreneurs consult their colleagues or employees for recruitment of personnel (Koch and Van Straten, 1997; Marlow and Patton, 1993). The recruitment procedures of small businesses can be referred to as 'via-via recruitment' (Koch and Van Straten, 1997). This type of recruitment enables the screening of potential employees and business owners can find out whether someone fits in the team. The latter is an important selection criterion in small businesses where real competencies and technical requirements of the job are often subordinate to

[170] Although relatively little research has been conducted on the differences between male and female entrepreneurs with respect to the shaping of HRM practices, some propositions are formulated.
[171] This does not mean that small businesses do not take recruitment and selection seriously (Ram, 1999).

interpersonal relationships (Ram, 1999; Kitching, 1994). To find a new employee who fits in the team small businesses also offer apprenticeship places, where apprentices have the opportunity of a permanent job when they perform well (Deshpande and Golhar, 1994). In addition to the 'team fit' selection criterion, a broad knowledge base is considered important in small businesses where tasks are less specialized than in larger businesses (Koch and De Kok, 1999).

Because women tend to value relationships over hierarchy (Brush, 1992; Stanford et al., 1995) they can be expected to attach more value to 'team qualities' of potential entrepreneurs. In this respect, women may be more likely to hire other women or they may be more critical when recruiting new employees. In addition to skills, knowledge and fitting in with the team, women may also consider the appearance of an applicant important. On the basis of these (alleged) selection criteria of female entrepreneurs it would be expected that they use personal networks rather than the regular formal recruitment channels (e.g., employment agencies). The following propositions on recruitment and selection are formulated:

P5: Female entrepreneurs attach more value to the selection criterion of 'fitting in' than male entrepreneurs.

P6: Female entrepreneurs are more likely to pay attention to the appearance of a potential employee than male entrepreneurs.

P7: Female entrepreneurs are more likely to hire employees of their own gender than male entrepreneurs.

P8: Female entrepreneurs are more likely to make use of personal networks to recruit new employees.

No support is found for Proposition 5 (see Table 6.8). Most of the respondents, both male and female, attach value to the team-fit selection criterion. However, female real estate agents seem to be more explicit about the importance of fitting in with the team. Whereas female real estate agents clearly state 'fitting in' as an important selection criterion, this could only be inferred indirectly from the answer of most of the male respondents. Proposition 6 is supported as most of the female respondents – against only one of the men – indicate that appearance of an applicant is considered important in the selection process. Female real estate agents seem to make use of a longer, albeit unwritten, list of requirements than male entrepreneurs. Whereas the male respondents emphasize the importance of formal requirements, such as certificates, diplomas and demonstrable competencies, the female respondents also refer to social intellect and appearance as important informal requirements. Because these informal requirements are difficult to specify or formalize female respondents admit they are almost always involved in the selection procedure of new employees. Because female agents prefer employees who fit in with both team and appearance of the business and tend to monopolize the recruitment of new personnel, new recruits may strengthen the owner-inspired appearance of the business (premises).

Table 6.8: Findings on recruitment and selection

P5: Importance of 'fit' Respondents were asked which criteria they use in recruiting new employees. We assume that 'fit' is considered important if respondents (explicitly or implicitly) referred to 'fitting in' of the applicant.	*number of firms*	male	female	total
	'fitting in' mentioned	4	7	11
	'fitting in' not mentioned	5	6	11
	total	9	13	22
	p=0.147			
P6: Importance of appearance* Respondents were asked which criteria they use in recruiting new employees. We assume that appearance is considered important if respondents (explicitly or implicitly) referred to the representativeness of an applicant.	*number of firms*	male	female	total
	representative mentioned	1	6	7
	representative not mentioned	8	3	11
	total	9	9	18
	p=0.031			
P7: Importance of gender homogeneity* Respondents were asked whether or not they considered gender important when selecting / recruiting new employees.	*number of firms*	male	female	total
	gender is an issue	0	4	4
	gender is no issue	7	5	12
	total	7	9	16
	p=0.016			
P8: Use of personal network Respondents were asked whether or not they make use of 'personal networks' for the recruitment of new employees.	*number of firms*	male	female	total
	use network	3	6	9
	use no network	5	3	8
	total	8	9	17
	p=0.229			

Propositions are coded as follows: + p<0.10, * p<0.05, ** p<0.01 and *** p<0.001.

With respect to gender homogeneity of the team we see that none of the male real estate agents considers gender an issue in selecting and recruiting new employees[172], whereas some of the female respondents are inclined to merely hire women. This may be related to their strategy of reaching a specific audience, thereby creating a niche market. Moreover, some of the female entrepreneurs experienced that young male real estate agents were reluctant to work for a woman. This limits the extent to which female entrepreneurs can choose freely from the pool of (supplied) labor. Thus, there is evidence in support of Proposition 7.

No support is found for Proposition 8. Using a personal network for the recruitment of new employees appears to be a common strategy within small real estate businesses.

[172] It has to be born in mind that the male respondents may have been careful in their answer to this question as they do not want to be accused of discrimination.

However, regarding the diversity of recruitment strategies used, female respondents are more likely to use family, friends, fellow workers and relatives as the main recruitment strategy, whereas male respondents also refer to formal recruitment channels as important sources of personnel. This may also be attributed to differences in business age and size, with the older and somewhat larger businesses of men being more dependent upon formal recruitment methods.

Training and development

Training and development of employees is important both to ensure that tasks are adequately fulfilled and to motivate employees. Whereas training is aimed at teaching the necessary skills and knowledge to fulfill a task in the short term, development has a long-term focus and is aimed at acquiring and developing skills and knowledge beyond the basic capabilities (Fairfield-Sonn, 1987). Because small businesses spend relatively little money on training and development – as compared to larger businesses – these practices tend to be informal in nature and take place within the business, for instance in the form of mentoring where (new) employees are supervised by a more experienced employee (Koch and Van Straten, 1997)[173]. Moreover, small businesses often do not make use of the full range of training and development sources (Banks et al., 1987).

Training and development is usually highly determined by the size of the business and, accordingly, gender may play only a minor role in determining training and development practices. Although both female and male entrepreneurs are likely to be aware of the importance of educating their work force, there may be differences regarding how training and development is presented to new employees. For instance, because women have a more participative leadership style than men (Eagly and Johnson, 1990; Helgesen, 1990) it may be that engagement in a training program is more likely to be on a voluntary basis in female-owned firms than in male-owned firms. Proposition 9 is formulated as follows:

P9: Female entrepreneurs are less likely to oblige their personnel in taking courses than male entrepreneurs.

Table 6.9: Findings on training and development

P9: Obligation of training** Respondents were asked by whom training is proposed.	*number of firms*	male	female	total
	by employer	2	7	9
	by employee or in dialogue	13	3	16
	total	15	10	25
	p=0.004			

Propositions are coded as follows: + p<0.10, * p<0.05, ** p<0.01 and *** p<0.001.

[173] This type of training has the advantage of making an employee familiar with the business, while at the same time exchanging information about the business. However, the information specificity can be a disadvantage when the employee leaves the business.

In many instances new recruits in the real estate brokerage are taught the ropes by more experienced employees. Employees are required to obtain their real estate certificate, especially if they want to make a career in the real estate business and stay on for a longer period of time. From the results in Table 6.9 it appears that there is a gender difference, albeit one that is opposite to what is proposed in Proposition 9. Whereas female real estate agents tend to take the initiative and propose training to their employees, male real estate agents are more likely to decide upon the usefulness of training in dialogue with their personnel. Although the training propositions of female entrepreneurs may not be binding, it could well be an indication of their educational demands.

Compensation

Motivating personnel is important to ensure the continuity of the business. Financial rewards can motivate employees to make an effort and to stay with the business. In small businesses financial rewards are usually lower than in large businesses (Brown, Hamilton and Medoff, 1990; Brown and Medoff, 1989). Wages can be based on market value, performance, seniority, capabilities or experience (Deshpande and Golhar, 1994). Within small businesses pay determination is often not pursued in a systematic manner (Ram, 1999; Curran et al., 1993). Employees receive basic pay independent of performance (Risseeuw et al., 1999; Koch and van Straten, 1997). Because small businesses usually have short lines of communication (Fuller-Love and Scapens, 1997), there may be no need to keep control over employees by paying them according to their (individual) performance. In many instances small business owners consider performance-related pay as a last resort for motivating personnel (Fuller-Love and Scapens, 1997). However, performance-related pay may be more common in the real estate brokerage than in other industries because professional service is one of its core activities.

Women are expected to motivate their employees in a different way than men because they have specific communicative skills. It has been argued that women are good at motivating and persuading people (e.g., Nelton, 1991), that they are emphatic, good listeners, are good at solving conflicts where various interests are involved, and have a 'soft' approach to handling people (Stanford et al., 1995). This specific style of women may give rise to a different reward structure with an emphasis on non-pecuniary rewards, such as flexibility of working hours, childcare facilities and verbal compliments, in addition to basic pay, rather than a focus on performance-related pay. Because female management styles tend to be team-based (Chaganti, 1986; Nelton, 1991; Stanford et al., 1995) it may be expected that when they do make use of performance-related pay, this is based on team instead of individual performance. The following propositions are formulated on compensation:

P10: Female entrepreneurs are less likely to make use of performance-related pay to motivate their employees than male entrepreneurs.

P11: Female entrepreneurs are more likely to reward team performance (instead of individual performance) than male entrepreneurs.

Table 6.10: Findings on financial incentives

P10: Use of financial incentives Respondents were asked whether they make use of performance-related pay.	*number of firms*	male	female	total
	performance-related pay	8	4	12
	no performance-related pay	7	9	16
	total	15	13	28
	p=0.229			
P11: Focus on the individual or on the team Respondents who gave an affirmative answer to question of P10 were asked if their reward system is based on individual or team performance.	*number of firms*	male	female	total
	individual performance	5	2	7
	team performance	3	2	5
	total	8	4	12
	p=0.679			

Propositions are coded as follows: + p<0.10, * p<0.05, ** p<0.01 and *** p<0.001.

No support is found for Propositions 10 and 11. See Table 6.10. Although female entrepreneurs appear to be less likely to make use of performance-related pay to motivate their employees, this finding is not significant. The use of performance-related pay may be more dependent upon business size than gender. In case performance-related pay is used, female and male real estate agents are equally likely to reward team performance, usually in terms of profit sharing. Although no gender differences are reported with respect to the use of performance-related pay, there is some evidence of differences regarding the *motivation* for using performance-related pay. Male entrepreneurs seem to use performance-related pay to enhance labor productivity and to support their growth strategy, whereas female entrepreneurs seem to use it as a means to secure or increase the commitment and loyalty of their key employees. Female entrepreneurs seem to be concerned with the continuity of their business and may use performance-related pay reacting to rather than anticipating the (possible) growth of the business. Male entrepreneurs tend to be more proactive with respect to growth and reactive with respect to loyalty, whereas female entrepreneurs tend to be more proactive with respect to loyalty and reactive towards growth.

Leadership style

Leadership has been defined as the ability to influence a group or individual towards the achievement of goals (Robbins, 1998, p. 347). Because leadership is the ability to make people strive after business goals it encompasses different elements, such as motivation, communication and delegation. Moreover, the atmosphere in the business may be of crucial importance to enhance the performance of employees.

There are different classifications of leadership styles: autocratic versus democratic decision-making (Lewin and Lippitt, 1938); task-oriented versus interpersonal oriented styles (Bales, 1950; Blake and Mouton, 1964); and transformational versus transactional styles (Bass et al., 1996). Many authors refer to the more instrumental, task-oriented, autocratic styles as masculine leadership styles and to the interpersonally oriented and democratic styles as feminine leadership styles (Van Engen, 2001, p. 32/3). The task-oriented leadership style is characterized by a high degree of control, no room for consultation and negotiation and centralized decision making. Interpersonally-oriented leadership is characterized by participation of employees in decision making and indirect control of activities. In practice leadership styles tend to be somewhere in-between both archetypes. Sometimes a third 'style' is added, 'laissez-faire', representing an avoidance of leader behavior (White and Lippitt, 1960).

Leadership styles are likely to vary between situations (e.g., distress versus stability) and between businesses (e.g., small versus large). Small-scale activities enable a more flexible, informal and personal style with direct communication between employees and the owner-manager and are usually characterized by a higher participation of employees in decision making. Ram (1999, p. 27) argues that small businesses are often characterized by high autonomy of employees, managed through informal mechanisms and tacit understandings.

It has also been argued that leadership styles tend to vary between women and men (Rosener, 1990; Ely, 1994; Grant, 1988)[174]. It is contended that women tend to adopt a more democratic or participative and a less autocratic leadership style than men (Helgesen, 1990; Eagly and Johnson, 1990; Cromie and Birley, 1992). Brush (1992) describes the role of women as coordinating relationships rather than ordering people around. Women tend to structure their business in a non-hierarchical and informal way (Rosener, 1990) and they tend to be open to criticism, accessible for their employees, and tend to foster relationships based on mutual trust and respect with their employees (Stanford et al., 1995). This relatively informal relationship between owner-manager and employees may stimulate informal communication where female entrepreneurs can provide their employees with direct feedback rather than schedule formal meetings. According to Brush (1992) female entrepreneurs see their business as a coalition of relationships aimed at realizing business goals. Because female entrepreneurs are more likely to experience the challenge of combining business and private life, it may be expected that these are more likely to be intertwined in the lives of female entrepreneurs (as compared to male entrepreneurs). The following propositions are formulated:

P12: Female entrepreneurs are more likely to make use of a participative, people-based leadership style than male entrepreneurs.

[174] Nevertheless, there are scholars who argue that female and male managers show similar rather than different behavior (e.g., Dobbins and Platz, 1986, and Powell, 1990).

P13: Female entrepreneurs are more likely to delegate tasks to their employees than male entrepreneurs.

P14: Female entrepreneurs are less likely to communicate formally with their employees than male entrepreneurs.

P15: Female entrepreneurs experience more interaction between business and private life than male entrepreneurs.

