

**Traditional and Non-Traditional
Female Entrepreneurs:
An Exploration into what Influences their Selection of
Industry Sector**

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September 2007

Thesis submitted in fulfilment of the requirements for the Masters Degree in Business
Studies by Research

ABSTRACT:

The purpose of this study is to gain an understanding of the factors that influence a woman to start a business in a traditionally female industry sector or in a more male orientated high technology industry sector. This involves examining the antecedent influences, motivations and attitudes which may impinge on the female entrepreneur's choice of industry sector. This study is unique as it is the first of its kind to investigate this topic in the South East region and in Ireland.

The research methodology utilised in the current study was qualitative in nature with the phenomenological philosophy underpinning the research. The primary data for this research was then gathered through the use of in-depth semi-structured interviews. Qualitative interviews allowed this researcher to gain a comprehensive insight into each female entrepreneur's situation and the influences that impacted her choice of selecting a traditionally female industry sector or a more male orientated high technology industry sector.

There are a number of important findings which have emerged from the current research. The most noteworthy, of which, is that differences do exist between women who own and operate businesses in traditional industry sectors compared to those in high technology sectors. It was established that not only were the high technology entrepreneurs more likely to be older and single at start-up, but that they had also attained a higher formal level of education and a more extensive, relevant occupational experience than their traditional counterparts.

This research also indicates that education and the educational system has a key role to play in developing technology based entrepreneurs. There is a need for teachers and counsellors, at post primary level, to encourage girls to choose non-traditionally female subjects and thus be more prepared for a high technological career. This confirms research by Richardson and Hynes (2006) who suggested that the low numbers of

technology based female entrepreneurs is, in part, attributable to the post primary education system.

Previous research has suggested that parental influences are more strongly seen in the choice of non-traditional careers. The current study has also identified that parental influence appears to have a greater influence on the entrepreneurs in high technology sectors than their traditional counterparts. Interestingly, the parents of the high technology females were also more highly educated and were more encouraging of their daughters' career choices than the parents of the traditional females.

Finally, this research has also identified that females in traditional industry sectors are likely to associate themselves with feminine traits such as flexible, quality orientated, customer focused and sympathetic, while their high technology counterparts associated with more masculine traits such as technical, innovative and confident. However, as recent research by Gupta, Turban, Wasti and Sikdar (2005) has suggested, and which is confirmed by the current study, entrepreneurs with high entrepreneurial intentions tend to associate more with masculine traits and thus, all entrepreneurs in the current study did display some masculine characteristics.

From the outset the current research has set out to determine what influences a female entrepreneur in her choice of industry sector. The current research will add, therefore, to the growing body of literature on female entrepreneurship in general but, most importantly, it contributes to the emergent field of study that is specifically focused on understanding the female entrepreneur. The current research has highlighted the fact that differences exist between high technology female entrepreneurs and their traditional counterparts. Thus, the outputs from this research have implications for researchers and teachers of entrepreneurship, educators in general, enterprise support agencies, policy makers and female entrepreneurs.

DECLARATION:

I hereby declare this thesis is entirely my own work and has not been submitted as an exercise or degree at this or any other higher education establishment. The author alone has undertaken the work, except where otherwise acknowledged.

Elaine Aylward

October 2007

ACKNOWLEDGEMENTS:

The author would like to thank a number of people who, in many ways, have helped in the completion of this thesis. Firstly, I wish to thank my supervisor Dr. Bill O’Gorman for his patience, support, guidance and expertise throughout the last two years. It was a pleasure to work with you Bill. I would also like to acknowledge and thank Margaret Tynan for her guidance, support and encouragement during the process. A special thanks to the FEIW team, Bill O’ Gorman, Margaret Tynan, Margaret Durand, Eileen Sinnott, Louise Dalton and Philomena Carton for their help and understanding throughout the whole process. I also wish to portray my gratitude for the staff at the Luke Wadding Library and the Centre for Entrepreneurship, W.I.T.

I also extend a special thanks to the female entrepreneurs who took part in this research. Without their participation, time and assistance I could not have completed the study and I wish to thank them sincerely for this.

I would also like to thank my fellow Masters students, Niamh, Denise, Eileen , Margaret and Damien for their friendship and for making the whole process less lonely. Thanks lads!

Finally, heartfelt thanks to my family who have always supported me in what I have done and throughout my years in Waterford Institute of Technology. In particular I would like to thank my Father and Mother for all they have done for me. Mam, you have been a source of love, support and belief in me and I couldn’t have done it without you. To my sisters and brother for the all their love and support. Ash, thanks for your design expertise and your help in those last few days!! To all the little one’s for making life fun! Jonathan thanks for your support and constant encouragement, you’re the best and I never would have got through this without you!!

TABLE OF CONTENTS:

	PAGE
ABSTRACT.....	i
DECLARATION.....	iii
ACKNOWLEDGEMENTS.....	iv
TABLE OF CONTENTS.....	v
LIST OF FIGURES.....	ix
LIST OF TABLES.....	x
CHAPTER 1: INTRODUCTION.....	
1.1 CHAPTER OVERVIEW	1
1.2 RATIONALE FOR THE STUDY.....	1
1.3 RESEARCH QUESTION AND OBJECTIVES.....	5
1.4 STRUCTURE OF THE THESIS.....	6
1.5 LIMITATIONS OF THE STUDY.....	7
1.6 BENEFITS OF THE STUDY.....	8
1.7 CONCLUSION.....	8
CHAPTER 2: LITERATURE REVIEW	
2.1 INTRODUCTION.....	9
2.2 THE ENTREPRENEUR.....	10
2.3 THE FEMALE ENTREPRENEUR.....	14
2.3.1 PROFILING THE FEMALE ENTREPRENEUR.....	16
2.3.1.1 Family Background.....	17
2.3.1.2 Education.....	18
2.3.1.3 Previous Occupational Experience.....	19

2.3.1.4 <i>Business Skills</i>	20
2.3.2 <i>REASONS WHY WOMEN START A BUSINESS</i>	21
2.3.3 <i>BARRIERS ASSOCIATED WITH FEMALE ENTREPRENEURSHIP</i>	24
2.3.3.1 <i>Finance</i>	24
2.3.3.2 <i>Networking</i>	26
2.3.3.3 <i>Perceptions of Masculinity</i>	27
2.3.4 <i>SOCIALISATION</i>	28
2.3.5 <i>WOMEN AND TYPE OF INDUSTRY SECTOR</i>	29
2.3.5.1 <i>Characteristics of the “traditional” female enterprise</i>	31
2.4 <i>THE HIGH TECHNOLOGY ENTERPRISE</i>	35
2.4.1 <i>DEFINING THE HIGH TECHNOLOGY ENTERPRISE</i>	36
2.4.2 <i>ASPECTS OF HIGH TECHNOLOGY ENTERPRISES</i>	37
2.4.2.1 <i>Innovation</i>	38
2.4.2.2 <i>R&D</i>	38
2.4.2.3 <i>High Growth</i>	39
2.4.3 <i>CHARACTERISTICS OF HIGH TECHNOLOGY ENTREPRENEURS</i>	40
2.4.3.1 <i>Age</i>	40
2.4.3.2 <i>Family Background</i>	41
2.4.3.3 <i>Socialisation</i>	41
2.4.3.4 <i>Education</i>	42
2.4.3.5 <i>Experience</i>	43
2.5 <i>COMPARATIVE ANALYSIS</i>	44
2.6 <i>CONCLUSION</i>	44

CHAPTER 3: RESEARCH METHODOLOGY.....

3.1 <i>INTRODUCTION</i>	46
3.2 <i>RESEARCH PROBLEM</i>	47
3.3 <i>RESEARCH QUESTION</i>	50
3.4 <i>RESEARCH OBJECTIVES</i>	51
3.5 <i>RESEARCH PROCESS</i>	52
3.6 <i>RESEARCH PHILOSOPHIES</i>	54
3.6.1 <i>THE POSITIVIST APPROACH</i>	56

3.6.2 <i>THE PHENOMENOLOGICAL APPROACH</i>	58
3.6.3 <i>SELECTION OF RESEARCH PHILOSOPHY</i>	60
3.7 QUANTITATIVE VERSUS QUALITATIVE RESEARCH	61
3.8 RESEARCH METHOD.....	64
3.8.1 <i>RESEARCH CRITERIA</i>	64
3.8.1.1 <i>Criteria for Inclusion in High Technology Industry Sector</i>	66
3.8.1.2 <i>Criteria for Inclusion in Traditional Industry Sector</i>	67
3.8.2 <i>SAMPLE SELECTION</i>	68
3.8.3 <i>SELECTION OF RESEARCH INSTRUMENT</i>	70
3.9 SEMI-STRUCTURED INTERVIEWS.....	70
3.9.1 <i>PILOT INTERVIEWS</i>	72
3.9.2 <i>INTERVIEW CONTENT</i>	73
3.9.3 <i>INTERVIEW PROTOCOL</i>	73
3.9.4 <i>NOTE-TAKING & RECORDING</i>	75
3.9.5 <i>LIMITATIONS OF SEMI-STRUCTURED INTERVIEWS</i>	76
3.9.6 <i>ANALYSING THE DATA</i>	78
3.10 CONCLUSION.....	79

CHAPTER 4: RESEARCH FINDINGS.....

4.1 INTRODUCTION.....	81
4.2 DATA ANALYSIS.....	81
4.2.1 <i>DEMOGRAPHICS</i>	82
4.2.2 <i>EDUCATION</i>	84
4.2.3 <i>FAMILY BACKGROUND</i>	87
4.2.4 <i>SOCIALISATION</i>	92
4.2.5 <i>PREVIOUS EXPERIENCE</i>	94
4.2.6 <i>MOTIVATIONS</i>	98
4.2.7 <i>ATTITUDES TOWARDS HIGH TECHNOLOGY</i>	104
4.2.8 <i>BARRIERS TO WOMEN ENTERING HIGH TECHNOLOGY</i>	106
4.3 CONCLUSION.....	108

CHAPTER 5: DISCUSSION.....	
5.1 INTRODUCTION.....	109
5.2 PERSONAL FACTORS.....	110
5.3 EDUCATIONAL INFLUENCES.....	112
5.4 FAMILY INFLUENCES.....	114
5.5 ASSOCIATIONS WITH MASCULINITY.....	115
5.6 CONCLUSION.....	117
CHAPTER 6: CONCLUSIONS, LIMITATIONS & RECOMMENDATIONS.....	
6.1 INTRODUCTION.....	119
6.2 CONCLUSIONS.....	119
6.3 LIMITATIONS	121
6.4 RECOMMENDATIONS FOR FUTURE RESEARCH.....	122
BIBLIOGRAPHY	123
APPENDIX A: INTERVIEW SCHEDULE.....	143
APPENDIX B: SUBJECTS AT POST PRIMARY LEVEL.....	147
APPENDIX C: SKILLS FROM PREVIOUS EXPEREINCE.....	148
APPENDIX D: MOTIVATION FOR STARTING A BUSINESS.....	149
APPENDIX E: MOTIVATION FOR CHOOSING INDUSTRY SECTOR.....	150
APPENDIX F: RESPONDENT CHARACTERISTICS OPTIONS.....	151

LIST OF FIGURES:

	<i>PAGE</i>
Figure 3.1: Conceptual Framework.....	49
Figure 3.2: The Research Process Onion.....	53
Figure 3.3: Research Method.....	65
Figure 3.4: Planning Procedure for Qualitative Interviews.....	77

LIST OF TABLES:

	<i>PAGE</i>
Table 3.1: Key Features of the Positivist and Phenomenological Paradigms..	56
Table 3.2: Fundamental Differences between Quantitative and Qualitative Research Strategies.....	61
Table 4.1: Respondents Abbreviations.....	82
Table 4.2: Demographic Characteristics of Respondents.....	82
Table 4.3: Subjects offered and taken by Respondents at Post Primary Level.....	85
Table 4.4: Highest Level of Education in Specialist Area.....	86
Table 4.5: Educational Levels of Respondents Parents.....	88
Table 4.6: Entrepreneurial Backgrounds of Respondents.....	90
Table 4.7: Skills Acquired from Previous Work Experience.....	97
Table 4.8: Motivational Factors.....	99
Table 4.9: Reasons Respondents chose Industry Sector.....	101
Table 4.10: Characteristics of Respondents.....	103

Chapter One:

Introduction

Chapter 1: Introduction

1.1 Chapter Overview:

This study undertakes research into the area of female entrepreneurship and specifically into why female entrepreneurs start a business in certain industry sectors. This researcher believes that this is an important area for research as it has been acknowledged that the area of female entrepreneurship has been neglected and is under developed. The aim of this research, therefore, is focused entirely on female entrepreneurs and is concerned with understanding the influencing factors that encourage a woman entrepreneur to enter a traditional or non-traditional industry sector. This researcher seeks to discover if there are differences in the antecedent influences, motivations and attitudes between the traditional and non-traditional entrepreneurs and to determine if these differences account for the variation in industry sectors.

This chapter provides the reader with insights into the importance of the current research. It will begin with an explanation of the rationale of why this researcher undertook this study. It will also detail the research question and set of research objectives that this study seeks to gain answers to. A brief overview of the structure of this thesis will then follow. This chapter will finally conclude with the limitations and benefits associated with the current study.

1.2 Rationale for the Study

In the last number of years there has been phenomenal growth in the number of women starting businesses. This has resulted in an increase in the interest surrounding this area and also in the level of research conducted around this topic. However, the majority of the research that exists on female entrepreneurs is concerned with examining the differences that exist between male and female business owners rather than on the differences that exist between female entrepreneurs from different industry sectors.

Female entrepreneurs are under represented in the entrepreneurship literature and, therefore, there is a need to perform more research on female entrepreneurs. In particular, there is a need to perform research into why female entrepreneurs select service based industry sectors more than male orientated high technology sectors.

It has been estimated that in the United States women account for 38% of entrepreneurs and, in fact, the number of women starting businesses have grown at twice the rate of all firms in the last two decades (Centre for Women's Business Research, 2006). Ireland, on the other, has a low level of female entrepreneurship with women making up just 15% of Irish entrepreneurs and some research has suggested that this figure may be even lower at only 7.5% (Henry & Kennedy, 2002). According to recent research undertaken by GEM (2004), Ireland compares poorly with other European countries such as Portugal, Austria and France where female entrepreneurs can account for up to 41% of all new start-up's. Even more worrying is the fact that Ireland, where the population is relatively evenly split between male and females (CSO, 2006), for every 100 male entrepreneurs there are only 29 female entrepreneurs (Fitzsimons, O'Gorman, Hart and McGloin, 2004). Recent research has also indicated that the South East region of Ireland, the region of study of this current research, has an even lower level of female entrepreneurship than the national average at just 4% (O'Gorman, 2007). This is consistent with the fact that the South East is generally considered to be an economically underperforming region compared to the other regions in Ireland (Dee, 2004; O'Gorman and Dee, 2004; Walsh, 2005; O'Gorman, 2005a; O'Gorman, 2005b)

It has also been established that in the USA, women make an important economic contribution in sectors such as high technology and construction, and are setting up businesses at a faster rate than men (Irish Scientist, 2002). However, generally, in Ireland women are still to be found in service type businesses with low growth intentions (Fitzsimons et al, 2004).

If Irish women started businesses at the same rate as women in the USA it would have the effect of increasing the overall level of female entrepreneurs in Ireland by another

56,000 (GEM, 2003). The low level of female entrepreneurs in Ireland has led to researchers such as Richardson and Hynes (2006) commenting that both the Irish and World economies are losing out on a valuable talent. Coupled with this is the fact that female entrepreneurs, in Ireland, are more likely to start service related as opposed to high-tech enterprises. It is important, therefore, to determine why more women in Ireland do not start-up high technology enterprises. Numerous researchers including Anna, Chandler, Jansen and Mero (2000) and Coleman (2002) have stressed the need for this type of research.

Thus, this current research is unique as it seeks to understand why women, in Ireland, choose to start their business in a traditional or non-traditional industry sector.

It is important at this point, therefore, to define what the terms *traditional* and *non-traditional* refer to. Traditionally, women have started businesses in certain type of industry sector, for example service, retail and caring related sectors, and this is what is referred to, throughout this thesis, as a traditional business or a traditional industry sector. Numerous researchers have recognised that businesses owned by females, traditionally, tend to be concentrated in the retail and service sectors (see for example Hisrich and Brush, 1984; Buttner and Moore, 1997; Anna, Chandler, Jansen and Mero, 2000; Coleman, 2002; Henry, Johnston and Watson, 2004, Mattis, 2004; Still and Walker, 2006). This is given further credence by the Centre for Women's Business Research (2006) which found that the largest share of women owned enterprises are to be found in traditional sectors including services (69%) and retail (14.4%). There are a number of characteristics that are inherent to the traditional businesses that women start. These include a smaller size, a slower growth rate, lower barriers to entry and less innovative.

For the purpose of the current research, therefore, if a female entrepreneur operated a business in any of the following industry sectors they were considered traditional:

- Manufacturing food products
- Manufacturing textiles

- Manufacturing non-metallic materials
- Retail, not vehicles
- Education
- Health services
- Social work
- Social services, not children or elderly
- Other personal services

On the other hand, it has been recognised that, generally, women business owners are not found in high technology sectors and, thus, for the purpose of the current research these are referred to as non-traditional female enterprises and industry sectors. It has been acknowledged, that in the case in Ireland, women tend to be involved in locally traded services with low growth aspirations rather than in knowledge based businesses with high growth and export potential (Fitzsimons et al, 2004). High technology enterprises tend to be characterised by a high level of growth, innovativeness and a strong emphasis on R&D. Therefore, for the current study a non-traditional or a high technology enterprise is one which operates in the following industry sectors:

- Materials technology (ceramics, composite materials, plastics, optical fibres, new superconductors, semiconductors)
- Computer applications (software development, robotics, CAD/CAM and AMT)
- Telecommunications
- Energy (alternative energy, energy efficiency)
- Biotechnology (genetic engineering, enzymes, monoclonal antibodies and diagnostics, biosensors)
- Pharmaceutical and medical products (pharmaceuticals, medical devices)
- Aerospace/Aviation
- Computers and office machinery
- Electronics-communications
- Scientific instruments

- Electrical machines /equipment
- Chemicals

The purpose of this current research is to gain an understanding of why female entrepreneurs select one industry sector over another. Gaining an understanding of this may help to identify the barriers that hinder female entrepreneurs from starting up high technology enterprises. As indicated earlier if more female entrepreneurs were encouraged into the high technology, high growth industry sectors this may increase the overall level of entrepreneurship in Ireland, leading to greater levels of economic growth.

1.3 Research Question and Objectives

Primarily, this study asks's the question:

What are the factors that influence female entrepreneurs to enter traditional or non-traditional industry sectors?

The associated objectives of this research are:

1. To discover if the backgrounds, education, experience and other antecedent influences of female entrepreneurs who start-up high technology enterprises differ from those females who start-up more traditional service related enterprises
2. To identify the motivating factors that encourage women to enter high technology industry sectors versus those that encourage women to enter traditional service oriented industry sectors
3. To ascertain do female entrepreneurs perceive high technology industry sectors to be male dominated

4. To establish if there is a difference in gender orientations between high technology female entrepreneurs and their traditional counterparts

The methodology employed in this study is qualitative in nature and is underpinned by the phenomenological philosophy. The primary data for this study was gathered through the use of semi-structured interviews. These interviews were conducted with female entrepreneurs from both high technology industry sectors and traditional industry sectors, who were deemed to have met the research criteria necessary for inclusion in this study. The conducting of semi-structured interviews enabled the researcher to ascertain in-depth detailed information related to personal, motivational and attitudinal factors.

1.4 Structure of the Thesis:

This thesis begins by reviewing the areas of literature pertaining to the research question and objectives. This literature review is covered in Chapter Two and is divided into three main sections. The first section relates to entrepreneurship and the entrepreneur and provides definitions for both of these terms. This section also examines the traits that are inherent to the entrepreneur.

The second section of this chapter contains an in depth review of the female entrepreneur. Such factors as the female entrepreneur's family background, education, socialization, previous occupational experience and business skills are explored. This is followed by a review of the literature on the reasons why women start a business and the barriers that women face when they decide to start a business. Finally, this section examines the type of enterprises that women have traditionally started and the characteristics of these.

The high technology enterprise and the high technology entrepreneur are the focus of the third section of the literature review chapter. This involves defining the high technology enterprise and exploring the aspects that are associated with this type of enterprise. This

is followed by an examination of the high-tech entrepreneur. This chapter concludes with a comparison between the high technology and the traditional enterprise.

Chapter Three of this thesis presents the research methodology that was employed in this study. This chapter clarifies the research problem and identifies the research question and associated set of research objectives. Following on from this the selection of research philosophy and eventual choice of data collection method is provided.

The primary findings of this research are presented in Chapter Four. Chapter Five will then revolve around a discussion of these findings. The major findings and insights which arose from this research will be highlighted with particular emphasis placed on the differences which exist between female entrepreneurs from high technology industry sectors and their traditional counterparts.

The final chapter of this thesis, Chapter Six, draws conclusions from the discussion of the research findings. This chapter will also conclude with the limitations associated with the current research and make recommendations for future research into this area.

1.5 Limitations of the Study

Primarily, this research was limited by the number of interviews that were conducted with female entrepreneurs. This has constrained this researcher from generalising the research findings to a greater extent. The current study was also limited to the South East of Ireland, a more extensive study could have been conducted had female entrepreneurs from different regions in Ireland been selected. Finally, the lack of an official national or regional database which separated business owners, by gender, acted as a limitation in obtaining a sample for research. These and other limitations are presented in greater detail in Chapter Six.

1.6 Benefits of the Study

The current research contributes to the growing body of literature on female entrepreneurship, an area which is considered to be under-developed. Also it is, to the best of this researcher's knowledge, a unique study, as it offers many insights which will be of benefit to a variety of individuals and organisations including those who educate, support and design policies for female entrepreneurs. This research will, therefore, have implications for researchers and teachers of entrepreneurship, educators in general, enterprise support agencies, policy makers and female entrepreneurs.

1.7 Conclusion

This chapter has provided a background to and rationale for the current study. It then informed the reader of the research topic, the research question and the set of research objectives. An outline of the structure of the thesis was also provided. Finally this chapter presented the limitations and benefits associated with the current study. Chapter Two of this thesis will address the relevant areas of literature pertaining to the research topic.

Chapter Two:

*Literature
Review*

Chapter 2: Literature Review

2.1 Introduction

This chapter will review the literature pertaining to the research question and associated set of research objectives. As such this chapter will be divided under three main headings which reflect the major themes that arose from the conceptual framework. Therefore, the following sections are divided into, entrepreneurship, female entrepreneurship and high technology.

The first section of this chapter will begin by examining the characteristics of entrepreneurship and the entrepreneur to determine if the same traits and characteristics of general entrepreneurship apply to females as to males. Entrepreneurship, in general, is regarded as a male dominated arena or as Thompson (1999) stated “entrepreneurs are regarded as businessmen rather than women” (p. 209). Thus, the traits of an entrepreneur are often seen to be more masculine than feminine. Therefore, it is important to gain an appreciation of these traits and to understand if this may act as a deterrent for women entering industry sectors which are synonymously male.

This research seeks to understand the influences which may affect a female entrepreneur’s decision to enter a particular industry sector. As the female entrepreneur and her choice of industry sector are the focus of this study there are many issues that need to be addressed to determine their influence, if any, on a woman entrepreneur’s choice of industry sector. This will involve looking at the influences that may affect a woman prior to the start up of her business and to determine if these influences affect the type of enterprise that she starts up. The influences that will be examined include educational background, socialisation, occupational experience, business skills and motivations for starting the business. This researcher also felt that it was important to study the barriers that a woman faces when starting her business to determine if these have any effect on the type of business started. This section also addressed the type of

business that female entrepreneurs have traditionally started and the characteristics of these businesses.

The final area to be considered in this chapter will be the high technology enterprise. This involved looking at the characteristics and definitions of the high technology enterprise. These factors are examined to determine if they may influence a woman's decision to enter high-tech sectors as it is central to this study to establish why more women are not entering high technology industry sectors, or as the Goodbody report (2002) stated "women entrepreneurs... are not often found in the wealth-creating sector but rather in traditional services." The literature on female entrepreneurship does not fully investigate why women start up the types of enterprises they do. However, it is important to understand why women tend to start small businesses in industries such as service and retail which offer limited opportunities for growth and profitability (Coleman, 2002). This present study aims to determine why this is so. This chapter will then conclude with a brief synopsis of the differences between the high technology entrepreneur and her enterprise and their traditional counterparts.

2.2 The Entrepreneur

The European Commission (2003) in its Green Paper described "entrepreneurship as a mindset that incorporates risk-taking, creativity and/or innovation with sound management, to create or develop economic activity, within a new or existing organisation" (p. 6). However, in the literature there is a constant debate as to whether entrepreneurs are born with these natural entrepreneurial qualities or whether these can be taught to an individual. An early study by Shapero (1975) found that entrepreneurial qualities cannot be taught and therefore that business schools should not be regarded as "breeding grounds" for entrepreneurs. The psychological school of entrepreneurship agrees with this sentiment as it believes that certain values and needs are necessary conditions of entrepreneurship, and as these are instilled in early in life, these characteristics are hard to introduce in schools and universities (Cunningham &

Lischeron, 1991). McCarthy (2000) furthered this argument as she has stressed that entrepreneurs are born and cannot be made. However, in contrast to this many researchers believe that such thinking does not allow for learning or nurturing to take place (Madsen, Neergaard and Ulhøi, 2003). Hisrich (1990) and Haynes (2003) are of the same opinion as they believe that background, education, training and previous work experience of an individual can encourage entrepreneurial qualities. Chell and Allman (2003) have also acknowledged that entrepreneurship can indeed be taught and in fact they believed that education can actually enhance the entrepreneurial experience.

The entrepreneur is an integral part of the business, as it is he/she that influences the type of industry and to what level that business grows to. Entrepreneurs are, therefore, often regarded as exceptional individuals (McCarthy and Leavy, 1999), who have unique values and attitudes towards work and life that differentiate them from non-entrepreneurs (Cunningham and Lischeron, 1991). The psychological school of thought has proposed that an individual's needs, values, attitudes and beliefs are what drive them to innovate and achieve and ultimately to take the risks needed to be successful (Cunningham and Lischeron, 1991).

The Goodbody report (2002) defined an entrepreneur as “one who creates and grows new enterprises and demonstrates characteristics of risk-taking and innovation” (p.3). The European Commission (2003) adds to this further by stating that there are certain characteristics associated with entrepreneurship including a willingness to take risks, a desire for independence and self-realisation.

Shapiro (1975) acknowledged that when one goes into business one trades the safe and familiar for the unknown and risky and, thus, the entrepreneur is commonly referred to as a risk-taker. Mill (1984) as cited in Cunningham and Lischeron (1991) suggested that it is this risk-bearing quality which is the key factor that differentiates entrepreneurs from managers. Cromie (1994) agreed with this statement as he suggested that entrepreneurship is a unique occupation which is characterised by the risk-taking qualities of the entrepreneurs. McCarthy (2000) also found in her study of Irish

entrepreneurs that risk taking is a function of personality but that the behaviour exhibited by risk takers reflects “organisational context and history.” As a result of this the entrepreneur may perceive risk in different ways and may even alternate between being risk prone and risk averse over time (McCarthy, 2000). However, other authors have suggested that too often entrepreneurs have been stereotyped into the risk-taker and disgruntled worker categories and ignored the fact that some individuals start a business to take advantage of an opportunity or as a result of previous experience or background factors (Stoner and Fry, 1982).

McClelland (1961), on the other hand, challenged the stereotypical image of the entrepreneur as he found that entrepreneurs prefer moderate risk situations and try to avoid situations of extreme risk or uncertainty. Similarly, Gilmore, Carson & O’Donnell (2004) present a picture of the entrepreneur as a person who seeks to minimise risky situations. Therefore it would appear that successful entrepreneurs are the ones that take calculated risks rather than risk everything without thinking (Irwin, 2000).

Delmar (2000) suggested that the risk-taking qualities of entrepreneurs are strongly linked to their need to achieve as “it takes into account the perceived risk of the situation as well as the perceived level of competence (p. 142).” McClelland (1961) postulated that entrepreneurs have a distinctively higher need to achieve. It has also been acknowledged that individuals will be more successful when they have a strong desire to achieve (Littunen, 2000). Irwin (2000), therefore, described entrepreneurs as above all else “*achievers*.” However McClelland (1961) has also stated that entrepreneurs may overestimate their chance of success due to their high level of confidence. Previous studies, such as Hisrich and Brush (1984), Cromie (1987a; 1987b) and Hisrich (1990), have found that both men and women cite the need for achievement as one of the greatest motivators to entrepreneurship. It is this need to achieve that drives entrepreneurs and which can ultimately lead them to leave the large organisation to start their own business (Cunningham and Lischeron, 1991).

Innovativeness is also an essential element of entrepreneurship. The classical school of thought has stressed the importance of innovativeness for entrepreneurship (Cunningham & Lischeron, 1991). This is supported by Starcher (2004) who believed that entrepreneurship is fundamentally about the creation of something new, be it markets, products or services. Fillis (2004), however, identified that innovativeness can relate to the possibility of either creating new business or greatly improving an existing business. This idea of “newness” in innovation is extremely important in the entrepreneurial literature - whether it is creating something totally new or advances an existing product - as it has been suggested that this is the key role in new venture creation.

Entrepreneurial behaviour is also often characterised by a “taste for independence” (European Commission, 2003). Van Gelderen and Jansen (2006) believe that one of the most important drivers of entrepreneurship is the desire for independence and in fact the success of the enterprise is instrumental in achieving this freedom. Earlier research by Shapero (1975) similarly found that entrepreneurs desire independence and are motivated by the desire to be their own man or woman. This is consistent with more recent research which found that the strongest reason given by potential business owners for founding their own businesses was the “desire to be one’s own boss” (Fielden, Davidson and Makin, 2000).

The above examination of the entrepreneur and associated characteristics has highlighted certain factors that may attract a person to a particular industry. However, there are other influences which may impact on an individual’s choice of industry sector. The next part of this research will, therefore, study the female entrepreneur and examine other influences from a female perspective. This is important as it has been suggested that there are differences in both the personal and business goals of men and women (Brush, 1992; Fischer, Reuber and Dyke, 1993; Carter, Williams and Reynolds, 1997; Verheul and Thurik, 2001) and this may account for the variation in industry sectors of men and women.

2.3 The Female Entrepreneur

Carter, Henry, Ó Cinnéide and Johnston (2007) have stated that “female entrepreneurship, as a subject of academic research, has attracted a considerable amount of attention in recent years, and is fast becoming a primary focus for scholars, practitioners and governments alike” (p.1). This is due to the fact that since the 1980’s there has been a dramatic increase in the number of women setting up in business and it has been noted that they have become the fastest growing segment within the small business sector (Moore and Buttner, 1997). In fact more recent research established that women-owned businesses now account for 50% or more of all businesses in the USA (Centre for Women’s Business Research, 2006).

Despite this, some academics such as Carter, Anderson and Shaw (2001) and Carter and Marlow (2006) consider the area of female entrepreneurship to be under-developed. This may be due in part to the fact that entrepreneurship is regarded to be a male activity and that the literature surrounding this topic reflects this (Brush, 1992). Moore and Buttner (1997) have noted that “.... only recently have investigations of female entrepreneurship moved beyond studies of entrepreneurship and self employment that were all male” (p. 14).