Table 6.11: Findings on leadership

P12a: Participative style Respondents were asked whether employees are involved in the strategic decision-making process.	*number of firms*	male	female	total
	employees involved	5	8	13
	employees not involved	10	5	15
	total	15	13	28
	p=0.142			
P12b: Personal relationship with employees** Respondents were asked whether they maintain a personal relationship with their employees.	*number of firms*	male	female	total
	personal relationship	3	9	12
	no personal relationship	12	4	16
	total	15	13	28
	p=0.009			
P13: Delegation Respondents were asked if they could indicate the degree of delegation in their business.	*number of firms*	male	female	total
	no delegation	0	1	1
	some delegation	5	7	12
	intensive delegation	10	5	15
	total	15	13	28
	p=0.238			
P14: Formal communication** Respondents were asked if there was formal communication with employees in periodic scheduled meetings.	*number of firms*	male	female	total
	formal communication	15	6	21
	no formal communication	0	5	5
	total	15	11	26
	p=0.004			
P15: Interaction business – private life* Respondents were asked if their private and business life is connected, more specifically, if their roles at home and work differ.	*number of firms*	male	female	total
	reference to 'parent' role	0	3	3
	no such reference	15	10	25
	total	15	13	28
	p=0.049			

Note: propositions are coded as follows: + p<0.10, * p<0.05, ** p<0.01 and *** p<0.001.

A participative, people-based leadership style is measured by (a) the degree of participation of employees in decision-making and (b) the personal involvement of the respondents with their employees (see Table 6.11).

It appears that there are no significant gender differences with respect to employee participation. Both male and female real estate agents let their employees participate in decision-making. However, there seems to be a difference regarding the extent to which employees can make a contribution. Male real estate agents tend to use a moderate form of command-and-control where employees do participate in the decision-making process, but where the final decision is made by the entrepreneur himself. Female respondents are more likely to involve their employees throughout the whole decision-making process. From the results in Table 6.11 we do see that female agents are more personally involved with their personnel. They cultivate a personal relationship in which loyalty is important. Hence, there appears to be only partial support for Proposition 12.

No significant gender differences are found with respect to the degree of delegation of tasks. Both female and male real estate agents refer to the need for delegation. Only one female entrepreneur did not delegate tasks because she thinks her employees lack professional skills. See Table 6.11. No support is found for Proposition 13. The owner-manager of a small business is usually forced to delegate tasks because of a lack of time to undertake all activities alone. This is especially the case for real estate businesses where day-to-day operations claim most of the time of the owner-manager. On the other hand, when the firm grows there is a higher need for delegation because the organization structure is more complex.

With respect to the use of formal communication we find that all male respondents make use of formal communication within periodic scheduled meetings versus half (six out of eleven) of the female respondents. See Table 6.11. Because formalization is more likely to occur in older and larger firms, it may be that the higher degree of formalization in the male-owned real estate firms in this sample is (at least) partly attributable to a higher firm age and size. These may be underlying determining factors that make it difficult to draw conclusions about the existence of a gender effect. Thus, one should be careful in arguing that there is evidence in support of Proposition 14.

Although female real estate agents seem to make less use of formal communication methods, performance appraisal takes on a relatively formal structure. It may be that the personal relationship of female entrepreneurs with their employees leads to confusion in case direct feedback is given on the work floor, for instance it may be unclear for employees whether comments are made from a business or personal perspective. From this perspective female entrepreneurs could be reluctant to criticize their employees during their day-to-day operations because this could be interpreted as a personal insult rather than as necessary feedback. This may provide them with a

reason to formally structure criticism in scheduled meetings where there is no role ambiguity as it is clear that business matters are discussed.

The entanglement of business and personal life is also expressed within the general atmosphere of the business of female real estate agents. Some of the female respondents refer to themselves as the 'mother' of the business – listening to the problems of their employees and helping them out in the private sphere – whereas none of the male respondents mention a similar 'father' role (see Table 6.11). This provides some support for Proposition 15.

6.5 Conclusion and Discussion

In the present study gender differences in strategic and human resource management within the context of the Dutch real estate brokerage have been explored using a sample of 28 female and male real estate agents. This study is exploratory in nature as it makes use of a small and nonrandom sample. The study does however point at the existence of gender differences, in particular with respect to the motivation for start-up, experience, the use of a mentor, path to entrepreneurship, growth-orientation and leadership. Other differences between female and male real estate agents, for instance with respect to the pursuit of a diversification strategy and the degree of formalization, may be attributable to a difference in business profile (firm age, size and ownership status) rather than the gender of the entrepreneur.

An interesting finding is that whereas male entrepreneurs frequently were involved in the take-over of the real estate business they previously worked for, female entrepreneurs were more likely to start their own business. It seems that male entrepreneurship in the real estate business is *opportunity*-driven, as they do not become self-employed at their own initiative, while female entrepreneurship is more *necessity*-driven as women are not offered the opportunity to take over an established business and start their own business. The somewhat smaller size of the businesses of female real estate agents in the sample may refer to the different paths to business ownership taken by men and women; taking over and starting a business, respectively. Moreover, female entrepreneurs are less likely to pursue a growth strategy, limiting business size. Female entrepreneurs are more likely to pursue a specialized strategy focusing on the business-to-consumer market, i.e., housing market, rather than on the business-to-business market that is dominated by male entrepreneurs. Male entrepreneurs are more inclined to offer additional services, such as financial and insurance services. This diversification strategy of male real estate agents may also be (partly) explained by the larger average size of their firms. Whereas female entrepreneurs seem to focus more on continuity than on growth, male entrepreneurs seem more proactive with respect to growth, focusing on (future) opportunities of growth.

Focusing on continuity female entrepreneurs appear to aim at maintaining or enhancing the loyalty of their key employees. This is done by adopting a style of leadership with room for personal relationships with employees and informal communication. In contrast, male entrepreneurs, pursuing a growth strategy, seem more likely to make use of a different style of leadership in which communication is formally structured and there is little room for discussion and consultation on the work floor. It has been argued that strategy influences the type of leadership or, more general, the shaping of HRM practices (Schuler and Jackson, 1987; Lengnick-Hall and Lengnick-Hall, 1988). Moreover, it is also argued that the pursuit of a growth strategy is related to more formal and professionally developed HRM practices (Thakur, 1999; Matthews and Scott, 1995). Applying this line of reasoning to the female-owned real estate business it is likely that the low growth-orientation of women has important consequences for the type of leadership, being relatively informal[175].

Another distinguishing feature of female entrepreneurship is that business and personal aspects are intertwined. As Brush (1992) argued, women tend to see their business as a cooperative network of relationships. The interests of family, business and society are interrelated. The focus on relationships and balancing interests is clearly visible within female-owned businesses in real estate. Most of the female entrepreneurs referred to the balancing of household and work responsibilities and resolving conflicts between the two types of responsibilities. Also, female entrepreneurs are more likely to have personal and informal relationships with their employees.

Although in this study not all 15 propositions are supported, there seems to be some evidence for the existence of gender differences within the context of the Dutch real estate brokerage. However, gender differences may be less pronounced since most of the female-owned real estate businesses included in the sample are younger and smaller than the male-owned firms.

The fact that women tend to have younger businesses than men (in this sample) may influence organizational issues and distort the findings of the isolated gender effect. The organization of the business is expected to vary according to the phase in the business life cycle. The structure of a new venture is likely to differ from that of an established business, for instance there will be lower levels of diversification and formalization. Within a growing business there will also be different priorities than in a mature business, leading to differences in strategy and management styles. Size of the business is always an important intermediate factor as it is expected to influence almost every aspect of the business. However, since most of the selected businesses are within the range of very small to small businesses and the size difference between the firms of female and male real estate agents in the sample is small and not

[175] This informal style may however also be explained by the smaller size of the organizations of female real estate agents.

significant, it may be expected that the disturbing influence of business size is minimal.

Age of the (female) entrepreneur is an important intervening factor because the position of women in society has been subject to some important changes over time. The process by which women gradually start participating in 'parts' of society previously occupied by men has been referred to as *gender mainstreaming* (Verstand-Bogaert, 1999). This process starts with acknowledging gender inequality in opportunities[176] and is followed by equal formal treatment in rules and legislation and the removal of material inequality. The next step is enhancing cultural change and challenging stereotypes. In these three steps the female role is reformulated and revalued. The fourth phase involves the removal of gender inequality in tasks. Women are starting to enter professions that were previously occupied by men, whereas men increasingly are involved in household activities. The fifth (still utopian and possibly undesired) phase of the process of gender mainstreaming is characterized by total (societal) equality.

These phases of *gender mainstreaming* imply that both entrepreneurial opportunities and barriers experienced differ with the age of the female entrepreneur. Women starting their own real estate business between the 1960s and the 1980s were most likely to experience opposition. They were pioneers and had great difficulty in gaining legitimacy. The second generation of female real estate agents started between 1980 and 1990 and was less likely to be confronted with barriers since higher acceptance was brought about by pioneers paving the way for the next generations. Although experiencing less opposition than previous generations the third generation, starting between 1990 and 2000, are still likely to experience difficulties due to the continued dominance of the real estate brokerage by men. As barriers and opportunities are assumed to vary with the age of the female entrepreneur, it may be expected that age influences the way in which activities are shaped.

The present study is exploratory in nature in that it is based on a small sample, drawn from a particular group of people, i.e., real estate agents who are member of the Dutch Real Estate Association NVM, and is in-depth as a range of questions is asked in order to broadly explore gender differences in the area of strategy and human resource management. The study shows that there is some evidence of gender differences in entrepreneurship (within its specific context). However, for a better understanding of gender differences in general or differences with respect to strategic and human resource management in particular the propositions in the present study (and other propositions) should be explored in more detail using extensive data sets. These data sets may also enable researchers to control for intervening factors, such as age and size of the business, in addition to sector, to improve the accuracy with which gender differences are interpreted. Moreover, given that gender differences exist, relationships between different organizational factors, such as strategic management and HRM,

[176] In the Netherlands this happened between the 1950s and the mid-70s.

should be further explored since there is evidence that these factors are related. This exploration should take into account both a gender effect in strategy formulation and a gender effect within the relationship between strategic management and the shaping of HRM practices. Furthermore, the extent to which the results in the present study are applicable to other countries may be limited by the fact that the empirical study is confined to the Netherlands where the real estate brokerage is still dominated by men. To increase the 'generalizability' of the study international data are needed to cancel out any country-dependencies.

Chapter 7: Commitment or Control? Human Resource Management Practices in Female and Male-Led Businesses

7.1 Introduction

Research in the field of human resource management (HRM) has demonstrated that the shaping of HRM practices depends upon factors, such as sector (Mowday, 1998; Ram, 1999; Curran et al., 1993), business strategy (Schuler and Jackson, 1987; Lengnick-Hall and Lengnick-Hall, 1988; Youndt et al., 1996) and firm size (De Kok and Uhlaner, 2001; Ram, 1999). It may be argued that because HRM research is usually conducted in large corporate environments, we probably have a distorted view of how HRM in small firms is actually practiced. The scarce research has shown that HRM practices in small firms tend to be structured differently than in large businesses. Small firms usually lack time, money and employees to formalize HRM practices (Hornsby and Kuratko, 1990; Deshpande and Golhar, 1994; Marlow and Patton, 1993; Jackson et al., 1989; De Kok and Uhlaner, 2001). Also, in many small businesses functional areas, such as finance, marketing and production, seem to have precedence over HRM (McEvoy, 1984).

There is likely to be variation within the small business sector regarding the structuring of HRM. According to Nooteboom (1993, p. 287) it is difficult to make general statements about small and medium-sized firms, because they are highly diverse. This diversity may also be important when investigating businesses of women and men. Many aspects have been studied in the area of female entrepreneurship or gender differences in entrepreneurship, including motivation and psychological traits (Sexton and Bowman, 1986; Cromie, 1987; Langan-Fox and Roth, 1995; Buttner and Moore, 1997), financial capital (Riding and Swift, 1990; Fay and Williams, 1993; Carter and Rosa, 1998; Verheul and Thurik, 2001), human and social capital (Hisrich and Brush, 1983; Cromie and Birley, 1992; Dolinsky et al., 1993) and performance (Kalleberg and Leicht, 1991; Du Rietz and Henrekson, 2000; Gundry and Welsch, 2001; Watson, 2002). However, few entrepreneurship scholars have focused upon gender differences in organization and management (Brush, 1992; Carter, 1993; Mukhtar, 2002), or – more specifically – HRM (Verheul et al., 2002).

The management literature generally provides inconclusive evidence regarding the question whether women and men are different managers or leaders. In the scientific management literature (Gilligan, 1982; Ely, 1994; Grant, 1988) as well as in the popular management literature (Helgesen, 1990; Rosener, 1990, 1995; Loden, 1985) it has been argued that women and men adopt different management styles. Others claim

that the way in which women and men behave in an organizational setting tends to be similar rather than different (Dobbins and Platz, 1986; Powell, 1990). A different, but related, discussion surrounds the question whether a distinction can be made between 'masculine' and 'feminine' management styles, where women and men can adopt both styles (Van Engen, 2001)[177].

Because research on gender differences in leadership has yielded results that are ambivalent, criticism has arisen with respect to studying the subject. Vecchio (2002) argues that studies equating gender with leadership dimensions are subject to stereotype and simplistic views of gender and leadership and often ignore contextual influences. The importance of studying contextual influences and looking for new frontiers in the area of gender, leadership and managerial behavior has also been acknowledged by Butterfield and Grinnell (1999). The present study is an attempt to do both, focusing on gender differences in HRM within the context of small firms. The focus on small firms is new since most studies investigating management styles of women and men focus on large firms (Mukhtar, 2002). The present study focuses upon the organizational structure (i.e., the level of analysis is the firm) of the businesses of female and male entrepreneurs. However, it should be born in mind that in small firms the organizational structure tends to be relatively simple, with the entrepreneur dictating the firm's structure. Thus, the behavior of the entrepreneur and the structure of the organization can not be understood separately as they are largely intertwined.

Several perspectives have been used to study HRM practices, including the extent to which they contribute to increased firm performance (Guest, 1997; Huselid, 1995; Huselid et al., 1997; Ichniowski et al., 1997; Koch and McGrath, 1996; Paauwe, 2004; Boselie et al., 2003; Boselie et al., 2001) and the level of sophistication (Arthur and Hendry, 1990; Deshpande and Golhar, 1994; Duberley and Walley, 1995; Hornsby and Kuratko, 1990; Koch and McGrath, 1996; Marlow and Patton, 1993).

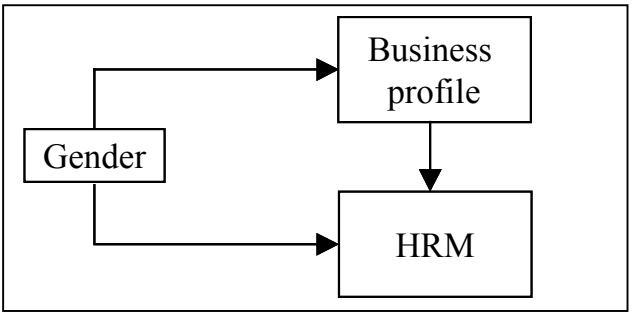
Following Boselie (2002), and making use of the work of Beer et al. (1984), Walton (1985) and Arthur (1992; 1994), in the present study a distinction is made between those HRM practices that focus upon enhancing employee commitment and those practices that increase control of the owner-manager over employees and the production process. These two aspects of HRM practices are considered the extremes on a continuum, where HRM practices tend to be either more commitment- or more control-oriented. The research question is whether HRM practices in female and male-led businesses differ on the Control-Commitment Continuum.

It has been argued that female entrepreneurs or managers are more commitment-oriented than their male counterparts, where commitment is equated with 'feminine' leadership (e.g., Chaganti, 1996; Bass et al., 1996; Yammarino et al., 1997). However,

[177] Indeed, Vecchio (2002) argues that there has been a shift in research from a one-dimensional to a two-dimensional view of gender.

not all studies discriminate between 'real' gender effects and effects that are due to differences in the characteristics of the businesses of women and men. In this study it is argued that gender[178] can have both a direct and an indirect effect on HRM (Figure 7.1). In addition to gender, other (contextual) factors – that can influence the shaping of HRM practices and with respect to which businesses of women and men can differ – are taken into account. These factors include firm size, sector, goals, strategy and firm age, and are referred to as the 'business profile' in Figure 7.1. When controlling for these 'business profile' factors the direct or 'real' gender effect is singled out.

Figure 7.1: Gender and HRM



In the empirical study a distinction is made between the effect of gender of the entrepreneur on the HRM system as a whole and the separate HRM practices that make up this system. To test the effect of gender on HRM in the present study use is made of panel data of the research institute EIM Business and Policy Research. In addition to the direct or real gender effect on HRM, attention is also paid to possible indirect gender effects on HRM (through the business profile).

The set-up of this chapter is as follows. Section 7.2 focuses upon the Control-Commitment Continuum as proposed by Walton (1985) and put in the context of HRM in studies by Arthur (1994), Godard (1998) and Boselie (2002). HRM dimensions on the Control-Commitment Continuum are discussed, several of which are identified and included in the empirical study. In Section 7.3 attention is paid to the influence of gender on HRM. Also the controls (business profile factors) are listed and discussed briefly. In Section 7.4 data and methodological issues are discussed. In the results section, Section 7.5, factor analysis is used to construct HRM scales. Descriptive and bilateral statistics are reported and the hypotheses are tested using correlation and regression analysis techniques. Section 7.6 concludes, summarizing

[178] Although a detailed discussion of the gender concept is not within the scope of the present study, it should be noted that this study refers to gender differences as a function of socialization ('nurture'), rather than as a function of biology ('nature'). However, in the empirical study gender is measured by way of the biological sex of the owner-manager of a business. For a detailed discussion of the distinction between 'sex' and 'gender', see Korabik (1999).

and discussing the most important findings as well as the limitations of the study, and giving suggestions for further research.

7.2 The Commitment-Control Continuum

7.2.1 Commitment versus Control HRM Systems

The distinction between commitment and control is not new and can be traced back to McGregor's (1960) Theory X and Y, referring to the tension between the instrumental rationality of bureaucratic systems and the affective needs of employees or the need to achieve both control and consent of employees to maintain or improve performance (Legge, 1995). Other classic organizational classifications, resembling the control–commitment dichotomy, and varying in scope (organization structure versus management style), include autocratic versus democratic decision-making (Lewin and Lippitt, 1938); mechanistic versus organic organizations (Burns and Stalker, 1961), task versus interpersonal oriented styles (Bales, 1950; Blake and Mouton, 1964); Likert's (1967) systems 1 to 4; transactional versus transformational leadership (Bass et al., 1996), direct control versus responsible autonomy (Friedman, 1977) and Tannenbaum and Smith's (1958) continuum (tell-sell-consult-join)[179]. These management modes either emphasize maintenance of tasks through direct forms of control or nurturing of interpersonal relationships through indirect or self-control of employees (Van Engen, 2001).

Based on the dimensions of the *traditional* versus *high-commitment* work system as proposed in Beer et al. (1984), Walton (1985) explicitly proposes the distinction between commitment and control strategies within the organization. This distinction is further elaborated in the context of HRM by other authors (Guest, 1987; Arthur, 1992, 1994; Legge, 1995; Godard, 1998). Commitment and control are two distinct ways in which employee behaviors and attitudes can be influenced (Arthur, 1994). Given the assumption that HRM consists of a series of internally consistent HRM practices, which combine into a specific HRM system, it can be argued that HRM systems are either control- or commitment-oriented.

Control HRM systems are characterized by a division of work into small, fixed tasks for which individuals can be held accountable, and direct control with managers supervising rather than facilitating employees (Walton, 1985). This type of HRM system aims at reducing direct labor costs or improve efficiency, by enforcing employee compliance with specified rules and procedures (Walton, 1985; Eisenhardt, 1985; Arthur, 1994). In contrast, commitment HRM systems are characterized by managers who facilitate rather than supervise. This type of HRM system emphasizes

[179] This listing is by no means exhaustive but is meant to give an idea of which organizational classifications are available.

employee development and trust, establishing (psychological) links between organizational and personal goals. Commitment here is seen as an individual's bond with an organization, referred to as attitudinal (affective) commitment (see Allen and Meyer, 1990).

Though important, establishing a link between employee commitment and firm performance, through behavioral commitment, is not within the scope of the present study. Adopting a normative perspective, it has been argued that high-commitment HRM has a positive effect on firm performance (Huselid, 1995; Huselid et al., 1997; MacDuffie, 1995; Ichniowski et al., 1997). Purcell (1999) argues that researchers should not only focus upon searching for high-commitment HRM practices (that are universally applicable), but should also pay attention to the circumstances under which these practices are applied within organizations and the type of firms that make use of such practices. The present study assumes that HRM practices can be more or less commitment-oriented depending upon the type of firm and investigates the structuring of practices in female- and male-led firms, also taking into account influences of 'business profile' factors. Hence, this study takes a descriptive rather than a normative approach to HRM, and does not pass judgment on whether commitment-oriented or control-oriented HRM practices are more important for firm performance.

7.2.2 Dimensions of the Commitment-Control Continuum

According to the strategic HRM approach, HRM systems are bundles of coherent (or internally consistent) HRM practices (see MacDuffie, 1995) that are in line with the organizational strategy (i.e., there is an organizational 'fit') (Legge, 1995). It has also been argued that the effect of a bundle of HRM practices is stronger than that of individual practices (MacDuffie, 1995; Ichniowski et al., 1997). However, in practice within firms HRM practices usually do not add up to a coherent system (Duberley and Walley, 1995; Legge, 1995; De Kok et al., 2002). That is why in the present study we also investigate separate HRM practices (in addition to the overall HRM system) that can either be control -or commitment-oriented, leaving room for divergence among these separate HRM dimensions.

As an illustration Table 7.1 presents a range of HRM dimensions, including their control and commitment side. It is a continuum where HRM dimensions (e.g., job scope, job assignment) differ with respect to their commitment-orientation. Table 7.1 is based upon the classification of alternate work systems in Beer et al. (1984) and supplemented with HRM practices as proposed by Arthur (1994)[180].

Most dimensions in Table 7.1 can clearly be divided into a control and commitment 'side'. However, explicitly paying attention to the learning process of employees can

[180] Listings of HRM practices (classified along the lines of commitment versus control) are also provided by Godard (1998) and Boselie (2002). However, the HRM practices listed by Godard (1998) and Boselie (2002) largely overlap with those presented in Table 7.1.

enhance both commitment – employees are involved and willing to make efforts for the organization – and control – learning is a tool for successfully pursuing cost reduction (Boselie, 2002). Also, a highly formalized organizational structure increases control over employees and the production process, but can also enhance and communicate commitment, for instance by providing employee development, and ensuring equal and fair treatment of employees. For structuring purposes in the present study it is assumed that structured learning is more characteristic for commitment and formalization more characteristic for control within HRM.

Table 7.1: HRM dimensions on the Commitment-Control Continuum

HRM Dimension	Commitment	Control
Beer et al. (1984)		
Job scope	Broadly defined jobs	Narrowly defined jobs
Job assignment	Job rotation	Job specialization
Basis of payment	Skills mastered	Job content
Supervision	Indirect (self- or peer supervision)	Direct (close supervision)
Formalization [a]	Flexible, informal organization	Formal procedures
Career development / learning [b]	Structured learning (explicit attention)	'Learning-by-doing'
Employee role	Team member	Individual
Information sharing	Shared data	Ignorance of employees
Status symbols	Differences minimized	Reinforces hierarchy
Employee participation	High	Low
Arthur (1994)		
Decentralization	High	Low
Training	General	Specific
Skill [c]	High share of people engaged in core activities of the firm	Low share of people engaged in core activities of the firm
Social activities	Important	Not important
Average employment costs	High	Low
Employee benefits	Yes / High	No / Low
Incentive payments	No / Low	Yes / High

Notes: [a] Beer et al. (1984, p. 167) distinguishes between 'Assignment of overtime or transfer by rule book' (as traditional work system) and 'Team assigns members to cover vacancies in flexible fashion'. Here a broader perspective is taken extending this distinction to formalization in general. Not only vacancies and/or overtime can be dealt with through more formal or informal practices, this is also true for other organizational practices. For instance, Arthur (1994) refers to formal grievance procedures (from the perspective of due process). [b] In Beer et al. (1984) a distinction is made between 'no career development' and 'concern for learning and growth'. Because in the contemporary knowledge economy learning has become inevitable, here a distinction is made between structured learning (or explicit attention paid to learning) and learning by doing (i.e., learning related to and as part of the job). [c] Discussing skill, Arthur (1994, p. 676) refers to the number of maintenance and craft workers (as a percentage all mill employees). Here we broadened it to people engaged in core activities versus the total number of people employed in a firm.

7.3 Determinants of the Commitment-Orientation of HRM

In Organization Theory and Structural Contingency Theory it is well known that the organizational structure is dependent upon the circumstances, or contextual factors[181]. Hence, management styles tend to vary with environmental characteristics (for example, stability versus uncertainty, technological complexity), as well as with organizational features (for example, firm size, industry or sector, business strategy and firm age). In addition to effects of gender, the present study also investigates the influence of contextual, or business profile, factors on HRM (see Figure 7.1). Because gender is expected to influence the business profile (for example, women tend to start businesses in different sectors and of a different size than men), we control for this in order to single out direct or 'pure' gender effects.

HRM systems are comprised of several HRM dimensions (see Table 7.1)[182]. In most organizations HRM practices do not add up to a coherent package deriving from a long-term coherent management strategy (Duberley and Walley, 1995, p. 905). Hence, a distinction is made between the HRM system and a range of HRM dimensions (making up the HRM system) in businesses of women and men. The present section discusses effects of gender of the entrepreneur on the structuring (i.e., commitment-orientation) of the HRM system and its dimensions.

7.3.1 Gender Differences in HRM

Gender and the HRM system

Many authors refer to more instrumental (transactional), task-oriented, autocratic styles, as 'masculine' leadership styles, and to interpersonally oriented, charismatic (transformational) and democratic styles as 'feminine' leadership styles. Whereas the 'masculine' style often refers to a leadership style that emphasizes maintenance of tasks, the 'feminine' style is based on nurturing of interpersonal relationships (Van Engen, 2001)[183].

A management style is referred to as *participative* or *democratic* if employees are consulted regularly and are able to participate in decision-making. If elements of consultation and delegation of decisions are not present, a management style is

[181] See, for instance, the classic work of Burns and Stalker (1961), Thompson (1967), Lawrence and Lorsch (1967a,b), Woodward (1965), Mintzberg (1979) and the more recent work by Donaldson (for example, 1987, 1994, 1996, 1997).
[182] Because these HRM dimensions are close to the practice of HRM, in the present chapter we will use the terms *practices* and *dimensions* interchangeably.
[183] It should be born in mind that this is stereotyping and that the dichotomies of leadership styles do not necessarily coincide with biological sex.

referred to as *autocratic* (Lewin and Lippitt, 1938). A management style is *transactional* when job performance is viewed as a series of transactions with employees where they are motivated by rewards and punishments, and where the leader derives his/her power by charisma. Instead, a *transformational* leadership style focuses upon getting subordinates to transform their self-interest into the interest of the group through concern for a broader goal, that is, motivation by inclusion, and leader power is based on position (Bass, 1985). An *interpersonally oriented* leadership style includes behavior such as supporting employees, being available, explaining procedures and looking out for their welfare, whereas a *task-oriented* leadership style consists of behavior such as having employees follow rules and procedures, maintaining high performance standards and explicitly formulating work roles and tasks (Bales, 1950; Blake and Mouton, 1964). Rosener (1990) argues that the female leadership style goes beyond the transformational and participative style, to being an *interactive* style, with women positively interacting with their employees, encouraging participation and sharing power and information. In addition to these leadership dichotomies, sometimes the so-called "laissez-faire" style is added indicating an absence of leadership (White and Lippitt, 1960).