The OECD (2001) reports that women entrepreneurs’ contribution to economic activity and employment is increasing as women owned businesses are becoming a rapidly growing sector in the business world. In the same report it was also found that women are starting businesses not only in industries where they were traditionally found but also in less female orientated industries, such as manufacturing, construction, financial services and communication. Contrary to this, however, Fitzsimons, O’Gorman, Hart and McGloin, (2004) found that women in Ireland tend to be involved in locally traded services with low growth aspirations rather than in knowledge based businesses with growth and export potential.

During the last number of years the Irish GEM team have continually highlighted the low level of women involved in entrepreneurship in Ireland yet the GEM report (2004) found that successful entrepreneurs are perceived to have a very high status by 85% of the Irish population. However, in spite of this, few women in Ireland are active as entrepreneurs. This is supported by Fitzsimons et al's (2004) study which found that Ireland has a strong case of gender imbalance among those active as entrepreneurs: again there are low levels of female entrepreneurs (3.7%) and higher levels of male entrepreneurs (12.5%). So in Ireland, for every 100 male entrepreneurs, there are only 29 female entrepreneurs.

Henry and Kennedy (2002) state that women in the USA account for 38% of all new businesses while in Ireland this percentage is considerably lower at 15%, with some reports suggesting that this figure may be as low as 7.5%. An early study by Bloom (1986) indicated that there was a growth in the number of females starting businesses in the United States because capital for starting a business is more readily available and it is also easier for women to borrow money. Statistics from the USA, also suggest that women there are making a significant contribution to economic development in sectors such as high-technology and construction and are actually starting up businesses faster than men (Irish Scientist, 2002). This is given further credence by GEM research (2003), which states if Irish women were to be active as entrepreneurs at the same rate as women are in the United States, there would be another 56,000 entrepreneurs in Ireland. Hence, women should be seen as a valuable untapped source of potential entrepreneurs for the future (Irish Scientist, 2002).

Despite all this, little attention has been given to the needs of women entrepreneurs who are largely invisible in mainstream entrepreneurial research (OECD, 2004) and the majority of studies have also ignored the fact that female business owners are not a homogeneous group (McKay, 2001; Jalbert, 2000; Ministry of Industry, Employment and Communications, 2001). The problem with this approach Carter and Allen (1997) suggested is that it does not differentiate between successful entrepreneurs and those who view self-employment as a means of supplementing income.

As Henry and Kennedy, 2002; GEM, 2003 and 2004; and Fitzsimons et al, 2004, have shown Ireland has low levels of female entrepreneurship and the majority of women choose to start a business in traditionally female industry sectors. It is therefore extremely important to understand the influences which may affect a woman's decision to enter a specific industry because as Hisrich & Brush (1984) stated the risk and effort involved in starting a business is made even greater when the woman is entering a male dominated industry.

2.3.1 Profiling the Female Entrepreneur

In general, fifty years ago, a woman graduated from high school, got married, had children and stayed at home (Bloom, 1986) and women entrepreneurs were either divorced, widowed, or at home with small children starting their business out of financial necessity (Buttner, 1993, p. 2). As the number of women entering self-employment increased many authors devised profiles of the typical female entrepreneur (Hisrich and Brush, 1984; Brush and Hisrich, 1991; Buttner, 1993; GEM, 2004), the following, however, appears to be the most commonly referred to profile of a female entrepreneur:

She was typically the first-born child of middle class parents - a self-employed father, and mother who does not work outside the home. After obtaining a liberal arts degree, the typical women entrepreneur marries a college educated man who works in a professional or technical capacity. She then has children and works as a teacher, administrator or secretary. She does not start her own business – most likely a service-related one - until the age of forty or later (Hisrich & Brush, 1984, p. 35).

The above profile highlights many of the antecedent factors (such as family background) that this current study will examine to determine the extent, if any, of their influence on women's choice of industry because as Brush and Hisrich (1991) believed antecedent influences are important for both the survival and growth of a business. Therefore the main

antecedents that will be covered in this current study are the family background, the educational level, previous occupational experience and business skills.

2.3.1.1 Family Background

Family influences are an important antecedent for potential entrepreneurs in their decision to start a new business and there is evidence, in some cases, that a tradition of entrepreneurship within a family can encourage potential female entrepreneurs towards self-employment (Goffee and Scase, 1983). The Goodbody report (2002) also highlighted the importance of an entrepreneurial family background as an indicator of future entrepreneurial activity. Family influences appear to be even more significant for women as research shows that family has a greater influence on females than on males (Orhan and Scott, 2001). Mattis (2004) also stated that family is a major influence on women starting a business, with many family members acting as role models for the potential entrepreneur.

In addition to this many profiles of female entrepreneurs mention the presence of an entrepreneurial parent. Female entrepreneurs are actually four times more likely to have had an entrepreneurial parent, father and/or mother, than an ordinary person (Watkins and Watkins, 1984). Mattis (2004) reinforces this finding as she established that parents were the most frequently cited role models for women in business. However, a previous study found that it was the husbands of female entrepreneurs which were cited as the most important source of support. Contrary to this Watkins and Watkins (1984) were of the opinion that if a female's husband was involved in the business; it was in a controlling capacity rather than a supportive role.

Another aspect which is often mentioned in relation to an entrepreneur's family background is their birth order. Hisrich and Brush in their 1984 study of female entrepreneurs found that 50% of them were the first born child. In their study, Watkins and Watkins' (1984) results also showed that half of their sample was first born. In the

same study, they indicated that the birth order may have a positive influence on potential entrepreneurs as the first born child generally has a positive attitude towards responsibility-seeking and achievement.

2.3.1.2 Education

Hisrich (1990) stressed that a good education is a prerequisite for entrepreneurship as the entrepreneur will feel more capable of forming and managing a business if they have had the relevant formal education. This would seem to be true as other researchers have found that women business owners are generally better educated than the average woman (Watkins and Watkins, 1984; Mattis, 2004). Research has also shown that the higher the level of education the more likely the woman is to engage in entrepreneurial activity (GEM, 2003, p.13).

Birley, Moss and Saunders (1987) have indicated that the educational level of women entrepreneurs is equal if not better than that of men even, although, their fields of study are usually very different as men tend to have more production-related business education (Fischer, Reuber and Dyke, 1993). However, according to other researchers, female entrepreneurs are actually at a disadvantage compared to their male counterparts as they are less likely to have four or more years of college (Boden and Nucci, 2000). A more recent study supports the latter as it shows that, generally, women are less likely to have attended college and have fewer years of business experience (Coleman, 2002).

Many authors have argued that women do not actually possess the relevant education to enter traditionally male dominated sectors such as manufacturing or construction as is shown in the fact that over two thirds of women operate in the service sector which can be seen as a reflection of women's education. This is highlighted by the fact that the majority of women hold degrees in the liberal arts (Hisrich & Brush, 1984; Brush and Hisrich, 1991; Buttner, 1993). A more recent study by McClelland, Swail, Bell and Ibbotson (2005) further substantiates this argument as they found that the majority of the women in their study hold a tertiary level degree but from this only a small number held degrees in business,

engineering or other technical subjects. Similar results have also been found by Menzies, Gasse and Diochon (2003) who found that education majors differed by gender.

Hisrich and Brush (1984) have also argued that women's education does not provide them with encouragement or advice to actually enter high technology industry sectors, thus, leaving them with no option but to start a small business with little growth potential. Watkins and Watkins (1984) furthered this argument as their findings clearly showed that "almost nothing that had been studied in the educational system *per se* was perceived as relevant to the choice of eventual business founded and operated" (p. 27). They believed that this was a direct result of pressure to pursue liberal arts subjects during women's schooling. Therefore, the liberal arts, non-practical education of many women acts as an obvious barrier for women who may attempt to enter traditionally male dominated industries (Hisrich and Brush, 1984).

2.3.1.3 Previous Occupational Experience

Research has shown that the woman entrepreneur with previous experience in her field of business will be far more likely to survive and be successful than a woman who does not have this direct experience (Brush and Hisrich, 1991; Buttner, 1993). Yet there also appears to be mixed views whether prior experience is directly or indirectly linked to the type of business started (Brush, Carter, Gatewood, Greene and Hart, 2004). For example Hisrich (1990) and Fielden, Davidson and Makin (2000) found that individuals tend to establish businesses in areas that are familiar to them, while other studies have shown that women may enter industry sectors in which they have no relation to, or any previous work or managerial experience (Watkins & Watkins, 1984; Fielden, Davidson, Dawe and Makin, 2003). Such was the case in Watkins and Watkins (1984) study which showed that 50% of women entrepreneurs had no prior experience in the area of their business venture compared to a mere 5% of men.

It has been noted, however, that there is a difference between the levels of prior work experience between men and women as women are said to lack the same amount of business experience as their male counterparts (Fischer, 1992). This point is further reinforced by Carter et al (1997) who brings to our attention the fact that women owned businesses are more likely to fail than businesses owned by men because women start on a smaller scale and make less use of previous business experience that they have gained. Menzies et al (2003) on the other hand found that no differences existed between men and women with regard to total number of years working experience, years of experience in the industry of their current start up or years of management experience. In fact men and women both had an average of ten years industry experience in their current field of business.

Birley (1989) maintains that as women's prior experience is in traditional industry sectors this reflects the type of sector in which to start their business. However, McClelland et al (2005) found that prior industry experience of women is not solely limited to "traditional sectors" as described by Birley (1989). Grundy and Welsh (2001) argue as well that women business owners of high growth businesses have fewer years of industry experience than those in low growth sectors.

2.3.1.4 Business Skills

According to Still and Timms (2000) "the skills gap has always been an area that is seen to be more inhibiting to women as opposed to men" (p. 6). Some research suggested that women do not possess the relevant skills needed to successfully manage their enterprises (Buttner, 1993). In particular, women are said to be extremely weak in areas such as finance, sales and marketing planning and organising (Hisrich and Brush, 1984; Still and Walker, 2006).

Women lack the financial skills to deal with expenses, cash-flow planning and raising capital and this tends to be particularly problematic at start up (Schwartz, 1976 and Hisrich and Brush, 1984). However, women themselves believe that their strengths lie in idea generation, product innovation and people skills (Hisrich and Brush, 1984; Brush and Hisrich, 1991; Still and Walker, 2006), which is consistent with other research which has found that women have a more customer focused approach than men (Brush, 1992; Carter et al, 1997). Brush and Hisrich (1991) have also found that the difference between no growth women owned businesses and those in growth businesses are those women that are adept at managing people and delegating work.

2.3.2 Reasons why Women Start a Business

In order to understand why women start a business in the industry sectors that they presently do, it is necessary to examine their motives for starting that business in the first place. This can have a major impact on the type of business that they establish as for some women there is no other alternative but to start their own businesses so that an “income can be obtained in a manner compatible with other obligations” (Goffee and Scase, 1983, p. 632) and they may not have the desire or resources to “build an empire” (Still and Walker, 2006).

Many authors have argued that while women and men are similar across a range of demographic characteristics, business skills and some psychological traits, there appears to be a general consensus that greater differences than similarities exist between the sexes (Cromie, 1987a; Brush, 1992). An important distinction between men and women is that, “for men, being an entrepreneur is a business strategy while for women it’s a life strategy” (Noble, 1986 as cited in Buttner, 1993, p.60). Buttner (1993), herself, echoed this sentiment as she suggested that men generally start a business for economic reasons while women start a business for family needs and see it as a life choice. This is consistent with the fact then, that male and female entrepreneurs differ with respect to their personal and business goals and their tendency to start and run businesses in

different sectors (Brush, 1992; Fischer et al, 1993; Carter et al, 1997; Verheul and Thurik, 2001).

Other evidence has suggested, however, that women and men are motivated to start businesses for similar reasons (Cromie, 1987a and 1987b; Birley, 1989; Brush, 1992; Buttner, 1993; Buttner and Moore, 1997; Carter, 2000; Orhan and Scott, 2001), such as *need for achievement* (Schwartz, 1976; Hisrich and Brush, 1984; Cromie, 1987a and 1987b; Buttner, 1993; Hisrich, 1990), *the desire for independence* (Schwartz, 1976; Hisrich and Brush, 1984; Cromie, 1987a and b; Buttner, 1993; Hisrich, 1990), and *job satisfaction* (Schwartz, 1976; Cromie, 1987a and 1987b).

These positive or *pull* factors are associated with motives of choice (Orhan and Scott, 2001). Self-achievement is a major pull factor for female entrepreneurs with women stating they want a challenge (Orhan & Scott, 2001; Buttner and Moore, 1997). Through entrepreneurship women want the opportunity to stretch their skills and experience the freedom to determine their destiny (Buttner and Moore, 1997, p. 41). This is consistent with the notion that women deliberately choose self employment, rather than be forced into it through necessity (Orhan and Scott, 2001). An interesting finding is that it is women in traditional industries that are more likely to be pulled towards entrepreneurship and an industry which reflects more female type businesses (Anna, Chandler, Jansen and Mero, 2000). However, Orhan and Scott (2001) found that those women who ignore male and female stereotypes will be more likely to be pulled towards entrepreneurship (Orhan and Scott, 2001).

Push factors, on the other hand, are those motives associated with starting a business out of necessity or where the woman is forced into pursuing her business idea. These can be such negative forces as redundancy, unemployment, frustration with previous employment, the “glass ceiling effect”, the need to earn a reasonable living and a work/life balance. Goffee and Scase (1983) have found that in a small number of cases women set up a business to “combat male dominance.” Orhan and Scott (2001) support this idea as they suggest that women enter self-employment due to a combination of male

domination and push factors. In such cases self-employment may be a last option for many women (Catley and Hamilton, 1998). Mattis (2004) believes the number of women who choose entrepreneurship because of negative “pushes” from their former jobs is significant and an important finding is that push factors have played a larger role in women’s decisions to start a business today, more than in previous generations.

There are many other motivations for starting a business, however, which are believed to be gender specific. Economic necessity is one such motivation and is often linked to a woman’s desire to ensure the financial security of her family. Fielden et al (2003) found that women with domestic responsibilities believed that business ownership appeared to be the only way they could make a sustainable living around other family commitments. It has been well documented in the literature that through self-employment women are able to combine family life with their careers (Bloom, 1986; Cromie, 1987a and 1987b; Buttner, 1993; McKay, 2001; Orhan & Scott, 2001; McClelland et al, 2005). Boden (1996), therefore, believed that children are a positive influence on a woman’s choice to enter entrepreneurship as otherwise she would not need this flexibility to “fulfil the dual roles of parent and entrepreneur” (Cromie, 1987a, p. 259).

Watkins and Watkins (1984) suggested that many women choose self employment because “no other logical alternative exists which could fulfil women’s overriding motivational requirements” (p. 30). Mattis (2004) provided us with further evidence of this as she found that the majority of women in her study choose entrepreneurship to be in charge of their own destiny. Entrepreneurship provides women with the opportunity to be their own boss, to escape the glass ceiling and dissatisfaction with their current careers. In this sense, Mattis (2004) does maintain that the move into entrepreneurship may be because no other satisfactory career option exists for women, but she does not claim that it is illogical.

In conclusion Shane, Kolvereid and Westhead (1991) and Ministry of Industry, Employment and Communications (2001) argued that there are many reasons why an entrepreneur may start a new business as the decisions people make are complex and

unique. Ironically, however, it is the very motives that lead a woman to start a business, such as female skills, little capital and balancing life and work, which can in fact restrain a woman's business from being as competitive as men's (Loscocco and Robinson, 1991).

2.3.3 Barriers Associated with Female Entrepreneurship

Many studies have drawn attention to the presence of gender specific barriers and whether they exist or not. Watkins and Watkins (1984) believed that women's choices of business sector are determined by which industry posed the least barriers to entry. Thus as non-traditional industry sectors have higher entry barriers that women may choose the more traditionally female sectors based on the low barriers to entry (Anna et al, 2000). Fielden et al (2003), however, believed that because of the barriers that women will inevitably face during start up that this makes them more motivated than their male counterparts. The following sections will examine a number of factors, namely availability of finance, access to networks and perceptions related to the masculinity of entrepreneurship, which may act as barriers for women entrepreneurs starting a business.