The bulk of management and entrepreneurship studies have argued that women tend to engage in what is described as the more 'feminine' management styles (Chaganti, 1986; Rosener, 1990; Eagly and Johnson, 1990; Bass et al., 1996; Rozier and Hersh-Cochran, 1996; Yammarino et al., 1997; Kabacoff, 1998; Verheul et al., 2002). However, contradicting evidence is presented by Sadler and Hofstede (1976), Dobbins and Platz (1986) and Mukhtar (2002).

Business profile factors, such as firm size, may play an important role in explaining the portrayed gender differences in management style – in either direction. In the present study we will control for these 'spurious' effects. When controlled for the business profile (including not only firm size and sector but also other factors, such as time investments and strategy) we expect that HRM in businesses of women is more commitment-oriented than HRM in businesses of men. This is line with most of the studies performed in management and entrepreneurship, arguing that women are likely to practice 'feminine' leadership styles. Because these participative, transformational or people-based styles bear a close resemblance to commitment-oriented HRM system, the following hypothesis is formulated: *HRM systems in female-led businesses are more commitment-oriented than those in male-led businesses*.

Gender and HRM dimensions

Assuming coherency of the HRM dimensions or practices within the HRM system, it would be argued that if the HRM system in businesses of women is commitment-oriented, this is also true for the individual HRM practices (that make up the overall system). However, in practice HRM practices within the firm are not always coherent and the degree of commitment-orientation among the HRM practices within businesses of women and men may diverge. Moreover, with respect to some HRM

practices there is no agreement in the literature on the degree of commitment-orientation within businesses of women (as compared to those of men). For instance, several studies find that female managers are more likely to let employees participate in decision-making (Jago and Vroom, 1982; Neider, 1987; Cromie and Birley, 1991; Stanford et al., 1995; Verheul et al., 2002). However, Mukhtar (2002) finds that, when controlled for firm size and sector, female owner-managers are less likely to consult employees on a regular basis. Another example is the degree of decentralization or delegation of responsibilities in businesses of women. It has been argued that women leaders tend to focus on relationships rather than on hierarchy (Buttner, 2001; Brush, 1992; Belenky et al., 1986; Fischer and Gleijm, 1992) and are more open to criticism and accessible for employees (Stanford et al., 1995). However, Mukhtar (2002) finds that female owner-managers are less inclined to allow their employees to make independent decisions[184]. Furthermore, for other HRM practices, such as job scope and assignment, learning and training, there have been no studies comparing the structuring of (small) businesses of women and men.

Thus, including different HRM practices in the analysis will shed more light upon the effect of gender of the entrepreneur on the commitment-orientation of HRM and also enables investigation of the degree to which there is internal consistency among HRM practices (i.e., whether they point in the same direction and are either all commitment-oriented or all control-oriented).

7.3.2 Business Profile Factors as Controls

The following controls are included in the present study: firm size, sector, business strategy, firm age and time invested in the business. These factors are likely to influence the way in which the firm is structured. Also, female and male entrepreneurs are expected to differ with respect to these business profile factors. Controlling for these factors enables investigation of the 'real' gender effect on the shaping of HRM.

Firm size

Firm size is likely to have implications for HRM. Mintzberg (1979) already argued that with the increasing size of firms, jobs become more specialized, the span of control increases, a more formalized structure develops and there is a higher need for decentralization. More recent studies in entrepreneurship also show that firm size influences the shaping of HRM practices (Hornsby and Kuratko, 1990; Deshpande and Golhar, 1994; Marlow and Patton, 1993; Jackson et al., 1989; De Kok and Uhlaner, 2001)[185]. Also, it has been argued that women tend to have smaller firms than their

[184] Even at larger business sizes female owner-managers tend not to delegate and keep control over the business operations (e.g., Mukhtar, 2002).
[185] However, Golhar and Deshpande (1997) and Deshpande and Golhar (1994) find that both large and small (manufacturing) firms rank open communication, training of new employees, and employee participation initiatives among the most important HRM practices.

male counterparts (Carter et al., 1997; Kalleberg and Leicht, 1991; Fischer et al., 1993; Verheul and Thurik, 2001).

Sector: services versus non-services

Firms in different sectors may be characterized by different employment cultures (Curran et al., 1993). In service firms the relationship between customers and employees is the key to the production process. Employee commitment here is important for customer loyalty and satisfaction and, accordingly, for performance (Heskett et al., 1997; Peccei and Rosenthal, 1997; Hall, 1993; Maister, 1997; Mowday, 1998; Ram, 1999). Also, female entrepreneurs are more likely than men to operate professional service firms than male entrepreneurs (OECD, 1998b; Van Uxem and Bais, 1996; U.S. Small Business Administration, 1995).

Business strategy

It has been argued that business strategy influences the type of leadership or, in general the shaping of HRM practices (Schuler and Jackson, 1987; Lengnick-Hall and Lengnick-Hall, 1988; Youndt et al., 1996). Walton's (1985) distinction between control and commitment strategies shows some resemblance to Porter's (1980, 1985) strategies of cost reduction, focus and differentiation[186]. According to Youndt et al. (1996) cost, quality and flexibility strategies have important implications for the shaping of HRM systems. Female and male entrepreneurs pursue different goals, where women tend to emphasize quality rather than quantity and operate in niche markets producing tailor-made goods and services (Chaganti and Parasuraman, 1996; Brush, 1992; Verheul et al., 2002).

Growth strategy

In addition to the focus of business strategy, the extent to which firms pursue growth may influence the shaping of HRM practices. It is argued that the pursuit of a growth strategy is related to more formal and professionally developed HRM practices (Thakur, 1999; Matthews and Scott, 1995). On the other hand, there is a higher need for decentralization and delegation of responsibilities in growing firms. Female entrepreneurs are more likely than their male counterparts to strive after goals that are not directly related to growth and economic performance (Brush, 1992; Du Rietz and Henrekson, 2000; Kalleberg and Leicht, 1991; Rosa et al., 1996) and exhibit low growth rates (Fischer et al., 1993; Hulshoff et al., 2001).

[186] According to Guthrie et al. (2002) firms adopting a differentiation strategy also aim for high involvement work practices.

Firm age

Firm age is likely to influence the organization of a firm. Several scholars have argued that as firms move through various stages of development, differing problems must be addressed, resulting in the need for different management skills, priorities, and structural configurations (Greiner, 1972; Churchill and Lewis, 1983; Kazanjian, 1988; Kimberly and Miles, 1980; Smith, Mitchell and Summer, 1985). Verheul et al. (2002) find that businesses of women are younger than those of men, in particular in those sectors where women only recently started to enter self-employment.

Time investments

Time invested in the business (i.e., working fulltime or part-time) may also influence the shaping of HRM practices. Commitment (in the form of decentralization) may be more important in businesses where the entrepreneur, or owner-manager, is not always present to control the production process. Also, it is argued and found that women tend to invest less of their time in the business (are more likely to be part-time entrepreneurs) (Brush, 1992; Goffee and Scase, 1995; Verheul et al., 2004c).

7.4 Methodology

7.4.1 Data Collection and Sample Characteristics

To test the hypotheses, a sample is drawn from a panel of Dutch small firms participating in a longitudinal study conducted by the research institute EIM Business and Policy Research. Every four months approximately 2,000 Dutch entrepreneurs participate in this panel, which is used for both cross-sectional and longitudinal research. The participants in the panel are selected on the basis of a representative sample drawn from a Dutch database based on information gathered by the Dutch Chamber of Commerce. The panel study registers two types of data. The first type concerns basic information about the business and its owner, i.e., the entrepreneur. These data are renewed every year because of their short-term character and are collected using a questionnaire with fixed questions. The second type of information relates to more specific information regarding performance, attitudes and behaviors (often policy-related information) of the Dutch small and medium-sized firms and is collected three times a year using telephone interviews.

Thus far we have not paid attention to the definition of an entrepreneur in the study. Usually, the assumption is that a small firm has a single owner who is also the general director or manager of the firm. Results from the EIM panel suggest that this assumption is only valid for about 50 percent of all enterprises with less than 100 employees: 35 percent has two owners, and 10 percent has more than two owners. EIM aims at interviewing the general director or manager, which is usually the owner

or one of the owners. For this study, gender is defined as the gender of the respondent, who is predominantly the owner or the managing director of the business.

For the present study use is made of a selection of questions from the EIM panel, concerning both human resource management issues and other information on the business and its entrepreneur. The dependent variable HRM refers to groups of items or questions derived from the panel questionnaire. Measurement of HRM is largely based on self-ratings (or self-perceptions) of the respondents. Question items will be grouped, that is, scales of HRM activities will be formed, through factor analysis (see Table 7.3).

Table 7.2 gives a description of the independent variables[187]. The independent variables (gender and the business profile factors) are selected from earlier panel rounds than the dependent variable(s) (human resource management) to ensure an adequate direction of the relationship between human resource management and the explanatory variables in the empirical analysis.

[187] Because information was gathered in different rounds, the number of respondents for which data is available, differs per variable. Obviously, this means that the more variables are used, the fewer observations are available.

Table 7.2: Description of independent variables

Variable	Description	Measurement	*N*	Mean	Std. dev
Gender	Is the entrepreneur female or male?	Dummy variable: female = 1 and male = 0	3431	0.12	0.33
Firmsize	Number of people employed in the firm[a]	Max = 2608, min = 0	2365	34.73	77.02
Firmage	Number of years the firm has been in existence	Response categories: 1=0-2 years, 2=3-5 years, 3=6-10 years, 4= more than 10 years	2404	3.45	0.87
Hours	Number of hours per week invested in the business	Response categories: 1=1-20 hours, 2=21-40 hours, 3=41-60 hours, 4= more than 60 hours	1491	3.11	0.64
Service	Is the firm located in the service sector?	Dummy variable: services = 1 and non-services = 0	2063	0.44	0.50
Lowprice	To what extent adopts the business a low-price strategy?	Response categories: 1=none, 2= limited extent, 3=some extent, 4=large extent, 5=very large extent	2135	2.63	1.15
Quality	To what extent adopts the business a high-quality strategy?	Response categories: 1=none, 2=limited extent, 3=some extent, 4=large extent, 5=very large extent	2256	4.30	0.83
Focus	To what extent adopts the business a (differentiation) focus strategy?	Response categories: 1=none, 2=limited extent, 3=some extent, 4=large extent, 5=very large extent	2151	3.67	1.17
Growth	To what extent adopts the business a growth strategy?	Response categories: 1=none, 2=limited extent, 3=some extent, 4=large extent, 5=very large extent	2368	2.26	0.70

[a] The number of people employed includes the owner(s), manager(s), working family members, fulltime and part-time employees as well as helpers or assistants. Because we expect that the effect of increasing size on human resource management decreases, the logarithm of the number of employees is included as a measure of firm size in the analyses. Six firms have no employees. Because the logarithm of employed persons is used, these firms are (automatically) excluded from the analysis.

The total sample amounts up to 3755 respondents, of which for 3431 respondents it is known whether the person is male or female: 3015 are male and 416 female. With a percentage of approximately twelve percent, female entrepreneurship is relatively low, especially as compared to the national average of around one-third.[188] This relatively low percentage of women may be largely due to stratification of the EIM panel data to include a minimum number of respondents per size class (in terms of persons employed). For this study's sample, the distribution according to size class is as follows: 0-10 employees (37, 9 percent), 11-50 employees (36, 8 percent) and 51 or more employees (25, 3 percent), the latter category of which four percent has more than 100 employed persons[189]. An additional explanation may be that women are less likely to participate because of the demanding combination of work and household responsibilities.

For the final empirical analysis (see Tables 7.5 and 7.6) a sub-sample of 555 respondents (of whom 524 are male and 31 are female) is used. For these respondents all information on the business profile and the HRM variables is available. All 555 respondents are either owner-(manager) or managing director of the business and are, accordingly, likely to have an important influence on the structuring of the business.

The relatively low percentage of women in the sub-sample (about 6 percent) vis-à-vis that in the initial (N=3755) sample (about 12 percent) may be due to the fact that the N=555 sample is characterized by a lower percentage of service firms (38 percent in the N=555 sample versus 45 percent in the N=3755 sample). Moreover, the N=555 sample is characterized by a lower proportion of very small firms (with less than 10 employees): this size class amounts up to about 27 percent in the N=555 sample and to about 38 percent in the N=3755 sample. Since women are more likely to operate small firms and service firms than men, this may explain their lower share in the N=555 sample. In addition, it is possible that women are less likely to answer the HRM questions than men, although we do not have evidence supporting such a selection bias.

7.4.2 Data Analysis

First, factor analysis is used to develop more meaningful HRM scales from the sets of questions about the organization of the business asked to the (owner)-manager in the EIM panel[190]. Use is made of Principal Components Analysis with a Varimax rotated

[188] The female share in self-employment in the Netherlands is derived from OECD Labor Force Surveys (see www.oecd.org).
[189] The national average is around one percent of businesses with over 100 employees (Peeters and Bangma, 2003).
[190] Note that from the large range of questions on organization (or HRM) in the EIM panel only those questions are selected that correspond with one of the dimensions proposed in Table 7.1. Factor analysis is used to identify groups of HRM practices (from the selected questions). Hence, the selected HRM dimensions have a theoretical foundation and are derived empirically using factor analysis.

solution to identify independent factors, or HRM dimensions. The constructed HRM scales are included in further analyses investigating the influence of gender on the commitment-orientation of HRM.

The effect of gender on HRM (both the HRM system and separate HRM dimensions) is tested using regression analyses, including both the business profile variables and gender. Furthermore, indirect gender effects on HRM (through the business profile factors) are investigated combining correlation and regression analysis.