2.3.3.1 Finance

It has been found that women business owners often cite access to capital and finance as a problematic area for business start-up, growth and development (Schwartz, 1976; Hisrich and Brush, 1984; Loscocco and Robinson, 1991; Fielden et al, 2000). According to Fielden et al (2000) this problem was notably worse for those in the more male orientated manufacturing industry sector. However, Fielden et al also go on to say that obtaining finance is a problem for all new business owners. Contrary to this Brush (1992) regarded the financial aspects of venture start-up and management as the biggest obstacles for all female entrepreneurs. This is supported by Carter (2000) as she found that "women may be disadvantaged in their ability to raise start-up finance, as guarantees required for external financing may be beyond the scope of most women's personal

assets and credit track record and this in turn may lead to further disadvantages for their business” (p. 174). According to Hisrich and Brush (1984) the problems, including finance, that women encounter are attributable to a lack of relevant business education and work experience.

It has been proven in many studies that women use less capital in starting a business than men (Brush, 1992; Carter et al, 1997; Carter and Rosa, 1998; Boden and Nucci, 2000; Verheul and Thurik, 2001). This may be because women have fewer financial resources available to them than men and that they are more reluctant to borrow large sums of money (Carter, 2000). Due to this women tend to rely on borrowing money from family and friends (Henry et al, 2004; Still and Walker, 2006) rather than borrowing from formal sources. This is consistent with findings from Shapero’s 1975 study as he also found that most capital comes from informal sources such as the entrepreneurs own resources or from family and friends rather than formal institutions. Women may also take out personal loans to finance their business, an option which can put themselves and their families at risk (Fielden et al, 2000) and which women may not do as willingly as males. As it is even more difficult for entrepreneurs operating in high-tech industry sectors to raise finance (Colombo and Delmastro, 2001; European Commission, 2002b), women may find that they do not have the finance to start such a business. As Carter (2000) stressed the under capitalisation of a business at start up can have a long term effect on business survival and growth.

Women and men differ greatly both in their attitudes to debt and also the manner in which they finance their business (Verheul and Thurik, 2001). According to Watkins and Watkins (1984), bankers and small business owners treat female entrepreneurs less seriously than males. They believed that this may be because women owned businesses tend to be clustered in the service and retail industry sectors and they also tend to be smaller and have lower growth and profit potential. On the other hand, Carter et al (1997) and Coleman (2002) found that formal financial institutions are not biased against women. The GEM report on women and entrepreneurship (Minniti, Arenius and Langowitz, 2004) summarised the main differences between the sexes in saying “the

majority of businesses started by women employ less start up capital as compared to men, used known technology and targeted existing markets” (p. 13). This suggests that women entrepreneurs may take a more conservative approach to business formation, perhaps because of their higher involvement in necessity driven entrepreneurship.

There is a notion also that venture capitalists expect a quick return on investment and that this may not fit with women’s more conservative approach to business (Minniti et al, 2004). This is consistent with Buttner and Moore’s (1997) findings which showed that traditional businesses may suffer due to their slow growth rates.

2.3.3.2 Networking

Entrepreneurial networking has been defined as those relationships that an individual develops and utilises, consciously or subconsciously, to progress a particular enterprise, whether it is to establish a new venture or to develop an existing one (McGowan and Hampton, 2006). It is regarded as a critical element for entrepreneurs as it provides access to capital/loans, advice and information needed for initiating and operating a new venture very easily (Buttner, 1993). Networking also allows the entrepreneur to make new contacts from the business world, thus, providing important sources of both new knowledge and assistance. In particular a number of researchers have stressed the importance of networking for women and believe that female entrepreneurs should in fact actively engage in networking activities more than their male counterparts (Rosa and Hamilton, 1994), because as Moore (1997) stated “networking is continuous, a learned skill... that is a vital part of business start-ups and established businesses” (p. 253, cited in Fielden et al, 2003).

However, it has been well acknowledged in the literature that women business owners are often excluded or “*left out of the loop*” of these male networks (Travers, Pemberton and Stevens, 1997; Aldrich, Brickman Elam and Reese, 1997; Gelin, 1998). Fielden et al (2003) argued that women are left out of many of these networks because they are based

on a male model of business which does not take account of the responsibilities and commitments that female entrepreneurs have outside of their business life. This reasoning is in line with the sociological perspective which acknowledges that women are constrained by domestic responsibilities which limit their access to networks (Aldrich et al, 1997).

As a result of this women have had to develop different strategies than men because of the barriers they have had to overcome (Buttner, 1993). Men tend to form more “instrumental” relationships and see their business as independent from the rest of their lives (Buttner, 1993; Aldrich et al, 1997), while women often prioritise building personal relationships (Buttner, 1993; Gelin, 1998)

Brush (1992) is of a similar opinion as she believed that women perceive business networks to be more like a personal relationship while men, on the other hand, view them as separate economic units. As such Buttner (1993) suggested that women may turn more often to other women as a source of information and advice. However, Aldrich et al (1997) believed that women’s networking is only marginally different from that of men and this is related to the fact that a female entrepreneur is more likely to turn to a woman rather than a man for assistance. This may have implications in industry sectors where women are not as prevalent and it has been acknowledged that networking plays a crucial role in the high technology industry as “public action in the form of the creation of an environment conducive to increased networking among regional actors becomes critical” (Landabaso, 2000).

2.3.3.3 Perceptions of Masculinity

It has been acknowledged that even in the twenty first century that entrepreneurship is still regarded as being male dominated (Boden and Nucci, 2000; Gelin, 1998; Ljunggren and Alsos, 2006). Further to this Ljunggren and Alsos (2006) also suggested that our understanding of the term “entrepreneur is so masculine that we find it hard to describe female entrepreneurs along the same dimensions as the male ‘norm’” (p. 104). Therefore,

as entrepreneurship is seen as being a male activity and the traits of an entrepreneur are seen as masculine it is possible that this could deter women from selecting entrepreneurship as a career choice.

Watkins (1982) has stated that “the personal factors traditionally associated with a successful entrepreneurial event are by no means absent from the female population. However, they are generally regarded as less positive characteristics in women than in men i.e. as compromising a woman’s femininity” (p. 131). Coleman (2002) has furthered this argument as she indicated that women become unattractive when they display traits, such as aggressiveness, persistence and determination, which are needed to make a successful business. An interesting finding from recent research has found that association to masculine traits signals higher entrepreneurial intentions; however, similarity to feminine traits is not related to entrepreneurship (Gupta, Turban, Wasti and Sikdar, 2005). On the other hand, Watson and Newby (2006) cautioned that by focusing on mainly masculine attributes we are likely to ignore the potential impact of feminine traits on entrepreneurial activity.

2.3.4 Socialisation

Social feminist theory stipulates that differences exist between men and women due to early and ongoing socialisation (Fischer et al, 1993). This observation highlights the importance that socialisation can play in shaping an individual’s attitudes and perceptions of what constitutes a woman’s role. Bruni, Gherardi and Poggio (2004) acknowledged that the way in which society views women is still an “area of difficulty, as it identifies the primary role of women with family and domestic responsibilities and hence reduces the credibility of woman intent on setting up business in a variety of ways” (p. 269).

Welter (2004) has also indicated that the participation of women in entrepreneurship has been influenced by the value that society places on women in employment. She believed that as a result of past social norms women are still being stereotyped according to their gender. This is highlighted in the fact that “very different general social expectations of

women and men are inoculated during schooling and introduction into working life” (Watkins, 1982, p. 131). This is consistent with more recent research conducted by Shane et al (1991) who believed that socialisation may account for the variation in industry sector and personal and business goals of men and women. Therefore, pre-defined gender stereotypes may cause some women to disassociate themselves from more male orientated industry sectors and choosing traditional type female businesses.

A further result of this gender stereotyping can be seen in a study undertaken by Ljunggren and Alsos (2006) who found that the media portrays women differently to their male counterparts. This research found that when portraying women there was less emphasis placed on financial and hard-core business matters and more emphasis on intrinsic goals, how they view their businesses and their family situation. Ljunggren and Alsos (2006) argued that their research highlights the fact that the media portrait of female entrepreneurs is confirming the subordinated role of women in society.

2.3.5 Women and Type of Industry Sector

For the purpose of this research it is important to understand what type of industry sectors that women are traditionally to be found in and why they have tended to start businesses in these sectors. A review of the literature has revealed, however, that women are starting to change and become more similar to that of their male entrepreneurial counterparts (Birley, 1989). Anna et al (2000) also found that as more women enter the labour market their career development will be more like that of men, which is similar to what is now happening in entrepreneurship. A word of caution has been given by Carter and Marlow (2006) who suggested that this development of the male model of entrepreneurship should not always be lauded as progress.

Research shows that women owned businesses are traditionally found in the retail and service sectors (Hisrich and Brush, 1984; Buttner and Moore, 1997; Coleman, 2002; Mattis, 2004; Henry et al, 2004; Still and Walker, 2006), which tend to have a slower

growth rate and be more labour intensive (Buttner and Moore, 1997). This is supported by Fitzsimons et al (2004) who found that women tend to be involved in locally traded services with low growth aspirations rather than in knowledge based businesses with high growth and export potential.

The service industry has always ranked highly in women's self-employment choice because of their previous occupational experience and the low amounts of initial capital required for start up. It has been acknowledged that the start-up costs for a non-traditional female business is much higher than for a service business (Chell and Baines, 1998 and 2000).

Bruni et al (2004) believed that the majority of women create new businesses in the service area because:

- It is the sector in which they have the most knowledge and experience;
- Women frequently lack specific technical skills and this tends to discourage them from entering manufacturing and high technology sectors and this will also reduce their chances of survival in such sectors;
- As women have difficulty in obtaining capital they may choose activities that require low capital such as those in the service area. (p. 259)

While it is widely accepted that the majority of women do start up service type businesses (Hisrich and Brush, 1984; Buttner and Moore, 1997; Coleman, 2002; Mattis, 2004; Henry et al, 2004; Still and Walker, 2006) it has been argued that women have no other choice but to choose these industry sectors. According to Watkins and Watkins (1984) it is not surprising that women are found in these industries as they may be forced into stereotypically female sectors due to their background and prior experience. Turk & Shelton (2004) also support this view, of women being forced into stereotypical female industries, but they believe that it is out of necessity as they lack the capital, contacts and/or experience to enter the high-tech, high-growth industry sectors. Thus the choice of business can be seen in terms of high motivation to immediate independence tempered by

economic irrationality, rather than a conscious desire to operate a ‘female-type’ business (Watkins and Watkins, 1984).

Pihkala, Vesalainen and Viitala (2000) informed that “female entrepreneurship is changing from the traditional to a more modern type of entrepreneurship, seeking new forms, which are typical of male entrepreneurship: high profile, growth orientated and export based” (p. 1). For example many studies have confirmed that the number of women that are entering more traditionally dominated sectors such as manufacturing, construction, engineering and transportation is increasing (Buttner, 1993 and McClelland et al, 2005). Henry and Kennedy (2002) also suggested that women are in fact setting up ‘new economy’ companies in high-technology, professional services and construction.

This is not surprising as liberal feminist theory hypothesised that women will eventually become more like their male counterparts. This theory is further supported by Birley (1989), who also believed that while women are building successful, albeit traditional, businesses that in the future women will continue to change and evolve to be more like that of their male counterparts (p. 8). This theory may account for the increase in women starting up high technology businesses as women change to become more like their male counterparts. This can be also be clearly seen from statistics from the US which showed that while the majority of women still operate in the service (69%) and retail (14.4%) sectors, there was an increase in the number of women entrepreneurs entering the professional, scientific and technical services industry sectors. However, the outlook is not all positive as the mining, transportation and warehousing, construction, agricultural, information and manufacturing industry sectors all suffered a decrease of women entrepreneurs (Centre for Women’s Business Research, 2006).

2.3.5.1 Characteristics of the “Traditional” Female Enterprise

There are a number of traits which are most often associated with the traditional or low technology businesses that women tend to start. These characteristics include lower

barriers to entry, smaller size, a slower growth rate and less likely to be innovative. The following section will expand on these in an attempt to characterise female orientated business.

Bruni et al (2004) stated that women owned businesses are typically found in “ghettos within entrepreneurship notably in more backward sectors where skills are extensions of what has been naturally learnt through gender socialisation; sectors that are easier to enter and which therefore have little value” (p. 4). Watkins and Watkins (1984) also suggested that a woman’s choice of business sector is determined by which industry poses the least barriers to entry, thus as non-traditional industry sectors have higher entry barriers women will, therefore, choose more traditionally female sectors based on the lower barriers to entry (Anna et al, 2000).

It has also been acknowledged that women perform poorly when compared against quantitative measurements such as jobs created, sales turnover and profitability, and this, Rosa, Hamilton, Carter and Burns (1994) proposed is because women measure their success against the achievement of intrinsic goals rather than on financial or economic goals.

Thus, enterprises which start-up in traditional sectors, including service and retail, tend to be smaller and are often associated with lower status portions of the job market (Aldrich et al, 1997). Previous research has also indicated that women owned businesses do tend to be smaller regardless of whether size is measured by gross revenues, number of employees or profit level (Kalleberg and Leicht, 1991; Fischer et al, 1993). However, one researcher highlighted “the common assumption of many studies is that the slower growth rates of female-owned enterprises is a *problem*, if they could, women would grow their businesses as quickly and have them become as large as those headed by men” (Cliff, 1998, p. 524). However, this may not be the case as Cliff’s own findings have shown that, in fact, many women choose not to grow their business beyond a certain level.

As a result of the smaller size of women owned enterprises, their businesses generally employ fewer people than those headed by men (Kalleberg and Leicht, 1991; Rosa, Carter and Hamilton, 1996; Coleman, 2002). Kalleberg and Leicht found, in fact, that enterprises owned by males have double the number of employees than women. Fielden et al (2003) also acknowledged that women generally set up micro enterprises which employ less than 10 people, however, these businesses now account for 20% of the output in the UK. Showing that women owned businesses have an important economic role to play in the creation of employment.

Another characteristic of traditional female owned enterprises is that they tend to have a slower growth rate (Buttner and Moore, 1997). This is supported by Fitzsimons et al (2004) who found that women tend to be involved in locally traded services with low growth aspirations. On the other hand, Anna et al (2000) have indicated that females who start a non-traditional female business have a greater desire for wealth and, thus, their businesses tend to be more lucrative in terms of sales and growth. As a result of this they have suggested that an entrepreneur who seeks wealth or money would be less likely to enter a traditional industry sector (Anna et al, 2000).

Carter and Allen (1997) argued that while women owned businesses in traditional sectors tend to be smaller in scale and less likely to grow this is because these businesses are typical of “lifestyle businesses” where the female owner actually chooses not to grow. This is consistent with research undertaken by Cliff (1998) who established that some women deliberately select low growth strategies or even strategies which require no growth. According to Cliff (1998),

“Female entrepreneurs are more likely to establish maximum business size thresholds beyond which they would prefer not to expand, and that these thresholds are smaller than those set by their male counterparts.” (p.1)

However, it has also been suggested by Carter and Allen (1997) that this slower growth level is actually due to under capitalisation at start-up. This is supported by Buttner and Moore (1997) who feared that the growth opportunities for women owned businesses may be hindered by lack of interest on the part of lending institutions and venture capitalists. This is consistent with previous research which has found that the financial aspects of venture start-up and management are the biggest obstacles for women entrepreneurs (Brush, 1992). It confirms the belief that finance acts as a barrier for female entrepreneurs. Thus this may limit female owned businesses opportunities for growth and profitability (Coleman, 2002).

It has also been suggested that women are less likely to engage in innovative behaviour than men (Kalleberg and Leicht, 1991). It has been found that enterprises in the service and retail industry sectors, where female owned businesses tend to clustered in, are not as innovative as those operating in other industry sectors (Brush and Chaganti, 1999). Interestingly, however, it has been established that women themselves believe that their strengths actually lie in idea generation and product innovation (Hisrich and Brush, 1984; Brush and Hisrich, 1991; Still and Walker, 2006).