7.5 Results

7.5.1 Factor Analysis and Scale Formation HRM

Table 7.3 presents a seven-factor solution for the different HRM items included in the questionnaire[191]. The first factor appears to consist of items pertaining to the dimensions of *informal structure* and *learning*. Based on the fact that these are two separate dimensions in the literature (see Table 7.1) and they are fairly easy to interpret on the basis of their content, they are included separately in further analysis. Factor two clearly shows the *decentralization* dimension. Factors three to seven show the *general training*, *broadly defined jobs*, *employee participation*, *indirect supervision* and *task differentiation* dimensions, respectively. The reliability of the *broadly defined jobs* and *task differentiation* dimension is relatively low (with a Cronbach Alpha of 0.45 and 0.31, respectively). That is why – instead of the identified factors – the separate items: '*Employees' jobs are interchangeable*' and '*Employees have multiple tasks*' are included in the analysis to represent the dimensions *broadly defined jobs* and *task differentiation*, respectively. From a content-perspective these items seem to be most closely connected to the two HRM dimensions. Regarding the other factors, including separate items – instead of the constructed dimensions – in the analysis did not yield additional information.

[191] Note that for 833 respondents the information on HRM (i.e., all the items included in the factor analysis) is available.

Table 7.3: Factor analysis solution, PCA, Varimax rotated (*N*=833)

Dimensions and items	Factors 1	2	3	4	5	6	7
Participation							
1: Employees involved in recruitment/selection	0.20				**0.81**		
2: Employees involved in employee assessment					**0.86**		
3: Employees are involved in decision-making	0.43	0.31		0.20	0.26	-0.16	
Decentralization							
1: Employees determine their own decisions [a]		**0.82**				0.14	
2: Employees make their own decisions [a]		**0.84**				0.13	
3: Employees determine their own work pace		**0.68**				0.20	
4: Employees control their own work	-0.12	0.36		-0.37		-0.20	0.34
Indirect supervision							
1. Employees work independently		0.18				**0.82**	
2: Employees fulfill their tasks without direct supervision		0.29				**0.77**	
Informal structure							
1: There are no written rules/procedures	**-0.58**		-0.18	0.13			0.11
2: Consultation does not occur via fixed rules	**-0.57**		-0.17	0.35			0.15
3: Jobs/tasks (contents) are not written down	**-0.71**			0.26			0.15
Broadly defined jobs							
1: Employees each do not have specific tasks				**0.53**			
2: Order of tasks is not determined in advance		0.28		**0.60**			0.14
3: Outcomes are not specified in advance	-0.34			**0.56**		0.22	
4: Employees' jobs are interchangeable				**0.55**	-0.15		
Task differentiation							
1: Work is diverse				0.12		0.14	**0.59**
2: Employees have multiple tasks							**0.76**
Learning							
1: Employees are provided with feedback	**0.52**	0.19				-0.11	0.32
2: Explicit attention for employee learning	**0.59**					0.13	0.17
3: Number of employees with training	**0.64**		0.17		0.28		
General training							
1: Management training	0.30		**0.64**		0.19		
2: Social and individual development training	0.18		**0.85**				
3. Team building training			**0.83**	-0.11			
Eigenvalues	3.65	2.81	1.66	1.53	1.25	1.19	1.07
Cronbach's Alpha [b]	0.58 0.69	0.76	0.72	0.45	0.72	0.67	0.31

All underlying items are questions with three response categories where a higher score represents a higher commitment-orientation. Only factor loadings >=0.1 are presented. Factor loadings >=0.5 are highlighted in bold. Except for 'broadly defined jobs' and 'task differentiation', items in bold are included for the construction of the commitment variables. [a] The distinction between these two items is not entirely clear. The first item may refer to decision making at a higher hierarchical level where employees make their own decisions and determine what kind of decisions they can make themselves. Including both items in the analysis is justified by their similar factor loadings. [b] Cronbach's Alpha is computed including items per factor with a loading of >=0.5. Exceptions include the first factor, where two HRM dimensions are constructed: informal structure (Alpha=0.58) and learning (Alpha=0.69) and Factors 4 and 7 (with a low Cronbach's Alpha's). Factor 4 (broadly defined jobs) will be made up of the last item '*Employees' jobs are interchangeable*' only, and Factor 7 (task differentiation) will be made up of the second item '*Employees have multiple tasks*' only. Selection of these items is content-based.

The results of the factor analysis overlap with several of the HRM dimensions in Table 7.1 – based upon the work of Beer et al. (1984) and Arthur (1994)[192]. Also, they correspond with some of the classical measures in the organization theory. For example, Hage and Aiken (1967) measured two dimensions of centralization: participation in decision-making and hierarchy of authority[193]. Moreover, in the same study formalization is operationalized measuring job codification and rule observation. Pugh et al. (1968) defined and operationalized several dimensions of the organization structure, including specialization, formalization and centralization[194].

Following the dimensions in Table 7.3, eight commitment variables are constructed as an unweighted average of the underlying items. These commitment variables are presented in Table 7.4. Also, a *general* commitment variable (*COMMITM*) is constructed as an unweighted average of the eight *specific* commitment variables.

7.5.2 Descriptive and Bivariate Statistics

Table 7.5 presents the correlation coefficients between the major variables in this study. Reviewing the correlations between the business profile variables and gender in Table 7.5, we see that gender correlates only with the business profile factors: firm size (r=-0.12, p<0.01) and firm age (r=-0.08, p<0.05). Hence, from a 'bilateral' perspective women seem to have smaller and younger businesses. In addition, a weak correlation is found for focus strategy (r=-0.08, p<0.10). Thus, there may be an indirect effect of gender of the entrepreneur on the commitment-orientation of HRM through these factors. Also, gender is negatively correlated with the commitment dimensions task differentiation (*TASKDIFF*) (r=-0.11, p<0.01) and decentralization (*DECENTR*) (r=-0.09, p<0.05), suggesting a control orientation of women on these dimensions.

[192] And which shows overlap with listings of Godard (1998) and Boselie (2002).
[193] The participation in decision-making items include the following: participation in the decision to adopt new policies, hire new staff and promotion. The hierarchy of authority items include: the extent to which action takes place before a supervisor approves a decision, the degree to which own decisions of staff are encouraged, the extent to which higher staff has to be consulted for small matters, the extent to which permission has to be asked to the boss before action can be undertaken, and whether a decision needs approval of the direct supervisor (see Hage and Aiken, 1967, p. 78/9).
[194] For measurement of these dimensions, see Pugh et al. (1968), Appendix A, C and D.

Table 7.4: Description of commitment variables

Variable	Description	Measurement
PARTICIP	Degree to which employees can influence strategic decision-making, surpassing their immediate tasks	Unweighted average of two items: 'Employees involved in recruitment/selection'; 'Employees involved in employee assessment'
DECENTR	Degree to which employees are able to fulfill their tasks autonomously	Unweighted average of three items: 'Employees determine their own decisions'; 'Employees make their own decisions'; 'Employees determine their own work pace'
INDIRECT	Degree to which supervision is indirectly structured	Unweighted average of two items: 'Employees work independently'; 'Employees fulfill their tasks without direct supervision'
INFORMAL	Degree to which the business is informally structured	Unweighted average of three items: 'There are no written rules/procedures'; 'Consultation does not occur via fixed rules'; 'Jobs/tasks (contents) are not written down'
BROADJOB	Degree to which jobs are broadly defined	Based upon one item: 'Employees' jobs are interchangeable'
TASKDIFF	Degree to which tasks are differentiated	Based upon one item: 'Employees have multiple tasks'
LEARN	Degree to which explicit attention is paid to the learning of employees	Unweighted average of three items: 'Employees are provided with feedback'; 'Explicit attention for employee learning'; 'Number of employees with training'
TRAINGEN	Degree to which training is general	Unweighted average of three items: 'Management training'; 'Social and individual development training'; 'Team building training'
COMMITM	Degree to which HRM systems are commitment-oriented	Unweighted average of the eight commitment HRM variables PARTICIP; DECENTR; INDIRECT; INFORMAL; BROADJOB; TASKDIFF; LEARN; TRAINGEN

[a] All items have three response categories (ascending with respect to commitment-orientation). See Table 7.3 for details on construction of the commitment variables.

Table 7.5: Pearson correlation between all variables in the sample[a]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. gender	1																	
2. firmsize[b]	-0.12***	1																
3. firmage	-0.08**	0.25***	1															
4. hours	-0.05	-0.02	-0.07	1														
5. service	0.04	-0.15***	-0.04	-0.09**	1													
6. lowprice	-0.03	0.05	-0.09**	0.005	-0.05	1												
7. focus	-0.08**	0.01	0.006	0.02	0.06	0.06	1											
8. quality	-0.07	0.07	-0.05	0.07	-0.02	0.04	0.33***	1										
9. growth	0.05	0.10**	-0.22***	0.06	-0.001	0.07	0.05	0.12***	1									
10. PARTICIP	-0.06	0.30***	0.05	-0.06	-0.008	0.07	0.04	-0.001	0.16***	1								
11. DECENTR	-0.09**	-0.02	-0.04	-0.09**	0.14***	-0.04	0.10**	0.06	0.007	-0.03	1							
12. INDIRECT	-0.06	-0.14***	-0.01	0.000	0.04	-0.03	0.004	0.08	-0.005	-0.13***	0.33***	1						
13. INFORMAL	-0.005	-0.42***	-0.06	0.02	0.04	-0.02	-0.02	-0.03	-0.14***	-0.23***	0.006	0.06	1					
14. BROADJOB	-0.04	-0.06	-0.08	-0.01	-0.04	0.07	0.11***	0.11**	0.004	-0.10**	0.09**	0.07	0.18***	1				
15. TASKDIFF	-0.11***	-0.07	-0.02	0.06	0.07	0.005	0.07	0.07	0.03	-0.09**	0.07*	0.12***	0.14***	0.12***	1			
16. LEARN	-0.02	0.47***	0.03	-0.12***	0.12***	0.01	0.08*	0.04	0.16***	0.30***	0.13***	-0.004	-0.44***	-0.03	0.003	1		
17. TRAINGEN	-0.04	0.29***	0.01	0.01	0.01	0.06	-0.02	-0.04	0.15***	0.15***	0.07*	0.05	-0.36***	-0.10**	0.05	0.34***	1	
18. COMMITM	-0.14***	0.06	-0.05	-0.05	0.12***	0.04	0.12***	0.10**	0.10**	0.19***	0.55***	0.48***	0.19***	0.47***	0.51***	0.33***	0.34***	1
N	555																	
Mean	0.06	2.95	3.61	3.16	0.38	2.67	3.75	4.36	2.30	1.36	2.28	2.63	1.83	2.24	2.34	2.51	2.00	2.15
Std. Deviation	0.23	1.07	0.74	0.58	0.49	1.07	1.04	0.71	0.65	0.48	0.63	0.55	0.63	0.70	0.67	0.48	0.58	0.23

* Coefficient is significant at the 0.10-level (2-tailed); ** Coefficient is significant at the 0.05-level (2-tailed); *** Coefficient is significant at the 0.01-level (2-tailed). [a] N=555, male: 524 and female: 31. [b] Firm size is measured as the logarithm of the number of employees.

The high correlation of firm size with firm age (r=0.25, p<0.01) can easily be explained, as younger firms tend to be small. In addition, the high correlation between pursuing focus and quality strategies (r=0.33, p<0.01) comes as no surprise as these strategies often go hand-in-hand.

For the correlations between the business profile and commitment variables, the high correlations of firm size with attention paid to learning (*LEARN*) (r=0.47, p<0.01), informal structure (*INFORMAL*) (r=-0.42, p<0.01), employee participation (*PARTICIP*) (r=0.30, p<0.01) and general training (*TRAINGEN*) (r=0.29, p<0.01) stand out. Hence, from a 'bilateral' perspective, large businesses are characterized by more attention for learning, a more formal structure, a higher degree of employee participation and more general training than small firms.

From the last row in Table 7.5 we see that the degree to which an HRM system is commitment-oriented (*COMMITM*) is related to gender (r=-0.14, p<0.01), service sector (r=0.12, p<0.01), focus strategy (r=0.12, p<0.01), quality strategy (r=0.10, p<0.05) and growth strategy (r=0.10, p<0.05).

Investigating the correlations between the commitment variables in Table 7.5, we see that, in general, there is a moderate degree of correlation between the *specific* commitment variables. Most strongly associated commitment variables include the relationship of informal structure (*INFORMAL*) with attention paid to learning (*LEARN*) (r=-0.44, p<0.01); the relationship of general training (*TRAINGEN*) with both informal structure (INFORMAL) (r=-0.36, p<0.01) and attention paid to learning (*LEARN*) (r=0.34, p<0.01); and that between decentralization (*DECENTR*) and indirect supervision (*INDIRECT*) (r=0.33, p<0.01). Although we would expect that all commitment variables are positively correlated, this is not the case. This is an indication of a lack of coherency within the HRM system for the firms in the sample.

7.5.3 Regression Analysis

Table 7.6 presents the results of the regression analyses, distinguishing between explaining *specific* commitment variables (*PARTICIP*, *DECENTR*, etc.) and the *general* commitment variable, HRM system (*COMMITM*). A distinction is made between taking into account all variables (gender and the business profile variables) in the first row, business profile variables only in the second row and gender only in the third row.

Table 7.6: Regression analyses explaining the commitment-orientation of HRM[a]

HRM	Regression	Constant	Gender	Business Profile								Adjusted R^2	F-stat
				firm*size*	firm*age*	hours	Service	lowprice	quality	focus	growth		
PARTICIP	All variables	0.92***	-0.08	0.13***	0.002	-0.05	0.03	0.02	-0.03	0.02	0.10***	0.103	8.10***
	Business profile	0.89***	.	0.13***	0.004	-0.05	0.03	0.02	-0.03	0.02	0.10***	0.104	9.01***
	Gender	1.37***	-0.13	.	.	.	.	.	.	.	.	0.002	2.15
	$\Delta R^{2\,b}$		*0.001*				*0.114*						
DECENTR	All variables	2.46***	-0.27**	-0.001	-0.04	-0.10**	0.16***	-0.03	0.03	0.05*	0.003	0.033	3.07***
	Business profile	2.37***	.	0.005	-0.04	-0.10**	0.16***	-0.03	0.03	0.05*	-0.003	0.025	2.79***
	Gender	2.29***	-0.25**	.	.	.	.	.	.	.	.	0.006	4.56**
	$\Delta R^{2\,b}$		*0.009*				*0.040*						
INDIRECT	All variables	2.57***	-0.17*	-0.08***	0.02	-0.01	0.02	-0.01	0.08**	-0.02	0.01	0.019	2.17**
	Business profile	2.52***	.	-0.08***	0.02	-0.006	0.02	-0.01	0.08**	-0.02	0.006	0.015	2.07**
	Gender	2.64***	-0.14	.	.	.	.	.	.	.	.	0.002	1.85
	$\Delta R^{2\,b}$		*0.005*				*0.031*						
INFORMAL	All variables	2.65***	-0.13	-0.25***	0.02	0.01	-0.02	0.003	0.01	-0.008	-0.09**	0.177	14.22***
	Business profile	2.60***	.	-0.25***	0.03	0.01	-0.02	0.003	0.01	-0.006	-0.09**	0.176	15.80***
	Gender	1.83***	-0.01	.	.	.	.	.	.	.	.	-0.002	0.02
	$\Delta R^{2\,b}$		*0.002*				*0.190*						
BROADJOB	All variables	2.12***	-0.11	-0.04	-0.06	-0.03	-0.07	0.04	0.08*	0.06*	-0.02	0.017	2.08**
	Business profile	2.09***	.	-0.04	-0.06	-0.03	-0.07	0.04	0.08*	0.06*	-0.02	0.018	2.24**
	Gender	2.25***	-0.12	.	.	.	.	.	.	.	.	0.000	0.85
	$\Delta R^{2\,b}$		*0.001*				*0.032*						
TASKDIFF	All variables	1.92***	-0.33***	-0.05	0.001	0.06	0.09	0.001	0.04	0.03	0.03	0.016	2.01**
	Business profile	1.81***	.	-0.04	0.006	0.07	0.08	0.003	0.05	0.03	0.03	0.005	1.35**
	Gender	2.36***	-0.32***	.	.	.	.	.	.	.	.	0.011	6.88***
	$\Delta R^{2\,b}$		*0.013*				*0.020*						
LEARN	All variables	1.98***	0.06	0.23***	-0.05*	-0.08***	0.17***	-0.009	-0.01	0.03*	0.07***	0.276	24.46***
	Business profile	2.00***	.	0.23***	-0.05*	-0.08***	0.18***	-0.01	-0.01	0.03*	0.08***	0.277	27.48***
	Gender	2.52***	-0.03	.	.	.	.	.	.	.	.	-0.002	0.13
	$\Delta R^{2\,b}$		*0.001*				*0.288*						
TRAINGEN	All variables	1.53***	-0.05	0.17***	-0.03	0.02	0.07	0.02	-0.07*	-0.005	0.11***	0.100	7.77***
	Business profile	1.52***	.	0.17***	-0.03	0.02	0.07	0.02	-0.07*	-0.004	0.11***	0.100	8.72***
	Gender	2.01***	-0.10	.	.	.	.	.	.	.	.	0.000	0.93
	$\Delta R^{2\,b}$		*0.000*				*0.112*						
COMMITM	All variables	2.02***	-0.14***	0.01	-0.02	-0.02	0.06***	0.004	0.02	0.02*	0.03*	0.049	4.14***
	Business profile	1.97***	.	0.02	-0.01	-0.02	0.06***	0.004	0.02	0.02**	0.03	0.032	3.30***
	Gender	2.16***	-0.14***	.	.	.	.	.	.	.	.	0.017	10.72***
	$\Delta R^{2\,b}$		*0.018*				*0.045*						

Coefficient is significant at 0.10-level (*), 0.05-level (**), 0.01-level (***). [a] *N*=555 (male=524, female=31). [b] Change in R^2 when adding this variable(s) last to the model.

Direct gender effects

From Table 7.6 we see that – when controlled for the business profile factors (in the first row) – seven of the eight gender effects on the specific commitment variables are negative, of which three are significantly negative[195]. None are significantly positive. On the whole, the effect of gender on the commitment-orientation of the HRM system (*COMMITM*) is significantly negative. This implies a relative control-orientation of women regarding the structuring of HRM practices (as opposed a hypothesized commitment-orientation). More specifically, there is a control-orientation of women with respect to the HRM dimensions task differentiation (*TASKDIFF*) and decentralization (*DECENTR*). With respect to indirect supervision (*INDIRECT*) there is some indication of a control-orientation. It seems that, as compared to male-led businesses, in female-led businesses there is less task differentiation, a higher degree of centralization and (possibly) a more direct supervision of employees.

Influence of the business profile and indirect gender effects

The business profile factor 'service sector' appears to positively influence the commitment-orientation of HRM practices (*COMMITM*). Moreover, there are weak effects of focus and growth strategies (both significant at the 10 percent significance level only). The absence of an effect of firm size on the commitment-orientation of the HRM system is likely to be due to the contradicting effects of firm size on the specific commitment variables (see Table 7.6), of which three are positive (*PARTICIP*, *LEARN* and *TRAINGEN*) and two are negative (*INFORMAL*, and *INDIRECT*), canceling out its overall effect on the HRM system as a whole.

In addition to firm size, other business profile factors also influence specific commitment variables. Most importantly, time invested in the business negatively affects decentralization (*DECENTR*) and learning (*LEARN*); service firm positively influences decentralization (*DECENTR*) and learning (*LEARN*); quality strategy positively influences indirect supervision (*INDIRECT*); and growth strategy positively influences employee participation (*PARTICIP*), learning (*LEARN*) and general training (*TRAINGEN*) and negatively influences informal structure (*INFORMAL*).

Although gender is significantly correlated with firm size and age (see Table 7.5), these variables do not influence the commitment-orientation of the HRM system (*COMMITM*). Also, Table 7.6 shows that leaving out either gender or the business profile variables does not produce any disturbing effects. Hence, there is no evidence of indirect gender effects (through the business profile) on HRM. Only for the specific commitment variable indirect supervision (*INDIRECT*) the gender effect is not similar when comparing regression results including all variables (in the first row) and gender only (in the third row). When controlled for the business profile factors in the first

[195] Although one effect, that on indirect supervision, is only significant at the 0.10 level.

row, there is some evidence of a gender effect (albeit on a 10 percent significance level) on indirect supervision (*INDIRECT*).

7.6 Conclusion

Making use of several HRM dimensions on the Commitment-Control Continuum, constructed using EIM panel data, the present study sets out to investigate gender effects on the degree to which HRM practices are commitment-oriented. The present study is new as it focuses on gender differences in HRM within the context of small firms. It is found that gender plays only a small role in explaining the commitment-orientation of HRM. Of the eight specific commitment variables, gender influences task differentiation (*TASKDIFF*), decentralization (*DECENTR*), and – possibly – indirect supervision (*INDIRECT*). It seems that the organizational structure in female-led firms is more centralized, where employees are more likely to have fixed jobs, and there is a more direct supervision of employees (than in male-led firms). This is a counterintuitive finding because it is usually assumed that female managers or entrepreneurs are more democratic (less autocratic) than their male counterparts. In addition, a gender effect appears for the commitment-orientation of the HRM system (*COMMITM*). However, this effect of gender on the commitment-orientation of HRM should be interpreted with caution, in particular, since most of the effect is due to gender differences with respect to the specific commitment dimensions: task differentiation, degree of centralization and supervision. On the other hand, although not significant, gender effects on four of the other commitment variables (*PARTICIP*, *INFORMAL*, *BROADJOB* and *TRAINGEN*) are also negative, which may be an indication of a broader control-orientation of women in HRM.

The gender effects found in this study are direct effects, rather than indirect effects, the latter working through business profile factors, such as firm size, age, sector, strategy and time invested in the business (see Figure 7.1). This means that when the business profiles of female- and male-led businesses are similar, there probably remains a gender difference regarding the commitment-orientation of the HRM system.

7.7 Discussion

The results of the present study do not support the general assumption that women are more commitment-oriented than men when managing employees. Rather, it provides some support for the opposite effect that women are more control-oriented than men. Such a counterintuitive finding may be explained by gender differences in risk taking propensity (for example, Verheul and Thurik, 2001; Van Uxem and Bais, 1996). If women are less willing to take risk than men, this may, to some extent, explain why they are less willing to involve others in the decision-making process as relying upon

others means giving up control. Practicing direct control over others reduces uncertainty. Also, women may be more likely to be perfectionists, having relatively high standards that do not only apply to themselves, but also to their personnel. In this setting controlling employees is a way of verifying that employees do a good, or rather a perfect, job. In addition, there may be societal pressures affecting the management style of women. Because there still are relatively few women in management positions, they may feel a need to prove themselves.

The control-orientation of women in this study corresponds with the findings of Mukhtar (2002, p. 305/6), arguing that female owner-managers are "*more autocratic, less consultative, less willing to allow employees to make independent decisions and more reluctant to delegate authority to others*". Mukhtar (2002, p. 307) describes the female management style as "*handling everything myself*". Consistently, Piercy et al. (2001) show that female sales managers use higher levels of behavior control when they manage teams[196].

Again, the results of this study should be interpreted with caution. There may be intermediating factors that are not controlled for in the present study and that are associated with gender. For example, women may be involved in specific types of businesses. Contingency control theory argues that organizational structuring and type of control within a firm is dependent upon factors, such as type of technology (for example, routine versus non-routine) involved, firm size as well as environmental uncertainty[197]. Although the present study controls for firm size, it may be that the gender effects can be ascribed to the fact that women are often less likely to be involved in high-tech businesses, and in sectors with unstable environments, whereas these – in turn – may positively influence the commitment-orientation in the organizational structure. A business in an uncertain environment should maintain a flexible organizational structure to adequately adapt to changing market circumstances. This flexibility is more likely to be feasible when a business focuses on commitment in the structuring of HRM practices than when the focus is on control. To shed more light upon the direct gender effect on the structuring of HRM practices, further research should explore these mediating effects of environmental and technological complexity.

Further research should also focus on the influence of the other factors, such as firm size, on the commitment-orientation of HRM. In the present study no size effect was found as the overall effect of firm size on the commitment-orientation of the HRM system was cancelled out by contradicting effects on the HRM dimensions. In the present study different HRM practices are added up to construct the aggregate measure of HRM *system*. However, as noted in the theoretical section, in most firms HRM

[196] Sales management control strategy in this study has been defined, following Anderson and Oliver (1987), as the extent to which sales managers perform several monitoring, directing, evaluating and rewarding activities in carrying out their management responsibilities (Piercy et al., 2001, p. 39/40).
[197] See Daft (1998, p. 354) largely based on Woodward's (1965) technological complexity scale.

practices do not form a coherent system. This is confirmed by the relatively low, and in some cases even negative, correlations among the 'specific' HRM variables. Hence, researchers should be made aware that the use of aggregate measures of HRM practices may lead to misinterpretation of findings.

Based upon the views of Beer et al. (1984), Walton (1985) and Arthur (1992, 1994), the present study implicitly assumes that control and commitment are two sides of a single dimension. However, it is important to investigate whether, indeed, commitment and control are two extremes of one continuum[198]. The study by Piercy et al. (2001) concludes that, next to displaying a higher level of behavioral control, female sales managers also create more organizational commitment in their teams. This may be an indication that control and commitment go hand in hand rather than being exclusive. Moreover, a distinction should be made between different types of control and/or commitment. Although several scholars have proposed different types of control (for example, Merchant, 1985; Harzing, 1999; Snell, 1992; Burton, 2001), future research should investigate commitment types. In addition, human resource management systems may be classified along different lines. Although the distinction between a focus on control and commitment is a comprehensible one, it is likely that in practice more sophisticated employment models can be identified. For instance, Burton (2001) distinguishes between five employment models based on the structuring of three human resource dimensions: attachment, coordination/control and selection.

The present study is based on EIM panel data, of which a sample is drawn including information on both the dependent variable (HRM) and the independent variable (business profile). Because the EIM panel data are stratified according to size class, and the data are more skewed towards the larger small businesses, relatively few female entrepreneurs are included in the sample. Also, most of the HRM practices are measured through self-reports of the respondents (owner-managers), rather than using objective criteria. The sample includes Dutch female and male entrepreneurs. Because it can be expected that gender differences in leadership or management styles differ internationally (Osland et al., 1998; Gibson, 1995), the results may not be generally applicable. For instance, Hofstede (2001) finds that, as compared to other countries, the Netherlands are characterized by a relatively low degree of 'masculinity'. The relative 'feminine' culture in the Netherlands is likely to affect the extent to which women and men differ with respect to management of their employees.

In spite of these limitations, the results of this study are interesting from an exploratory viewpoint, investigating gender differences in management in a relatively new field, that is, within small firms, and providing some fruitful directions for future research in this area.

From a more practical perspective, if it indeed appears (also in follow-up research) that women have difficulty delegating responsibilities to their employees, holding on

[198] See also Boselie (2002, p. 41).

to a rigid and centralized structure this may imply that female-led firms will encounter problems when pursuing a growth strategy[199]. In addition, it should be noted that the emphasis of women on centralization, fixed tasks and direct supervision does not mean that employees are dissatisfied. Female business owners may still be concerned with the welfare of their employees, and provide them with clarity regarding the tasks to be fulfilled.

[199] See Mukhtar (2002).

Executive Summary

At present the share of women in total entrepreneurial activity varies between 20 and 40 percent across the developed countries. Female entrepreneurs have an important contribution to employment creation and economic growth and contribute to the diversity of entrepreneurship. Diversity in terms of products, processes, forms of organization and targeted markets is an essential condition for a competitive selection process where customers can choose according to their preferences and through which entrepreneurs learn more about different technological trajectories, organizational forms and their viability, which – in turn – is likely to have a positive impact on the quality of entrepreneurship.