Contrary to this Hisrich and Brush (1984) found that none of the businesses owned by women, in their study, were based on a product innovation or modification; rather, the majority founded their business using an established or slightly modified product for an existing market (Hisrich and Brush, 1984, p33). Kalleberg and Leicht (1991) suggested that this may be due to socialisation as women are not encouraged to stray from socially acceptable female work. An interesting finding from Grundy and Welsch's (2001) study found that a major difference between high-growth orientated entrepreneurs and their counterparts in low growth sectors are that the former focus more on market expansion and new technologies. Still and Walker (2006) suggested that the low levels of innovation on the part of females may be due to the nature of their businesses rather than an unwillingness on the part of women owners to innovate.

This section on female entrepreneurs has highlighted a number of issues which may have an impact on a woman's choice to enter a traditional or non-traditional industry sector. The antecedent influences on the female entrepreneurs have been examined to determine if women have obtained the relevant background and knowledge to enter a non-traditional sector. The motivational reasons why a woman enters entrepreneurship have also been detailed as have a number of barriers that may deter women from starting their own business or on the choice of business started. Finally this section has addressed the type of business that women tend to start and also a number of characteristics associated with traditional type industry sectors. The next section will look at the high technology enterprise and entrepreneur and a comparative analysis will then be conducted between the high technology and traditional enterprise and entrepreneur.

2.4 The High Technology Enterprise

This section will look at the many definitions and debates as to what constitutes a high technology enterprise. The characteristics of both high-tech industry sectors and the high-tech entrepreneur, according to existing literature, will also be examined. By exploring the characteristics of the high technology industry sector, this researcher aims to determine what factors may hinder women from starting a business in such sectors. The characteristics of a high technology entrepreneur are especially relevant to this study as a high-tech enterprise relies heavily on the personality of the founder in the early stages of the venture (Madsen et al, 2003). It needs to be determined if women possess the characteristics to start up a high technology business. Entrepreneurship in general has been labelled a male orientated profession (Boden and Nucci, 2000). High technology industry sectors are also considered to be male dominated, for example Roberts' (1991) research shows there are more males than females in knowledge-intensive sectors. It is not surprising then that women owned businesses only account for 20% of industries that are traditionally male orientated (Turk and Shelton, 2004).

2.4.1 Defining the High Technology Enterprise

Evidence has shown that there is no one universal definition as to what characterises a high technology enterprise (Baruch, 1997; Storey and Tether; 1998; Medcof, 1999; European Commission, 2002a; Andersson, 2003; Grinstein and Goldman, 2005) and as a result of this it is difficult to identify a high technology enterprise (European Commission, 2002a). The European Commission (2002a) also believed moreover that “the notion we regularly associate with the term high-tech SME is surrounded by a diversity of terms with often similar or related meanings” (p. 13). This lack of a universal definition has meant that each classification or characterisation may vary depending on the situation for which it was devised.

According to Storey and Tether (1998) the term new technology based enterprise was first introduced by the Arthur D. Little Group in the 1970's, who defined this type of enterprise “as an independently owned business established for not more than 25 years and based on the exploitation of an invention or technological innovation which implies substantial technological risks” (p. 934). Many definitions since have emphasised this notion of technological activity and innovation as being the main criteria for classification of high technology. There is also a general consensus that a high-tech enterprise needs to have an above average spend on R&D and invest heavily in R&D activities. This is supported by Baruch (1997) who suggests that the ratio of R& D expenditures to total sales should be at a minimum of 5%.

Baruch (1997) also suggested that if 10% or more of employees were university graduates then the industry can be classed as high technology. Other researchers support this belief that an industry can be classified as high-tech if they have a high percentage (i.e. exceeding the national average) of workers in technology based employment (Pingkang Yu, 2004). According to Hoffman, Parejo, Bessant and Perren (1998) a high rate of qualified scientists and engineers among employees and a highly educated founder/entrepreneur are central to the R&D effort. Thus, it appears from the literature that there are no agreed, logical and measurable criteria for defining high technology

(Baruch, 1997). As a result of the lack of a commonly accepted definition an enterprise is often classified as high technology if it belongs to a particular industry sector such as the IT or biotechnology industry sectors (Grinstein and Goldman, 2006). Madsen et al (2003) suggested that technology based enterprises are most likely to be found in the following sectors; materials technology, computer applications, telecommunications, electronics, energy, pharmaceutical and medical products and biotechnology.

There is also the uncertainty associated with developing new products and the technology that is needed to create these innovative products. Such technologies may still be in the development stage and the markets needed to distribute these products may not yet be fully established (Chorev and Anderson, 2006). This may pose a problem for women entrepreneurs who often prefer to use known technology and target existing markets (Minniti et al, 2004).

Finance, in general, is a difficult area for high technology businesses (and women) as many find it more difficult to get access to finance due to certain characteristics of these businesses. Such characteristics include high risk projects, long development periods of products/services and the availability of intangible assets (Colombo and Delmastro, 2001; European Commission, 2002b). This gives rise to a high mortality rate among high technology start-ups (Fredric and Zolin, 2005).

2.4.2 Aspects of High Technology Enterprises

It is important for this research to examine the key aspects of high technology enterprise to see if they correspond to businesses owned and run by women. By doing so it is the intention of this researcher to paint a picture of the typical high technology enterprise.

2.4.2.1 Innovation

Innovation is a commonly recognised characteristic of high technology enterprises. In fact, innovation is essential in this area and is often mentioned in combination with the entrepreneurial function (Grinstein and Goldman, 2006). It is essential for high technology enterprises to rapidly develop new products to survive and stay competitive in these markets (Deeds, DeCarolis and Coombs, 2000). Medcof (1999) also believed that by focusing on innovation it simplifies and strips away many side issues that are included in other definitions of high technology enterprises.

Just as high technology enterprises are characterised by innovation, technological entrepreneurs are said to be “idea rich” (Fredric and Zolin, 2005). Madsen et al (2003), however, believed that this process is more than just coming up with the idea, it involves developing the idea into a product or service that the market demands. This may involve the creation of a new or technological advanced product or it can entail utilising existing technology in an innovative way. This highlights the fact that innovation does not have to involve the creation of a new technology rather, the existing technology may be applied in a new or innovative way. This again reflects the importance of the entrepreneur in this process as the entrepreneur must be able to see the potential and apply the technology in a new way (Boussouara and Deakins, 1999). The creation of new technology or the application of existing technology would not be possible without the R&D function.

2.4.2.2 R&D

Innovation and R&D are inextricably linked. As studies have shown there is a positive relationship between the proportion of turnover spent on R&D and how innovative enterprises are (Keizer, Dijkstra and Halman, 2002). R&D intensity and total R&D expenditure are commonly used to identify high technology enterprises by measuring an enterprises “dependence on science and technology innovation” (Medcof, 1999).

“R&D is seen as central to high technology enterprises, as their core, most important activity, and as the reason for their existence” (Grinstein and Goldman, 2006, p. 131). R&D is at the heart of a high technology enterprise’s strategy for new product development.

2.4.2.3 High Growth

There is a lack of research on high growth especially in the small enterprise. The majority of research that has been carried out has been on high growth in the larger enterprise (O’Regan, Ghobadian and Gallear, 2006). High growth may be defined by employment growth or, in the majority of cases, by the growth of sales and turnover. According to Fischer and Reuber (2003) high growth can be defined as having a sales growth rate of at least 20% per year for five successive years.

High growth can be achieved by enterprises with a variety of size, sector and age characteristics (Smallbone, Leigh and North, 1995). However, the entrepreneur as the founder of the small enterprise has the most influence on whether the enterprise maintains a commitment to achieving high growth. The entrepreneur’s attitude, lifestyle and family responsibilities will all have an impact on the growth intentions as much as the commercial considerations of the enterprise (Smallbone et al, 1995; Andersson, 2003).

Medcof (1999) believed that high economic growth is a secondary characteristic of high technology industry sectors. Therefore, for the purpose of this research the primary focus will be on high technology enterprises with high growth being regarded as a consequence of enterprises operating in high technology sectors.

2.4.3 Characteristics of High Technology Entrepreneurs

It has been acknowledged in the literature that the technical entrepreneur is the key catalyst in the creation of a high technology enterprise (Oakey, 2003). Therefore, the next section of the literature review examines technical entrepreneurship, in relation to female entrepreneurs, under the headings of age, family background, socialisation, education and previous experience.

2.4.3.1 Age

Entrepreneurs in high-tech sectors, both male and female, are often older than their colleagues in other sectors because of the technical nature and the higher levels of education needed to be successful in these sectors (Madsen et al, 2003; Colombo and Delmastro, 2001). Colombo and Delmastro (2001) also found that Italian entrepreneurs in the high-tech sector use their personal savings to finance their business and therefore they have to wait longer, and will be older, before entering high technology industry sectors.

In general, female entrepreneurs are older than their male counterparts and female entrepreneurs in the high tech sector are even more so (Madsen et al, 2003). Evidence from Madsen et al's study has shown that this is because women in high technology industry sectors typically wait until their children are older before they start a business. Roberts (1991), on the other hand, found that entrepreneurs in high technology sectors are older due to the higher level of education that they attain and a decade plus of work experience which they have.

2.4.3.2 Family Background

As previously examined a tradition of entrepreneurship in a family is an important source of influence for female entrepreneurs (Orhan and Scott, 2001; Mattis, 2004). Similarly, for the high technology entrepreneur family is an important influence. Roberts (1991) found that family background was “the most striking predecessor influence on technical entrepreneurs” (p. 1193). This is highlighted by the fact that two thirds of the entrepreneurs in his study had a self-employed father.

In relation to female entrepreneurs, it was found that women are more likely to start a business in high technology industry sectors when they come from families where parents are highly educated (Jackson, Gardner and Sullivan, 1993). Jackson et al also found that this was because highly educated parents are more likely to encourage their daughters towards less traditional sectors.

2.4.3.3 Socialisation

As stated earlier social feminist theory stipulates that differences exist between men and women due to early and ongoing socialisation (Fischer et al, 1993). A review of the literature, therefore, yielded some interesting findings in relation to the socialisation of patterns of women in high technology. Coats and Overman (1992) established that women from non-traditional sectors had early patterns of socialisation that differed from women in traditional sectors. They suggested that women who partook in competitive sports, which they believed were traditionally the domain of boys, as children were more likely to choose non-traditional careers in their adult years. Coats and Overman (1992) also found that, generally, women in non-traditional sectors had more male playmates when younger. This they suggest helps women to learn male behaviours and to then be able to successfully compete against men.

However, contrary to the above a number of researchers have found that single-sex classes at post primary level are more conducive to women entering a non-traditional sector. Watson, Quatman and Edler (2002) and Jackson (2002) stressed that girls who attend a single-sex school will not be exposed to gender stereotyping and, therefore, will not have any preconceived ideas that women are not suited a technical non-traditional careers. In particular, Watson et al (2002) believed that this is due to the fact that girls in a same sex class will not be exposed to pressure from the opposite sex and will, therefore, have higher levels of aspiration.

It has been highlighted that teachers and counsellors may also be contributors to gender stereotyping as it has been found that they tend to encourage girls away from non-traditional careers and instead support them to follow a more traditional female career (Gates, 2002, cited in Adya and Kaiser, 2005). The following section will address more specific issues related to the educational attainment of high technology entrepreneurs

2.4.3.4 Education

Education has always been recognised as an important factor within the entrepreneurship literature. Hisrich (1990) went as far as to say that a good education is a prerequisite for entrepreneurship. For founders of high technology enterprises education is even more important due to the innovative nature of these industry sectors. Generally, it is recognised by numerous researchers that high levels of formal education are common among founders of high technology enterprises (Roberts, 1991; Storey and Tether, 1998; Colombo and Delmastro, 2001; Madsen et al, 2003; Harpaz and Meshoulam, 2004) with a Masters degree being the norm (Roberts, 1991). Storey and Tether (1998) have even suggested that it is this higher than average human capital as opposed to the technology used in these enterprises which is central to their survival rate.

Many of the founders of high-tech enterprises are scientists or have a science education and have worked in science based industries (Madsen et al, 2003) and are considered to

be technical or scientist entrepreneurs (Boussouara and Deakins, 1999). This is reflected in the type of degrees entrepreneurs from high technology sectors have such as engineering, ICT, the natural sciences and business administration (Madsen et al, 2003). As stated previously in this chapter women do not have the relevant education to enter traditionally male dominated areas as the majority of women have degrees in the liberal arts (Hisrich and Brush, 1984; 1991; Buttner, 1993). In more recent years, however, women have been encouraged to take degrees in technical subjects and yet females still only account for approximately one third of students on these courses (Madsen et al, 2003). As women, generally, have qualifications in non technical areas this may prevent female entrepreneurs starting high technology enterprises.

2.4.3.5 Experience

High-tech start-ups depend on the founders' knowledge and skills as has been stated previously the relevant education and experience are essential if one is to be successful in these sectors. For that reason founders of high technology enterprises need to have gained technological and market experience (Colombo and Delmastro, 2001). Madsen et al (2003) found that approximately two thirds of entrepreneurs have general experience in technology and innovation management while sixty percent have specific experience in entrepreneurship and starting an enterprise. However, as discussed earlier many women start a business in an industry where they have no prior experience (Watkins & Watkins, 1984; Fielden et al, 2000; Fielden et al 2003).

As can be seen from the above literature, high technology enterprises are innovative, place a strong emphasis on R&D and have an above average growth rate. Other characteristics of the high technology industry sector are that, in general entrepreneurs are generally older and better educated and employ a higher proportion of university graduates than other industry sectors.

2.5 Comparative Analysis

This section has drawn attention to a number of differences which exist between the high technology and traditional enterprise. It has been noted that, in general, the traditional enterprise is smaller, both in terms of its size, number of employees and revenues than its technological counterpart. It was also found that the traditional enterprise has lower barriers to entry, a slower growth and is less likely to innovate. It was then established that there is no clear definition of what constitutes a high-tech enterprise; however, these enterprises are very much based on the use of novel advanced products/services or adapt them in an innovative manner. A high level of R&D spend and high growth levels are another two traits which are common of the high technology enterprise.

This review of the literature on traditional industry sector entrepreneurs and their high technology counterparts also revealed a number of differences. It was highlighted that the high technology entrepreneur was more likely to be older, have attained a higher level of education, usually in a science related discipline, and have gained a relevant technological work experience. It was also noted that women from traditional and high technology industry sectors may have experienced differing patterns of socialisation. It has also been suggested that it may be more difficult for women in high technology sectors, compared to their counterparts in traditional sectors; to gain access to finance as a result of these sectors being regarded as male dominated.

2.6 Conclusion:

This chapter has provided an overview of the literature pertaining to the topic of female entrepreneurship. It has acknowledged the growth that has occurred in this area in the last number of decades, both in terms of the number of women starting a business but also in the amount of academic interest that it has attracted. However, a review of the literature also found that Ireland has relatively low levels of female entrepreneurship compared to

other countries, and significantly, that the majority of women in Ireland start a business in a traditional female type industry sector rather than in a high technology sector.

Following on from this, an in-depth examination of the female entrepreneur was undertaken in relation to her family background, educational level, previous occupational experience, business skills, socialisation process, and motivations for starting a business and barriers that are associated with female entrepreneurs. The researcher then reviewed the literature on the type of enterprises that females, traditionally, tend to start and characterised these enterprises. Subsequently, the high technology enterprise and entrepreneur were then defined and characterised. A review of the literature surrounding this topic found that high technology sectors are more male dominated and that there is far less information regarding females in these sectors than males. The differences between traditional and high technology, entrepreneurs and enterprises, was then detailed.

In conclusion a review of the literature has shown that there is a need to understand why a female entrepreneur chooses to start a business in a traditional or high technology industry sector, as some researchers have also identified that this is needed, and to gain an understanding of the influences that may affect this choice (Anna et al, 2000; Coleman, 2002). It is important to determine why more women in Ireland do not enter these sectors because if Irish women started businesses at the same rate as women in the USA it would have the effect of increasing the overall level of female entrepreneurs in Ireland by another 56,000 (GEM, 2003).

The next chapter will inform the reader of this study's research problem, question and objectives and details the methodology that was utilised in the research. Attention is then drawn to the philosophical orientation that underpins the current research which was used to design the relevant instrument, which aided in the acquisition of the primary data for this research.

Chapter Three:

Research Methodology

Chapter 3: Research Methodology

3.1 Introduction

The purpose of this chapter is to inform the reader of the research methods that were employed in the current study. Firstly, this chapter begins by providing justification for the research problem and the definition of the research question and objectives. The research process will then be examined with particular emphasis placed on the “Research Process Onion” as advocated by Saunders, Lewis and Thornhill (2003).

The philosophical paradigms of positivism and phenomenology will also be explored. This will involve looking at the inherent characteristics of each paradigm and selecting the philosophy which is most suited to the nature of the current study. Once the research philosophies have been examined the fundamental differences between quantitative and qualitative research are investigated.

This chapter concludes with a detailed examination of this study’s chosen research instrument. This researcher will provide her rationale for choosing semi-structured interviews as the most suitable method in answering the research question and objectives of the study. The advantages and disadvantages of this method are also highlighted as is the interview process.

According to Chisnall (2001), a central part of research is to develop an effective research strategy or design. It will contain clear objectives, derived from the research question(s), specify the sources from which it is intended to collect data, and consider the constraints that will be inevitably faced (Saunders et al, 2003). The following sections will, therefore, provide the reader with an appreciation as to how the researcher clarified the research problem, question and objectives, explain the research process and highlight the data collection methods utilised in this study.

3.2 Research Problem

Female entrepreneurship is a relatively new field of research with studies originating in the late seventies and early eighties. Since then interest in this subject area has risen as the number of women starting businesses has grown dramatically and, in fact, it has been recognised that women owned businesses are now one of the fastest growing segments in the small business sector (Buttner and Moore, 1997). Numerous studies have continually recognised the impact that female owned businesses have on the economy both in terms of employment and of potential growth (Henry and Kennedy, 2002; OECD, 2004; GEM, 2004).

Despite this, the majority of the female entrepreneurship literature is focused on examining the differences that exist between male and female business owners rather than on the differences that exist between female entrepreneurs in different industry sectors.

It has been estimated that in the USA 38% of entrepreneurs are female, however in Ireland, this source of new business is not being exploited as women make up just 15% of Irish entrepreneurs, with some research suggesting that this figure may be even lower at 7.5% (Henry & Kennedy, 2002). According to recent GEM research (2004) women in Ireland are only involved in entrepreneurship at less than half the rate of women in other countries such as New Zealand, Australia and Iceland. It was also found that not only does the level of female entrepreneurship lag behind other countries but that Ireland also represents an unusual case of gender imbalance among those active as entrepreneurs. It was estimated that there are low levels of female entrepreneurs (3.7%) and relatively high levels of male entrepreneurs (12.5%), this means that, in Ireland, a country where the population is approximately 50% female (CSO, 2006) there are only 29 women entrepreneurs for every 100 males (GEM, 2004).

There is also research which has found that in the United States women are making a significant contribution to economic development in sectors such as high technology and

construction (Irish Scientist, 2002). While, in Ireland, it has been found that women tend to be concentrated in locally traded services with low growth aspirations rather than in knowledge based businesses with growth and export potential (Fitzsimons et al, 2004). It is important then to understand why women choose to start businesses in different industry sectors. This is especially significant when one considers that if Irish women were as active as women in the USA there would be, approximately, an additional 56,000 entrepreneurs in Ireland (GEM, 2003).

The current study is unique, to the best of this researcher's knowledge, as it is focused specifically on examining the factors that influence a woman to start her business in a high technology sector or traditional industry sector, in Ireland but particularly in the South East region. Anna, Chandler Jansen and Mero (2000) and Coleman (2002) have acknowledged that such research is lacking and that it is, therefore, important that more research be performed into why a female entrepreneur chooses to one industry sector over another. This is of particular importance in the South East region of Ireland where only 4% of new enterprise start-up, formed between 1990 and 2001, were by female entrepreneurs (O'Gorman, 2007).

The current research will provide insights into what influences a female entrepreneur to start a business in a traditional or high technology industry sector. It is hoped that the accumulation of the current research will result in the proper utilisation, of the presently untapped resource, of the female entrepreneur. Because, as Richardson and Hynes (2006) have stressed, both the Irish and World economies are losing out on a valuable resource of technology based female entrepreneurs.

A conceptual framework, depicted in Figure 3.1 was developed in order to help in the development and clarification of the research question and objectives. As can be seen from the conceptual framework the research question is a fundamental element of this process and is therefore located at the centre of the diagram. The conceptual framework also outlines the areas of literature which were vital to the formation of the research question and objectives.

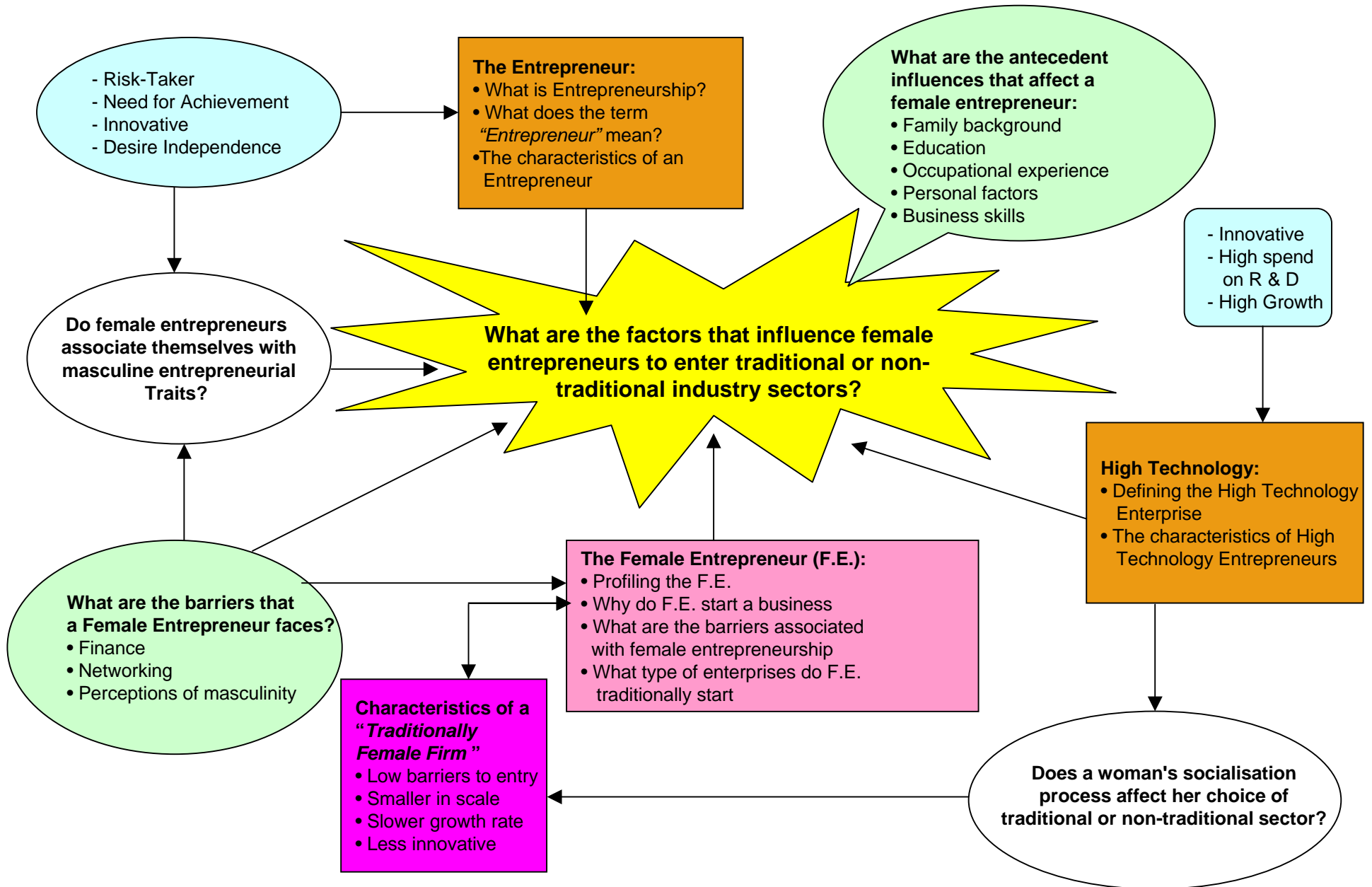


Figure 3.1 Conceptual Framework (Source: Current research)

Once the key areas of literature had been identified a comprehensive review of this literature took place. The literature review is important to the overall process as:

- It brings clarity and focus to the research problem
- It improves the methodology
- It broadens the researchers knowledge base (Kumar, 1999, p.26)

For the purpose of the current research the literature review enabled the researcher to clarify and define the research question and objectives, increased the researcher's knowledge of this area and aided in the selection of the research methodology.

3.3 Research Question

The research question is derived from the literature review and “it is the literature review which should reveal problems or areas of incomplete knowledge into the field of interest” (Remenyi, Williams, Money and Swartz, 1998, p. 67). As can be seen from Figure 3.1 the areas of literature pertaining to the research question were investigated to aid in the identification and clarification of the research question.

It is essential that the research question is well defined as Bryman and Bell (2003) have acknowledged that research questions which are not properly defined will lead to poor research. They believe that the research question is crucial to the overall research process as a well defined research question will provide focus and clarity to the study (Bryman and Bell, 2003). This is supported by Sekaran (2003) who has also emphasised that it is critical that research questions are unambiguously identified and defined. Fundamentally, it is the research question which defines the research study and expresses the essence of the enquiry (Mason, 2004, p. 19).

The current study seeks to understand why female entrepreneurs enter the type of industry sectors that they do. This will involve examining the “influences” that may

affect women's decisions to enter their specific industry sector. Such influences include the female entrepreneur's characteristics, motivations, background, education and experience. For the purpose of this current study the research question is:

What are the factors that influence female entrepreneurs to enter traditional or non-traditional industry sectors?

3.4 Research Objectives

Once the research question has been clarified the research objectives can then be identified. Research objectives should be directly derived from the research question (Saunders et al, 2003). According to Churchill (1999) these objectives must be clearly defined as the next stage in this process cannot be reached until the research objectives have been clearly stated.

Research objectives are the goals that the research seeks to attain (Kumar, 1999). Therefore, the research objectives or goals of this current study are:

1. To discover if the backgrounds, education, experience and other antecedent influences of female entrepreneurs who start-up high technology enterprises differ from those females who start-up more traditional service related enterprises
2. To identify the motivating factors that encourage women to enter high technology industry sectors versus those that encourage women to enter traditional service oriented industry sectors
3. To ascertain do female entrepreneurs perceive high technology industry sectors to be male dominated

4. To establish if there is a difference in gender orientations between high technology female entrepreneurs and their traditional counterparts

The primary research undertaken in this study endeavoured to address both the research question and the set of objectives. As the research problem has been defined, the research process and research methods will now be explored in the following sections.

3.5 The Research Process/ Research Design

Mason (2004) informs us that a good research design will have a clearly defined purpose and will have consistency between the research questions and the proposed research methods. Numerous researchers have defined what constitutes this research process, or research design as it is also commonly referred to. Malhotra and Birks (1999), for example, simply define it as a framework or blueprint for the research. A more comprehensive explanation is given by Bryman and Bell (2003, p. 31) who state that a research design provides a framework for the collection and analysis of data that is suited to the research question.

Many of these definitions have depicted the research process as a linear event. Saunders et al. (2003) have developed a more comprehensive step by step model for this process. In their version they compare the research process to that of an onion with it being made up of many layers. As can be seen from their model of the *Research Process Onion*, depicted in Figure 3.2, the issues underlying the choice of data collection methods are first examined before the data collection tool is selected.

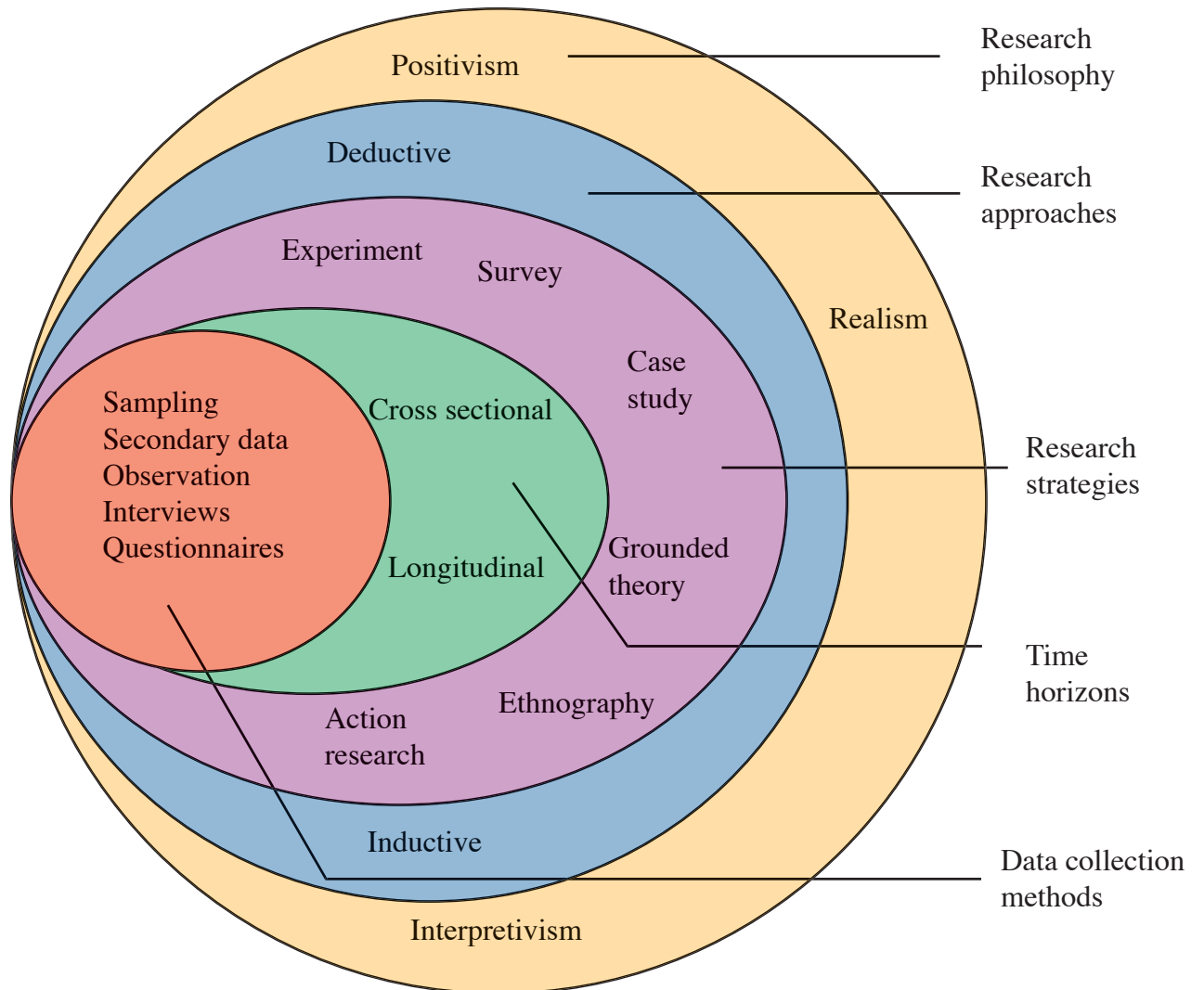


Figure 3.2 The Research Process Onion (Source: Saunders et al, 2003, p. 83)

Saunders et al (2003) believe that each important layer must be peeled back before the final layer of data collection can be reached. This they stipulate is because researchers primarily focus on which method should be used to collect primary data, rather than first gaining an appreciation of the philosophy that the method is based upon. Therefore, in accordance with Saunders et al. (2003) this researcher will explore the area of research philosophy before considering the method of data collection to be used in the current study.