The global growth of female entrepreneurship in the last decades has been accompanied by an increase in the number of studies on female entrepreneurship. Unlike most existing studies, which focus primarily upon female entrepreneurship in Anglo-Saxon countries, the present thesis investigates gender differences in entrepreneurship in the Netherlands. Different aspects of entrepreneurship are studied including the individual, the organization and the environment. A systematic distinction is made between direct and indirect gender effects on entrepreneurship to be able to disentangle 'pure' gender effects from effects of factors that are correlated with gender.

The studies in this thesis show evidence of gender differences in entrepreneurship both at the macro and the micro level. It is found that female and male entrepreneurs differ significantly with respect to a range of aspects, including self-perception, time investments, start-up capital and HRM. Most of these differences can be attributed to indirect effects, although some evidence has been found for direct gender effects. Indirect gender effects are due to gender differences with respect to factors such as firm size, sector, part-time involvement, risk attitude and experience. This means that many of the differences between female and male entrepreneurs are attributable to characteristics of the firm and the entrepreneur rather than to gender-specific barriers or gender-based discrimination as has often been assumed.

From a social perspective it is important to understand the underlying factors behind gender differences in entrepreneurship to provide policy makers with adequate information they can base their policy decisions on. The image of the female entrepreneur painted in this thesis does not seem to be very promising: on average female entrepreneurs tend to start and run relatively small firms and they appear less ambitious with respect to the pursuit of firm growth. The relatively low growth orientation of women may be attributed to the fact that women are relatively risk-averse (prudent) and control-oriented. However, this prudent attitude of women may also imply that women-owned firms are less likely to go bankrupt. There has been

some evidence in this direction. Although the studies in the present thesis do not specifically investigate the performance of female- and male-owned companies, it appears that at the level of countries and regions female entrepreneurship (as measured in terms of the share of female entrepreneurs in total entrepreneurial activity) is not harmful and probably valuable for the economy. Furthermore, although this thesis shows that female entrepreneurs on average seem to be less productive per time unit, this is due to gender differences with respect to underlying factors such as human, social and financial capital.

Although many female entrepreneurs start a firm to be better able to combine work and household responsibilities, this also involves a time restriction where female entrepreneurs have difficulty creating a basis for firm growth. A more equal distribution of household and childcare activities within the household may help female entrepreneurs to attain their growth ambitions and to fully utilize entrepreneurial opportunities. The availability of maternity leave schemes and affordable childcare can have an important contribution realizing the potential of female entrepreneurship. In the Netherlands there is a generic entrepreneurship policy that does not explicitly distinguish between stimulating female and male entrepreneurs. This does not necessarily have to be a problem as long as policies at a more general socio-economic level enable women to work fulltime within the context of either wage- or self-employment if they wish to do so.

Nederlandse Samenvatting (Summary in Dutch)

Maatschappelijk Belang

Een belangrijk economisch argument om vrouwelijk ondernemerschap te bestuderen is de bijdrage die zij leveren aan economische groei en werkgelegenheid. Op dit moment is het aandeel vrouwelijke ondernemers tussen de 20 en 40 procent in de meeste ontwikkelde landen. Vrouwelijke ondernemers zijn niet alleen belangrijk vanwege hun (groeiende) aandeel en aantallen, maar ook vanwege hun bijdrage aan de diversiteit van het ondernemerschap. Vrouwelijke ondernemers geven hun onderneming op een andere manier vorm dan mannelijke ondernemers, en dit leidt tot een 'eigen' manier van ondernemen die zich onderscheidt van de werkwijze van hun mannelijke collegae. Diversiteit in ondernemerschap is belangrijk omdat in de laatste tien jaar de consumentenvraag ook meer divers is geworden, mede onder invloed van processen als globalisering en technologische ontwikkeling, waardoor mensen in toenemende mate worden blootgesteld aan nieuwe producten en er nieuwe behoeften worden gecreëerd. Diversiteit in ondernemerschap leidt tot een ruimer aanbod van producten en diensten waaruit consumenten kunnen kiezen, en kan via concurrentie en selectieprocessen leiden tot een hogere kwaliteit van het ondernemerschap.

Onderzoek en Proefschrift

Op het gebied van vrouwelijk ondernemerschap zijn verschillende studies gedaan, echter de meeste van deze studies hebben tot op heden plaatsgevonden in Angelsaksische landen als de Verenigde Staten, Canada, Australië, Groot-Brittannië en Nieuw-Zeeland. De kennis van vrouwelijk ondernemerschap en/of de verschillen tussen mannelijke en vrouwelijke ondernemers in de niet-Angelsaksische (ontwikkelde) Europese landen is beperkt. Dit proefschrift beoogt inzicht te geven in de kenmerken van vrouwelijke ondernemers in Nederland, en omvat een zestal onafhankelijk leesbare studies. De bestudeerde onderwerpen zijn mede ingegeven door bestaande 'gaten' in de kennis over vrouwelijk ondernemerschap. De studies in dit proefschrift richten zich op verschillende aspecten van het ondernemerschap en op verschillende niveaus van analyse. Er is aandacht voor de ondernemer als individu, de onderneming en de omgeving.

Het meeste onderzoek naar vrouwelijk ondernemerschap heeft zich tot op heden gericht op vrouwelijke ondernemers als individu. Hierbij bestaat vooral aandacht voor de karaktereigenschappen en demografische kenmerken van vrouwelijke (vis-à-vis mannelijke) ondernemers. Er bestaat echter relatief weinig aandacht voor (zelf)percepties van vrouwelijke ondernemers. De laatste jaren is er meer aandacht

gekomen voor de organisatie en de omgeving van de (vrouwelijke) ondernemer. Echter, wat betreft de omgevingsfactoren die invloed uitoefenen op vrouwelijk ondernemerschap zijn er, zowel op micro- als op macroniveau, nauwelijks studies gedaan naar de complexiteit van alle mogelijke relaties en invloeden. In de meeste studies worden de beïnvloedende factoren afzonderlijk behandeld, bijvoorbeeld er wordt aandacht besteed aan de kredietverlening of aan de invloed van een bepaalde beleidsmaatregel om vrouwelijk ondernemerschap te stimuleren. De 'organisatie' studies richten zich voornamelijk op kenmerken van het bedrijf, zoals de omvang, sector en de locatie. Minder aandacht is er voor de organisatiestructuur en management van de bedrijven van vrouwen.

De verschillende studies in dit proefschrift werpen licht op enkele van deze 'verwaarloosde' gebieden in het onderzoeksgebied van vrouwelijk ondernemerschap. Op microniveau besteden de Hoofdstukken 3 tot en met 7 achtereenvolgens aandacht aan verschillen tussen mannelijke en vrouwelijke ondernemers op het gebied van zelfperceptie, tijdsbesteding, de omvang en samenstelling van het startkapitaal, strategie en 'human resource management'. Op macroniveau besteedt hoofdstuk 2 aandacht aan de verschillen in determinanten van mannelijk en vrouwelijk ondernemerschap (in een land).

Methodologisch gezien maken de verschillende studies op microniveau onderscheid tussen directe en indirecte effecten van het geslacht van de ondernemer op ondernemerschap, waarbij de indirecte effecten lopen via andere verklarende factoren (zoals bedrijfsomvang en sector), en de directe effecten betrekking hebben op verschillen tussen mannelijke en vrouwelijke ondernemers wanneer 'gecontroleerd' wordt voor de invloeden van de andere verklarende factoren. De studies in dit proefschrift proberen dus 'pure' effecten van het geslacht van de ondernemer te scheiden van effecten die via andere verklarende factoren lopen, door zoveel mogelijk verklarende factoren (naast 'gender') in de analyse op te nemen.

De verschillende hoofdstukken in dit proefschrift gaan uit van datasets waarin zowel vrouwelijke als mannelijke ondernemers vertegenwoordigd zijn. Het aantal respondenten in de datasets is relatief groot, met uitzondering van Hoofdstuk 2 (dat zich richt op landenniveau) en Hoofdstuk 6 (dit is een exploratieve studie). Ondernemerschap wordt op een tweetal manieren geoperationaliseerd: in termen van startende ondernemers (in Hoofdstukken 2, 4 en 5) en in termen van eigenaren van kleine bedrijven (in Hoofdstukken 6 en 7). Hoofdstuk 3 wijkt hier af aangezien hier onderscheid wordt gemaakt tussen verschillende 'ondernemende' activiteiten, zoals het starten van een bedrijf, het managen van een klein bedrijf of een groot bedrijf en intrapreneurship, om de mate van ondernemerschap van deze verschillende activiteiten te 'meten'.

De Hoofdstukken

De inhoud van de afzonderlijke hoofdstukken wordt hieronder beschreven. Het eerste hoofdstuk omvat een inleiding op het onderwerp vrouwelijk ondernemerschap en besteedt aandacht aan het belang van vrouwelijk ondernemerschap vanuit maatschappelijk en wetenschappelijk perspectief. In dit hoofdstuk wordt ook de bijdrage van het proefschrift besproken, er wordt een korte beschrijving per hoofdstuk gegeven en de conclusies van het proefschrift worden gepresenteerd. In dit hoofdstuk komt ook het belang van diversiteit van het ondernemerschap aan de orde. Bepalende factoren voor diversiteit in ondernemerschap (gemeten in termen van het aandeel vrouwelijke ondernemers in het totale aantal ondernemers) in een land komen aan bod in Hoofdstuk 2. Hoofdstukken 3 tot en met 7 onderzoeken de diversiteit van het ondernemerschap door te kijken naar verschillen tussen mannelijke en vrouwelijke ondernemers op microniveau.

Hoofdstuk 2 besteedt aandacht aan de factoren die mannelijk en vrouwelijk ondernemerschap beïnvloeden in een land. Er wordt een theoretisch overzicht gegeven van de mogelijke determinanten van mannelijk en vrouwelijk ondernemerschap, waarbij technologische, economische, demografische, culturele en beleidsfactoren aan bod komen. Deze determinanten worden afgeleid uit de literatuur over de (algemene) determinanten van ondernemerschap, studies op het gebied van vrouwelijk ondernemerschap en onderzoek naar de arbeidsmarktparticipatie van vrouwen. Er wordt in deze studie ook aandacht besteed aan de methodologische aspecten van het bestuderen van vrouwelijk ondernemerschap op landenniveau. In de studies op microniveau kunnen verschillende definities van vrouwelijk ondernemerschap worden gehanteerd. Evenzo kunnen op macroniveau verschillende maatstaven van vrouwelijk ondernemerschap worden gebruikt. Er kan worden gekeken naar het aandeel vrouwelijke ondernemers in de (vrouwelijke) beroepsbevolking, maar ook naar het aandeel vrouwen in het totale aantal ondernemers. In Hoofdstuk 2 wordt de invloed van verschillende macro factoren op de twee verschillende maatstaven van vrouwelijk ondernemerschap onderzocht voor 29 OECD landen. De bevindingen tonen aan dat ondernemerschap, mannelijk en vrouwelijk ondernemerschap grotendeels op dezelfde manier worden beïnvloed door dezelfde factoren. Echter, wanneer er wordt gekeken naar het aandeel vrouwelijke en mannelijke ondernemers in het totale aantal ondernemers blijkt dat het negatieve effect van werkloosheid kleiner is voor vrouwelijk ondernemerschap, en dat tevreden zijn met het leven alleen invloed heeft op vrouwelijk ondernemerschap.

Waar Hoofdstuk 2 aandacht besteedt aan het meten van vrouwelijk ondernemerschap, besteedt Hoofdstuk 3 aandacht aan de definitie van ondernemerschap door onderscheid te maken tussen ‘ondernemende’ activiteiten en zelfperceptie als ondernemer (de mate waarin iemand zichzelf als ondernemer ziet). Hoofdstuk 3

behandelt de vraag in welke mate mannen en vrouwen die zich bezighouden met uiteenlopende bedrijfsactiviteiten – het starten of managen van een klein bedrijf; intrapreneurship; het overnemen van een bestaand bedrijf; het managen van een franchise organisatie; dienstverlening aan een ondernemer; het managen van een groot bedrijf; en het leiden van een familiebedrijf – zichzelf als ondernemer zien. Deze verschillende activiteiten zijn gebaseerd op een typologie die in 1999 is geïntroduceerd door Karl Vesper, en worden op basis van de literatuur en de resultaten van een expert panel gerangschikt naar mate van ondernemerschap. De studie laat zien dat mensen die zich bezighouden met activiteiten die worden gekenmerkt door een grote mate van ondernemerschap, zichzelf eerder als ondernemer zien. De relaties tussen 'ondernemende' activiteiten, geslacht van de ondernemer en zelfperceptie zijn onderzocht aan de hand van een steekproef van 207 respondenten (alumni van een universiteit in het mid-westen van de Verenigde Staten) onder wie 148 mannen en 59 vrouwen. De resultaten laten zien dat er zowel directe als indirecte effecten zijn van het geslacht van de ondernemer. Vrouwen zien zichzelf in mindere mate als ondernemer dan mannen (wanneer wordt gecontroleerd voor de activiteiten die individuen ondernemen). Ook houden vrouwen zich minder bezig met die activiteiten die worden gekenmerkt door een hoge mate van ondernemerschap, waardoor zij zich minder als ondernemer zien dan mannen.