3.6 Research Philosophies

It is necessary to understand what one means when they refer to the philosophy of research. Chia (2002) believed that philosophy is a rigorous, enquiring state of mind that is concerned with the creation of new knowledge. There is also some confusion over the terms method and methodology and their association to philosophical research issues. Hughes (2002) provides a simple distinction between these two terms. She stated that the term 'method' refers to the tools of data collection or techniques such as questionnaires and interviews. Methodology, on the other hand, she says is based on the philosophical approach or paradigm that underpins the research. Therefore, philosophy is centred on the formation of new knowledge in the social world while the research methodology is the foundation of this process.

Other researchers including Easterby-Smith, Thorpe and Lowe (1997) and Saunders et al (2003) have also stressed the importance of having an understanding of philosophical issues. They believed that the exploration of philosophy is necessary as this affects the way we think about the development of knowledge. Easterby-Smith et al (1997) have stated that it is important to understand philosophical issues as:

- It can help the researcher to refine and specify the research methods and also to clarify the overall research strategy.

- Knowledge of the philosophy will enable the researcher to evaluate the various research methodologies and methods to be used in the study and to recognise which are not appropriate.
- Finally it may aid the researcher to be innovative in the selection or adaptation of methods that they may not have previous experience with.

(adapted from Easterby-Smith et al, 1997, p.21)

Saunders et al (2003) believed that there are three differing views that dominate the literature on philosophy; these are Positivism, Interpretivism (also referred to as Phenomenology) and Realism. However, according to Chia (2002) despite the apparent range of philosophical approaches there are actually only two opposing philosophies. This is also supported by numerous researchers including Easterby-Smith et al. (1997) and McNeill and Chapman (2005), who believe that there are two schools of philosophical thought; Positivism and Phenomenology.

Many researchers have debated which of the two philosophical approaches are better, however a number of researchers (Remenyi et al, 1998; McNeill and Chapman, 2005) have argued that these two have similarities. Pawson (1999) cited in McNeill and Chapman (2005) informed that;

- Firstly positivism and phenomenology are not opposing approaches but rather they face identical problems and need to adopt common solutions.
- Secondly, a great deal of social enquiry has side-stepped the theory war and successfully employed a combination of qualitative and quantitative methods.
- Thirdly, methodological disputes are more likely to be family feuds (arguments that are not related to philosophical paradigms but rather to ethnography issues).

(p. 21)

The following sections will provide a more in-depth examination of these two paradigms and also an argument as to why this researcher chose the phenomenological school on which to base this research. To provide the reader with a practical breakdown of the

basic beliefs, views and methods associated with each paradigm, a summary of these two philosophical schools of thought is also outlined in Table 3.1.

	<i>Positivist Paradigm</i>	<i>Phenomenological Paradigm</i>
Basic Beliefs:	<ul style="list-style-type: none"> - The world is external & objective - The observer is independent - Science is value-free 	<ul style="list-style-type: none"> - The world is socially constructed & subjective - The observer is part of what is observed - Science is driven by human interests
Researcher Should:	<ul style="list-style-type: none"> - Focus on facts - Look for causality & fundamental laws - Reduce phenomena to simplest elements - Formulate hypotheses & then test them 	<ul style="list-style-type: none"> - Focus on meanings - Try to understand what's happening - Look at the totality of each situation - Develop ideas through induction from data
Preferred Methods Include:	<ul style="list-style-type: none"> - Taking large samples 	<ul style="list-style-type: none"> - Small samples investigated in depth or over time

Table 3.1 Key features of the positivist and phenomenological paradigms (Source: Easterby-Smith et al, 1997, p. 27)

3.6.1 The Positivist Approach

According to Hughes and Sharrock (1997) positivist philosophy has its origins with Comte who, in the early decades of the nineteenth century, stressed that science should be precise, based on theoretical laws and on sound observations (p. 26). These characteristics are the foundation of positivist philosophy and as can be seen from Table 3.1 those that follow the positivism philosophy paradigm believe that the world is external to them and they act independently and objectively from the social reality of

what is being researched. As a result of this, quantitative methods are usually employed in data collection and measurement of large samples is based on law-like generalisations.

Hughes (2002) has stated that the positivist approach through detached observation seeks to identify universal features of humanhood, society and history that offer explanation and hence control and predictability (p. 6). Thus the underlying belief of positivism is that the researcher is always independent of and does not affect nor is affected by the subject which is being researched (Remenyi et al, 1998). This according to Chia (2002) requires the researcher to assume the role of a 'spectator' and act independently of the object of enquiry. A similar view is held by McNeill and Chapman (2005) who believed that the researcher is neutral and must not allow their personal or political views to bias the research.

Research that is gathered according to the positivist approach will, therefore, be gathered through the use of scientific methods (Jankowicz, 2000) and will lend itself to statistical analysis (Remenyi et al, 1998). McNeill and Chapman (2005) stated that positivists regard research methods that produce quantitative data more reliable as this type of data can be organised in a standardised and systematic manner (p. 17). This is an extremely important characteristic of the positivist approach as research conducted in this manner should be able to be repeated and verified by other social researchers (McNeill and Chapman, 2005).

Jankowicz (2000) provides us with a description of the basic assumptions that underpin the positivism philosophy:

- Knowledge is something we develop by gradually discovering more and more about what's out there.
- Phenomena can be analysed in terms of variables.
- Data can be collected by a dispassionate outside observer.

- Given evidence, we are always capable of distinguishing what is true from what is untrue, and are therefore enabled to agree on the real reasons for things if we wish to do so.
- The purpose of enquiry is to build theories; these are general statements which validly explain phenomena.
- Once such theories have been developed sufficiently, we should seek to apply them for productive purposes. (p. 113)

There are many criticisms of the positivist school of thought, some of the main ones are listed below, and as a result of these criticisms the phenomenological paradigm has been developed:

- It is not always possible to separate the researcher's personal values and experiences from the object being examined and thus remain "objective" (Hughes, 2002).
- Positivism does not provide a way to examine human beings and their behaviours in depth (Crossan, 2002).
- Positivism has useful but limited data collection and analysis techniques (Hughes and Sharrock, 1997).
- Positivism, especially in the social sciences is not regarded as an approach that will lead to interesting or profound insights (Remenyi et al, 1998).

3.6.2 The Phenomenological Approach

Social research is not objective or external, but is a construction of shared meanings and interpretations. For example, man is a conscious, active, purposeful being rather than being subject to external influences over which he has no control (McNeill, 1990, p.119). This is the principle on which the phenomenological school of thought is based, or post positivism as it is also referred to. Table 3.1 informs us that according to the phenomenological approach the world is socially constructed and subjective and

therefore the researcher is part of the phenomena being examined. Phenomenology tends to be associated with qualitative data collection methods as this allows the research to focus on meaning and look at the phenomena as a whole.

According to Hussey and Hussey (1997) there are a number of characteristics that are inherent to the phenomenological school of thought. They believe that this approach tends to be qualitative in nature, the data produced is rich and subjective and that the researcher is part of this approach as the subject is examined in their natural location. Finally they conclude that this approach tends to be low in reliability but high in validity.

McNeill and Chapman (2005) stress that “people are active, conscious beings, aware of what is going on in a social situation and capable of making choices about how to act” (p. 19). Thus, the phenomenological school of thought is centred around the notion that humans are not objects and can be subject to many influences on behaviour, feelings, perceptions and attitudes (Crossan, 2002). This then has an impact on the research and the way in which the data is gathered and analysed. The positivist approach is based on the opposing notion that the researcher is neutral from the object that is being examined; this is why Chia (2002) believes that phenomenology is the rejection of rationalisation.

Qualitative methods are employed in the phenomenological approach to allow a small sample to be studied in depth (Crossan, 2002). The results of this will not lead to law-like generalisations but rather provides a descriptive picture of the situation. Remenyi et al (1998) believe that, to the phenomenological researcher, each situation is unique and its meaning is a function of the circumstances and the individuals involved, thus the researcher is an intrinsic part of what is being researched (p. 34). The methods employed in phenomenology are concerned, therefore, with the validity of the data collected and of achieving shared meanings and interpretations from the data (McNeill and Chapman, 2005) rather than with statistics.

3.6.3 Selection of Research Philosophy:

Remenyi et al (1998) informed us that the philosophical approach, positivism or phenomenology, chosen will be influenced to a large degree by the background of the researcher. However, it is important to establish the philosophical approach early in the process so as to be able to provide justification for the research findings (Remenyi et al, 1998).

The research philosophy employed in this study will be phenomenology as it aims to gain a comprehensive understanding of why female entrepreneurs enter the type of industry they do. This involves investigating areas such as the background of female entrepreneurs, their motivations and their attitudes. It was also necessary to investigate whether differences existed between the women who start a high technology business and their traditional counterparts. This research aims to gain an in depth insight into the influencing factors and behaviours of these female entrepreneurs. This is consistent with Remenyi et al (1998) who have found that the phenomenological approach is better suited to the study of people and their behaviours, is concerned with understanding the phenomena in depth and also gathering answers to what, why, how type questions.

Denscombe (2005) also acknowledged that good phenomenological research has the ability to provide a detailed authentic description of the experience being examined. Due to the fact that the nature of the information required in the current study was very descriptive, the phenomenological approach was best suited to the attainment of this information. Many questions were also of a sensitive nature and needed to be probed on a one to one basis; therefore, this researcher decided that such information could only be sought through phenomenological research methods.

Furthermore this descriptive rich information does not lend itself towards statistical analysis as it is qualitative in nature and needs to be analysed as such. For example, Denscombe (2005) has stated that phenomenology is not concerned with categorising and quantifying human experiences, but rather it concentrates on gaining a clear picture

of peoples' experiences. For this reasoning the phenomenological approach was pursued in this current research study.

3.7 Quantitative Versus Qualitative Research

Numerous researchers have stressed that there is a need to distinguish between quantitative and qualitative research. Table 3.2 identifies the differences that exist between quantitative and qualitative research in regard to their orientations of theory, epistemology and ontology.

	Quantitative	Qualitative
Principal orientation to the role of theory in relation to research	Deductive; testing of theory	Inductive; generation of theory
Epistemological orientation	Natural science model, in particular positivism	Interpretivism
Ontological orientation	Objectivism	Constructivism

Table 3.2 Fundamental differences between quantitative and qualitative research strategies (Source: Bryman and Bell, 2003, p. 25)

According to Bryman and Bell (2003) quantitative research emphasises quantification in the collection and analysis of data, is based on the deductive approach, involves the collection of numerical data as in accordance with the scientific model and embodies a view of social reality as an external , objective reality (p. 25). Quantitative research has its origins in the natural sciences and thus also with scientific methods of collection and analysis of data.

Denscombe (2005) believed that one of the main attractions of the quantitative approach is that it carries with it “an aura of scientific respectability.” This is due to the fact that this approach is based on meanings that are derived from numbers and that lend itself to

statistical analysis (Saunders et al, 2003). Quantitative analysis will always involve the numerical analysis of data (Johnson and Harris, 2002) with the data presented in the form of tables, charts and graphs.

Denscombe (2005) has informed that quantitative research is based on objectivism and does not take account of the researcher's values. Because of this and the fact that quantitative data lends itself to statistical analysis this approach is often associated with the positivism school of thought and thus is deductive in nature.

On the other hand, Bryman and Bell (2003) defined qualitative research as emphasising words as opposed to quantification. It is an inductive approach which involves the generation of theories, embodies a view of social reality that emphasises the ways in which individuals interpret their social world and views the social world as constantly changing and evolving.

Qualitative research involves the collection of words and observations. Jankowicz (2000) stated that qualitative research is about the nature and content of what is being said – its meaning – rather than the number of people saying it, or the frequency with which it is being said (p.127). However, these words are only given meaning when they are interpreted by the researcher (Denscombe, 2005). This view is in accordance with the phenomenological orientation which views the researcher as an integral part of the study.

Qualitative research encompasses a variety of methods that are flexible to enable respondents to reflect upon, and express their views. It seeks to encapsulate the experiences and feelings of respondents in their own terms (Malhotra and Birks, 2000, p.158). This approach requires an in depth analysis and exploration of the object being examined (Johnson and Harris, 2002).

In the current study this researcher utilised the qualitative research approach because it is not always beneficial to use fully structured or formal methods such as those employed in quantitative research. The type of information sought in this study is very descriptive

and seeks to understand feelings, attitudes and motivations. Thus, it would not be possible to gain such information from the use of a quantitative perspective. Malhotra and Birks (2000) have listed a number of reasons why it is more advantageous to use a qualitative approach and which are particularly applicable to the nature of the current research;

- Sensitive information: in a structured method questions may not always be answered truthfully or at all if the respondents feel that they invade their privacy, embarrass them or have a negative impact on their ego or status.
 - Subconscious feelings: the respondent may not always be able to provide answers related to values, emotional, drives and motivations residing at the respondent's subconscious level unless probed on a one to one basis
 - Complex phenomena: the nature of what respondents are expected to describe may be difficult to capture with structured questions
 - Qualitative research seeks to gain a holistic outlook or comprehensive view of the phenomena being examined
- (p. 159)

The main premise of this study is to gain an understanding of why each woman chose her particular industry sector and to determine if there are universal differences between these two groups of female entrepreneurs. The above factors were, therefore, very relevant to this researcher's choice of the qualitative perspective. The qualitative approach enabled the researcher, of the current study, to gain a comprehensive understanding of the factors that had an impact on the female entrepreneurs. The personal rapport built between interviewer and respondent, that a qualitative approach allowed, was also an important factor in gaining sensitive information. The use of quantitative methods, such as questionnaires, would not have obtained the necessary information to answer this study's research question. It is also difficult to capture descriptive information with structured questions and therefore the flexibility offered by qualitative methods was essential for this study.

3.8 Research Method

A research method is simply a technique for collecting data (Bryman and Bell, 2003). As stated earlier Hughes (2002) also referred to research methods as the tools of data collection or techniques such as questionnaires and interviews. For the purpose of the current study the chosen research method was semi-structured interviews. However, prior to the selection of this qualitative research method, criteria were selected in order to aid in the selection of a suitable research sample. Figure 3.3 depicts the process that this researcher underwent to gather the primary data for this study. The next section will, therefore, detail the research criteria which were utilised in this study.