In Hoofdstuk 4 worden de tijdsinvesteringen van mannelijke en vrouwelijke ondernemers in startende bedrijven onderzocht. Er wordt hierbij gekeken naar de factoren (inclusief het geslacht van de ondernemer) die het aantal uren dat ondernemers in hun onderneming investeren bepalen, daarbij onderscheid makend naar effecten van de preferentie voor werktijd (versus vrije tijd) en de productiviteit van de gewerkte tijd. Om de effecten op tijdsinvesteringen te onderzoeken worden zowel een lineair als een non-lineair model gebruikt, waarbij de laatste onderscheid maakt tussen preferentie en productiviteitseffecten. Er wordt gebruik gemaakt van data van 1256 Nederlandse ondernemers – onder wie 919 mannen en 337 vrouwen – die een bedrijf zijn gestart in 1994. Gemiddeld genomen investeren vrouwen minder tijd in hun bedrijf dan mannen, hebben zij – gemiddeld – een lagere productiviteit dan mannen, en hebben mannen en vrouwen een vergelijkbare preferentie voor werktijd. Daarnaast zijn er zowel directe als indirecte effecten van het geslacht van de ondernemer op tijdsinvesteringen. Vrouwelijke ondernemers investeren minder uren in hun onderneming dan mannelijke ondernemers, zelfs wanneer er wordt gecontroleerd voor andere verklarende factoren. Er zijn geen directe effecten van het geslacht van de ondernemer op preferenties en productiviteit. In een analyse waarin de verwachte winst in 1995 wordt verklaard uit dezelfde factoren die zijn gebruikt voor het verklaren van de productiviteit van de gewerkte tijd, blijkt echter dat het geslacht van de ondernemer wel een negatief direct effect heeft op de verwachte winst. Dit lagere winstniveau kan wellicht worden toegeschreven aan het feit dat vrouwen veelal kwaliteit nastreven en ook de nadruk leggen op andere doelstellingen die niet direct zijn gerelateerd aan financieel resultaat[200]. Naast deze directe effecten vinden we

[200] Zie Brush (1992), Rosa et al., (1996) en Verheul et al. (2002).

negatieve indirecte effecten van het geslacht van de ondernemer op het aantal werkuren, preferenties en productiviteit. Deze lagere productiviteit van werktijd kan worden toegeschreven aan lagere niveaus van menselijke, sociaal en financieel kapitaal van vrouwen, evenals een kleinere omvang van de onderneming.

In Hoofdstuk 5 wordt aandacht besteed aan de omvang en samenstelling van het startkapitaal van mannelijke en vrouwelijke ondernemers. Bij de samenstelling van het startkapitaal wordt gekeken naar het aandeel bankkrediet en het aandeel eigen vermogen in het totale startkapitaal. Wederom wordt er onderscheid gemaakt tussen directe en indirecte effecten van het geslacht van de ondernemer waarbij de indirecte effecten lopen via een reeks van persoonlijke en bedrijfskenmerken, zoals risicohouding, ervaring met financieel management, tijdsbesteding (parttime versus fulltime ondernemerschap), netwerken en sector. Relaties tussen het geslacht van de ondernemer en startkapitaal worden getest aan de hand van een steekproef van ongeveer 2000 Nederlandse ondernemers onder wie 1500 mannen en 500 vrouwen. Resultaten laten zien dat gemiddeld genomen vrouwelijke ondernemers gebruik maken van een kleiner startkapitaal, maar dat er geen verschillen tussen mannelijke en vrouwelijke ondernemers is wat betreft de samenstelling van het startkapitaal. Echter, waneer er nader wordt gekeken en onderscheid wordt gemaakt tussen directe en indirecte effecten, blijkt dat het geslacht van de ondernemer een negatief direct effect heeft op de omvang van het startkapitaal en ook op het aandeel eigen vermogen in het startkapitaal. Dus, wanneer we kijken naar vergelijkbare (in termen van de andere verklarende factoren) mannelijke en vrouwelijke ondernemers, blijkt dat vrouwen minder kapitaal investeren in hun onderneming en zij een lager aandeel eigen vermogen in het startkapitaal hebben. Daarnaast heeft het geslacht van de ondernemer een klein positief effect op het aandeel bankkrediet in het startkapitaal[201]. Naast de directe effecten zijn er ook indirecte effecten van het geslacht van de ondernemer op het startkapitaal. Er is een negatief indirect effect op de omvang van het startkapitaal en het aandeel bankkrediet in het startkapitaal en een positief indirect effect op het aandeel eigen vermogen in het startkapitaal.

Hoofdstuk 6 besteedt aandacht aan strategie en 'human resource management' in bedrijven van mannelijke en vrouwelijke makelaars. Het gaat hier om een exploratieve studie die is gebaseerd op een steekproef van 28 Nederlandse makelaars waaronder 15 mannen en 13 vrouwen. De studie is vrij breed en onderzoekt verschillende aspecten van het ondernemerschap, zoals motivatie om te gaan ondernemen, ervaring, doelstellingen en strategie, netwerken en het gebruik van mentoren, en 'human resource management' (waarbij aandacht wordt besteed aan werving en selectie, training en ontwikkeling, compensatie en leiderschapsstijl). De resultaten laten zien dat er verschillen zijn tussen mannelijke en vrouwelijke ondernemers, en dan vooral wat betreft de aanloop naar het ondernemerschap, de strategie en leiderschapsstijl.

[201] Dit is verrassend aangezien vaak wordt gedacht dat vrouwen meer problemen ondervinden bij de kredietverlening. Echter, er zijn alleen (vrouwelijke) ondernemers in de analyse meegenomen die een krediet hebben verkregen, en tevens is er niet gekeken naar de prijs van een lening.

Vrouwelijke makelaars starten vaker een eigen bedrijf, terwijl mannelijke makelaars eerder een bestaand bedrijf overnemen. Mannelijk ondernemerschap in de makelaardij lijkt te zijn ingegeven door mogelijkheden (opportunities), terwijl vrouwelijk ondernemerschap eerder te herleiden is tot noodzaak (necessity). Ook zien we dat vrouwelijke makelaars minder vaak groei nastreven (zij vinden continuïteit belangrijker) en dat zij vaker kiezen voor specialisatie. In tegenstelling tot vrouwelijke makelaars bieden veel mannelijke makelaars ook additionele diensten aan, zoals de mogelijkheid een hypotheek of verzekering af te sluiten. Wat betreft de leiderschapsstijl blijkt dat vrouwelijke ondernemers kiezen voor een stijl die aansluit bij hun strategie en die relatief informeel is, en die is gebaseerd op (persoonlijke) relaties in plaats van hiërarchie.

Hoofdstuk 7 kan worden gezien als een vervolgstudie op de exploratieve studie in Hoofdstuk 6. Waar Hoofdstuk 6 inzicht geeft in de relaties tussen het geslacht van de ondernemer, persoonlijke kenmerken (zoals motivatie en ervaring), doelstellingen, strategie, en het structureren van 'human resource management' (HRM) praktijken, richt Hoofdstuk 7 zich op het bestuderen van de invloed van het geslacht van de ondernemer op de mate waarin HRM georiënteerd is op het creëren van betrokkenheid ('commitment') van medewerkers of het onder controle hebben van bedrijfsprocessen. In deze studie wordt gecontroleerd voor verschillende bedrijfskenmerken, zoals bedrijfsomvang, leeftijd bedrijf, sector, tijdsinvesteringen, groeistrategie en type strategie (er wordt onderscheid gemaakt naar lage prijzen, focus en kwaliteit). Er wordt gebruik gemaakt van een steekproef van 608 Nederlandse ondernemers, onder wie 573 mannen en 35 vrouwen, om de relatie tussen het geslacht van de ondernemer en de mate waarin HRM is georiënteerd op het creëren van betrokkenheid. Verschillende HRM praktijken worden geïdentificeerd (vanuit het perspectief van betrokkenheid) waaronder participatie van werknemers in de besluitvorming, decentralisatie, indirecte supervisie, informele structuur, breed gedefinieerde functies, taakdifferentiatie, expliciete aandacht voor leren, en algemene training. Deze studie onderzoekt zowel directe and indirecte effecten van het geslacht van de ondernemer op HRM, waarbij de indirecte effecten via de bedrijfskenmerken lopen. Er wordt een negatief direct effect van het geslacht van de ondernemer op het HRM systeem (het geheel van HRM praktijken) gevonden. In andere woorden: vrouwelijke ondernemers richten zich bij de structurering van HRM meer op controle (en minder op toewijding) dan mannelijke ondernemers. Meer specifiek kan worden gezegd dat vrouwelijke ondernemers een meer centrale organisatiestructuur hebben (waarbinnen medewerkers minder zeggenschap hebben over de inrichting van hun eigen werkzaamheden) en meer de nadruk leggen op directe supervisie dan mannelijke ondernemers. Er wordt geen aanwijzing gevonden voor het bestaan van indirecte effecten.

Conclusies

Wanneer de verschillende hoofdstukken naast elkaar worden gelegd, kan het volgende worden geconcludeerd. De verschillende studies in dit proefschrift tonen aan dat mannelijke en vrouwelijke ondernemers van elkaar verschillen ten aanzien van verschillende aspecten van het ondernemerschap. Deze verschillen zijn echter in veel gevallen toe te schrijven aan indirecte effecten. Met andere woorden: er zijn verschillende onderliggende factoren (zoals bedrijfsomvang, sector, tijdsbesteding, risicohouding, ervaring, netwerken en strategie) met betrekking tot welke mannelijke en vrouwelijke ondernemers verschillen, verschillen die er vervolgens toe leiden dat er een verschil is in zelfperceptie met betrekking tot ondernemerschap (in Hoofdstuk 3), de tijd die wordt geïnvesteerd in de onderneming (in Hoofdstuk 4), de omvang en samenstelling van het startkapitaal (in Hoofdstuk 5) en HRM (in Hoofdstuk 6).

Hoewel er in verschillende studies wat bewijs is gevonden voor het bestaan van directe effecten van het geslacht van de ondernemer, moeten we voorzichtig zijn ten aanzien van de interpretatie van deze effecten omdat het mogelijk is dat het bestaan van deze directe effecten samenhangt met het feit dat het bijna onmogelijk is om voor alle relevante andere verklarende factoren van ondernemerschap rekening te houden. Directe effecten die – na controle voor alle mogelijke beïnvloedende factoren overblijven – zouden kunnen worden verklaard aan de hand van percepties *ten aanzien van* vrouwelijke ondernemers (beeldvorming) of *van* vrouwelijke ondernemers (zelfperceptie).

Veel van de verschillen tussen mannelijke en vrouwelijke ondernemers zijn dus te herleiden tot verschillen in de kenmerken van ondernemers en hun bedrijven in plaats van barrières en discriminatie. Vanuit sociaal oogpunt is het belangrijk om naar onderliggende factoren te kijken om meer inzicht te krijgen in de oorsprong van verschillen tussen mannelijke en vrouwelijke ondernemers, opdat misverstanden uit de weg worden geruimd en beleidsmakers het juiste beleid zullen voeren met betrekking tot het stimuleren van (vrouwelijk) ondernemerschap. Het beeld van de gemiddelde vrouwelijke ondernemer, zoals deze uit dit proefschrift voortkomt, is niet een rooskleurige. Het gaat veelal om kleinere bedrijven waarbinnen relatief weinig groei wordt nagestreefd. De behoefte van vrouwelijke ondernemers om hun bedrijf te controleren en hun voorzichtige houding kunnen hierbij een rol spelen. Echter, diezelfde houding kan ook tot gevolg hebben dat bedrijven van vrouwen minder snel failliet gaan[202]. Hoewel in dit proefschrift niet specifiek is gekeken naar de prestaties van vrouwelijke ondernemers laat het inleidende hoofdstuk zien dat op landelijk en regionaal niveau vrouwelijk ondernemerschap (gemeten in termen van het aandeel

[202] In zijn studie suggereert Blom (2003) dat – in vergelijking met mannen – vrouwen in Nederland minder kans hebben om failliet te gaan.

vrouwelijke ondernemers in het totale aantal ondernemers) niet schadelijk en zeer waarschijnlijk waardevol is voor de economie. Verder blijkt uit Hoofdstuk 4 dat hoewel vrouwelijke ondernemers gemiddeld genomen minder productief zijn per gewerkt uur, dit te herleiden is tot onderliggende factoren, als menselijk, sociaal en financieel kapitaal.

Hoewel veel vrouwelijke ondernemers een bedrijf starten om zo beter werk en zorg te kunnen combineren, brengt dit ook vaak een tijdsrestrictie met zich mee die het moeilijk maakt om voldoende draagvlak voor groei te creëren. Een gelijke verdeling van de taken binnen het huishouden zou vrouwelijke ondernemers helpen de kansen die het ondernemerschap biedt volledig te kunnen benutten. Ook ouderschapsverlof en betaalbare kinderopvang die beter aansluit bij de werktijden van vrouwelijke ondernemers kunnen hiertoe bijdragen. In Nederland wordt een generiek beleid gevoerd op het gebied van ondernemerschap. Er wordt geen onderscheid gemaakt tussen mannelijke en vrouwelijke ondernemers en er zijn geen specifieke maatregelen om vrouwelijk ondernemerschap te stimuleren. Dit hoeft geen probleem te zijn zolang beleid op een meer algemeen niveau ervoor zorgt dat het voor vrouwen mogelijk is om fulltime te werken of te ondernemen indien zij hiervoor kiezen.

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Is there a (fe)male approach?

Understanding gender differences in entrepreneurship

Female entrepreneurship matters. Both academic research and policy are increasingly fuelled by the idea that female entrepreneurs are important for economic progress. Female entrepreneurs make a significant contribution to job creation, the total gross domestic product (GDP) and business diversity. Coupled with global growth of female participation in entrepreneurial activity, an increasing number of researchers have examined female entrepreneurship in recent decades. Unlike past studies, which focus primarily upon female entrepreneurship in Anglo-Saxon countries, the present thesis investigates gender differences in entrepreneurship in the Netherlands. Different aspects of entrepreneurship are studied including the individual, the organization and the environment. One unique aspect of the research in this thesis is that a systematic distinction is made between direct and indirect gender effects, disentangling 'pure' gender effects from effects of factors that are correlated with gender. Findings indicate that female and male entrepreneurs differ with respect to a range of aspects such as self-perceptions regarding entrepreneurship, time invested in the business, start-up capital and HRM. Most of these differences can be attributed to indirect effects, although some evidence has been found for direct gender effects.

Ingrid Verheul (1975) graduated in Economics at Erasmus University Rotterdam in 1999. She started writing her PhD. thesis on female entrepreneurship in 2000. In addition to female entrepreneurship, her research interests include determinants of entrepreneurship and entrepreneurship education. Her work has been published in several international scientific journals including Journal of Business Venturing, Small Business Economics, International Small Business Journal and International Journal of Entrepreneurship Education. She is co-editor of the book: *Entrepreneurship: Determinants and Policy in a European-US Comparison* published by Kluwer Academic Publishers in 2002.

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