3.8.1. Research Criteria

As can be seen from Figure 3.3, the first step of this process is to decide on research criteria which will ensure that a suitable sample will be selected for participation in the primary data gathering activities. Participants were evaluated using the following criteria and participants which matched these criteria were deemed suitable for inclusion in the current study. Thus, this ultimately ensured that the appropriate research subjects were chosen and that these subjects would aid in the answering of the study's research question and objectives. The research criteria for inclusion in the current study were:

1. The subject must be a female entrepreneur
2. The female entrepreneur must be owner/manager of the business (although the female entrepreneur did not have to own 100% of the business, her business partner must also be female)
3. The entrepreneur's business must be based in the South East of Ireland, which encompasses the counties of Waterford, Wexford, Tipperary, Kilkenny and Carlow
4. The entrepreneur must operate in either a high technology or traditional type industry sector

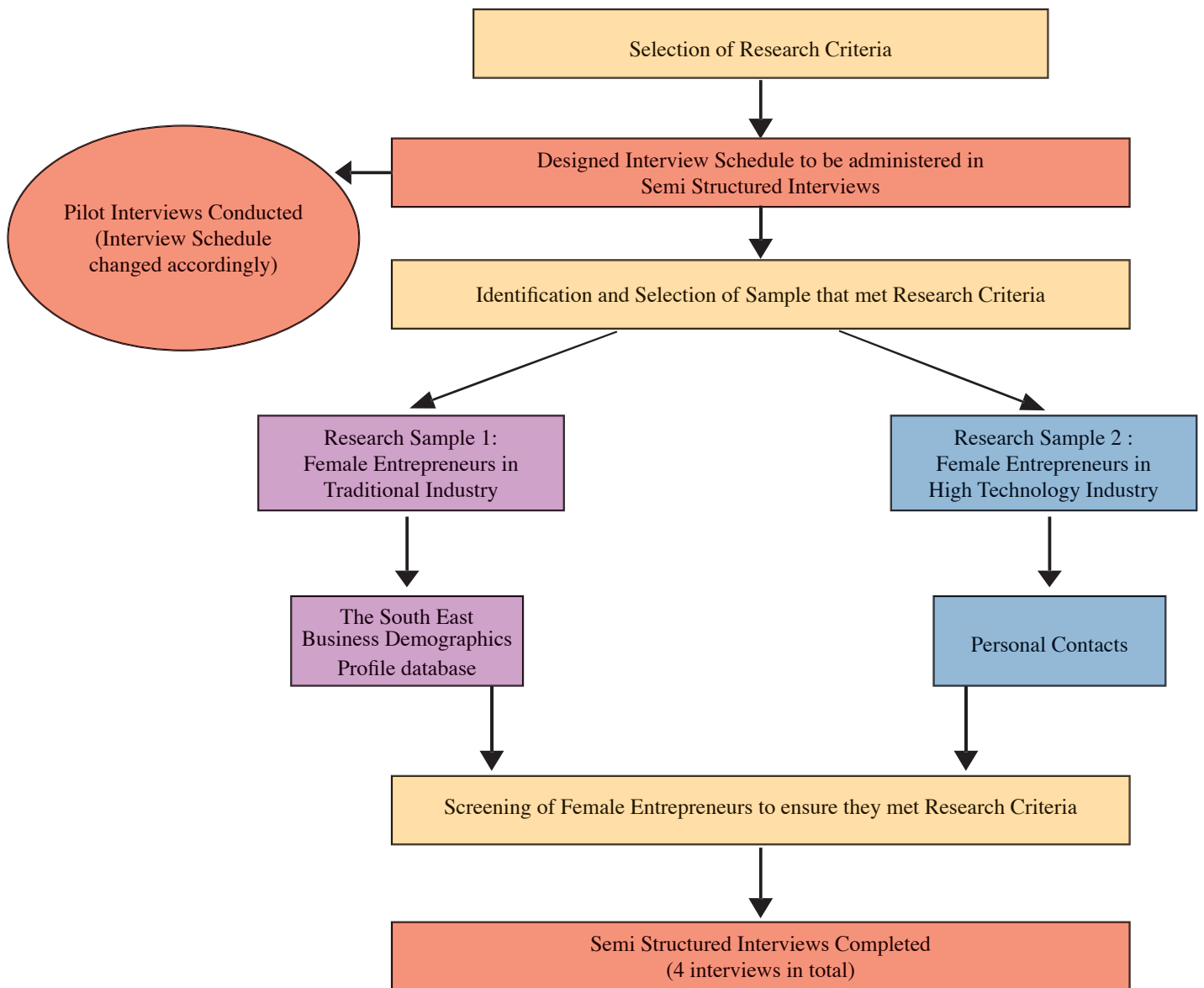


Figure 3.3 Research Method (Source: Current research)

3.8.1.1 Criteria for Inclusion in High Technology Industry Sector

As stated one of the criteria for inclusion in this study was that the female entrepreneur must operate her business in either a traditional industry sector or in a high technology industry sector. It is necessary, therefore, to define what is meant by these two terms and also to classify each for the purpose of this study.

According to the Office of Technology Assessment (1982) a high technology enterprise is one “which is engaged in the design, development and introduction of new products and/or innovative manufacturing processes through the systematic application of scientific and technical knowledge” (cited in Akpadock and Morrison, 2006, p. 13). A more simple definition of this is provided by the European Commission (2002a) who stated that a high technology enterprise is one which is involved in new or changed products and production processes.

However, for the purpose of this research high technology enterprises will be classified according to the industry sectors within which they operate. The European Commission (2002a) identified that in accordance with the Oslo Manual (1997) the following industry sectors have been classified as high technology: space and aviation, computers and office machinery, electronics-communications, pharmaceuticals, scientific instruments, electrical machines and equipment, motor vehicles, chemicals, transport equipment and non-electrical machines. In addition to this Madsen, Neergaard and Ulhoi (2003) also recommended that materials technology, computer applications, telecommunications, energy and biotechnology be classified as high technology. Therefore, for this study a high technology enterprise is one which operates in the following industry sectors:

- Materials technology (ceramics, composite materials, plastics, optical fibres, new superconductors, semiconductors)
- Computer applications (software development, robotics, CAD/CAM and AMT)
- Telecommunications
- Energy (alternative energy, energy efficiency)

- Biotechnology (genetic engineering, enzymes, monoclonal antibodies and diagnostics, biosensors)
- Pharmaceutical and medical products (pharmaceuticals, medical devices)
- Aerospace/Aviation
- Computers and office machinery
- Electronics-communications
- Scientific instruments
- Electrical machines /equipment
- Chemicals

3.8.1.2 Criteria for Inclusion in Traditional Industry Sector

For the purpose of the current study, this researcher decided to classify traditional industry sectors in a similar manner as Anna et al (2000). In their study Anna et al verified their classification scheme by reviewing the US Census Data, which categorises businesses according to industry sector or SIC Code. They then classified businesses from traditional businesses as those which on average have 42% women ownership.

In accordance with this method, the researcher of this current research reviewed the “Classification and Perception: An Explorative Investigation of Gender Effects of the Swedish SIC Code as a Classification Tool of Industry” report (Folkesson, 2005). This report was utilised in the current study as it listed entrepreneurs, 16+ years of age, according to SIC code and gender. As stipulated by Anna et al (2000), only industry sectors which had 42% women ownership were then classified as traditionally female. Therefore, for the purpose of this current study if a female entrepreneur operated in any of the following industry sectors they were included in the traditional sample:

- Manufacturing food products
- Manufacturing textiles
- Manufacturing non-metallic materials

- Retail, not vehicles
- Education
- Health services
- Social work
- Social services, not children or elderly
- Other personal services

3.8.2 Sample Selection

The next step in the process was to identify and select the sample to be used in the research. Sampling and selection relate to the means by which a researcher identifies, selects and gains access to the appropriate subjects (Mason, 2004). On the other hand, a sample is defined as a segment or subset of the population that is selected for analysis (Bryman and Bell, 2003). Sampling allows a researcher to reduce the amount of data that they need to collect by examining only a subgroup of the total population (Saunders et al, 2003).

The sample for this study consisted of subgroups from two distinct groups:

1. Female entrepreneurs operating in traditional type industry sectors
2. Female entrepreneurs operating in high technology industry sectors

However, acquiring the names of businesses owned by female entrepreneurs was extremely difficult. This is due to the fact that in Ireland there is no official categorisation of businesses by gender. This problem has previously been acknowledged by Henry and Kennedy (2002) who also found in their study of women owned business in Ireland that statistics relating to the gender of business owners does not exist.

As previously stated Sample 1 comprised of female entrepreneurs from traditional industry sectors. This sample was obtained from 'The South East Business

Demographics Profile Database.’ This unique database was compiled by the Centre for Entrepreneurship at Waterford Institute of Technology and provided this researcher with access to entrepreneurs, both male and female, in the South East region. This database is unique as it differentiated the owner/founder of each business by gender. This was an extremely important characteristic for the current research as it allowed this researcher to select a suitable sample.

Sample 2 was made up of female entrepreneurs from the high technology industry sector. Unfortunately no businesses in the high technology sector were selected from ‘The South East Business Demographics Profile database’. This was due to the fact that although there were a number of female businesses operating in the manufacturing and construction industry sectors, none of these matched the research criteria and therefore could not be included in this study. While this database is not wholly accurate this fact alone gives an indication of how few women in the South East own and operate a high technology business. This coincides with research undertaken by O’ Gorman (2007) who identified in his research, on the number of high-tech, high-value add enterprises, in the South East between 1990 and 2001, that only 4% of the owner/managers were female. As a result of ‘The South East Business Demographics Profile database’ being the only available database that differentiated the business owner by gender another method had to be used to identify a suitable high technology sample. This sample was, therefore, obtained through personal contacts and matched against the research criteria to ensure that they were suitable candidates for the current research.

The author of the current study recognises that this research was limited by the number of interviews conducted. However, this is in part attributable to the fact that there was only one available database, differentiating owner/founder by gender, in Ireland. Coupled with this lack of statistics, relating to gender of business owners, is the small number of female entrepreneurs, in general, in Ireland. As previously acknowledged in Chapters One and Two, women account for merely 7.5% to 15% of entrepreneurs in Ireland (Henry and Kennedy, 2002). However, this situation is even worse in the South East region of Ireland, the area of study for the current research, where only 12% of the female

population is involved in entrepreneurial activities (O' Gorman and Bowe, 2006). Or as O' Gorman (2007) pointed out only 4% of the owner/managers of high-tech, high-value enterprises founded in the South East between 1990 and 2001 were women.

3.8.3 Selection of Research Instrument

The identification of the research criteria and sample section enabled the researcher to evaluate which research method was most suited to the current study. This involved undertaking a review of qualitative data collection tools; including such techniques as observation and participation, interviewing, documentation and visual methods. As stated earlier the research being undertaken is qualitative in nature and is of the phenomenological school of thought. Because of this and the level of information required, semi-structured interviews were deemed the most suitable research method. The reasoning behind the choice of semi-structured interviews is discussed in more detail in the following section.

3.9 Semi-structured Interviews:

An interview has been defined as “a conversation directed to a definite purpose other than satisfaction in the conversation itself,” (Bingham and Moore, 1941, cited in Chisnall, 2001, p. 173). Interviews are regarded as the most commonly used method of gathering qualitative data (Easterby-Smith et al, 1997; Mason, 2004).

Generally, personal interviews are categorised as fully structured, semi-structured and unstructured. Interviews were the chosen method for this study as they allow the interviewer to understand the meaning of issues and situations (Easterby-Smith et al, 1997). In particular semi-structured interviews were chosen as they allow the researcher to acquire information regarding personal, attitudinal and value laden material (Jankowicz, 2000). This use of personal interviews, therefore, was deemed the most

suitable instrument as the current research needed to gain in-depth information relating to motivational, attitudinal and personal factors. The information that was obtained from the use of semi-structured interviews was vital in gaining the answers to this study's research question and meeting the research objectives.

Semi-structured interviews consist of a combination of open and closed ended questions and are suitable when both factual and attitudinal information needs to be collected (McNeill and Chapman, 2005; Saunders et al, 2003). This was important for the current study where factual information needed to be collected through the use of closed questions and open ended questions were then utilised in order to gain an appreciation of each female entrepreneur's individual situation.

Saunders et al (2003) also stipulated that semi-structured interviews are non-standardised allowing the researcher to omit certain questions or to change the order of questions in different interviews. This was an extremely important characteristic for the current research as the two samples had varying needs and the interview schedule needed to reflect this. The non-standardised nature of semi-structured interview also allowed this researcher to pursue emerging themes which arose during the course of the interview. This flexibility is cited by many researchers including Sekaran (2003) and Denscombe (2005) as an inherent trait of semi-structured interviews. However semi-structured interviews, as opposed to a fully unstructured interview, require the interviewer to have a general list of themes and questions prepared in advance. It was also necessary to have a number of questions prepared prior to the interviews to allow for a comparative analysis to be conducted between the two samples.

There are also a number of other advantages associated with personal interviews which were relevant to the current research:

- The researcher is likely to gain valuable insights based on the depth of the information gathered.

- Interviews are a good method for producing data based on informants' priorities, opinions, and ideas. Informants have the opportunity to expand their ideas, explain their views and identify what they regard as the crucial factors.
- Interviews are generally prearranged and scheduled for a convenient time and location. This ensures a relatively high response rate.
- Interviews can be a rewarding experience for the informant. Compared with questionnaires, observation and experiments there is a more personal element to the method and people enjoy the rather rare chance to talk about their ideas at length to a person whose purpose is to listen and note ideas without being critical.

(adapted from Denscombe, 2005, p.189)

For the current study this researcher believed that these factors were particularly important for the current study as it allowed her to attain a large amount of knowledge from the respondents and to gain an in depth perspective of each entrepreneurs situation. Semi-structured interviews, thus, enabled this researcher to gain a holistic view of each of the female entrepreneur's situation. As acknowledged by Denscombe (2005) the personal interview gives the respondent the opportunity to give their opinions and what they regard to be important factors. Another advantage for this current study was that it allowed this researcher to clarify doubts and correct any uncertainties at the time (Sekaran, 2003). Finally this researcher encountered no problems in scheduling the interviews as a suitable time and location had been agreed in advance.

3.9.1 Pilot Interviews

Remenyi et al (1998) stressed the importance of pre-testing the interview schedule. They believed that the aim of conducting pilot interviews is to get feedback, to check that the interview schedule is effective and to ensure that the coding will be consistent. This may be done informally with the help of friends or family or conducted more formally by using academics or practitioners. The current interview schedule was pre-tested by businesswomen who were already known to and were friends of the researcher.

In total this researcher conducted three pilot interviews, two from traditional service type sectors and one from the high technology sector. The pilot interviews provided very good feedback. From this feedback it was discovered that a number of questions were causing some confusion and needed to be amended while others were not providing information that would aid in answering the research question and, therefore, were deleted. As such this researcher also advocates the use of pilot testing in all situations.

3.9.2 Interview Content

As stated previously semi-structured interviews employ both open and closed ended questions. In this current study, closed ended questions were mostly used to obtain information on basic factual data related to the demographics of the business owner and of the business. However, as it the nature of semi-structured interviews the majority of the questions were open ended and probing questions as proposed by Saunders et al (2003). Such questions addressed issues which needed an in depth exploration and addressed areas such as motivations, attitudes and other antecedent influences that may have impacted the female entrepreneur. As the nature of the current research is all about understanding and gaining an appreciating of each female entrepreneurs unique situation, therefore, “what,” “why,” “how,” “explain that” type questions were used (see Appendix A).

3.9.3 Interview Protocol

A total of four semi-structured interviews were conducted in this study, with two female entrepreneurs being interviewed from the traditional service sector and two from the high technology sector. To acquire the traditional entrepreneurs, this researcher, randomly selected a number of business names from the database and then began a process of cold calling the potential interviewees. In order to gain access to the high technology

entrepreneurs, preliminary contact was primarily made by the person known to the entrepreneur and then by this researcher, again by telephone. These phone calls informed the entrepreneurs of the nature of the research and also of the importance of the entrepreneurs' role to the current study. Once consent had been obtained a number of other issues relating to the duration (approximately one hour) and content of the interview were clarified. As all four respondents gave their consent to be interviewed a suitable time and location was arranged during this phone call. In total this researcher only contacted six female entrepreneurs to obtain the four interviews for the current research.

This preliminary contact also allowed this researcher to highlight a number of issues with which the respondent may not be comfortable. The first issue to be highlighted was the researcher's intention to use an audio recording device or dictaphone in the interview. All four respondents gave their permission for it to be used. Secondly, the issue of confidentiality was raised with the respondents. The respondents were assured that the information they provided would be treated in the strictest confidence and that they would remain anonymous in the thesis. These two issues were also raised at the start of each interview and confirmation of agreement obtained.

Due to the limitations associated with the availability of an appropriate database of female entrepreneurs, this researcher, was limited to conducting two interviews with high technology female entrepreneurs. The number of high technology entrepreneurs was also limited by the small number of females currently operating in these sectors in the South East, approximately 4% (O' Gorman, 2007). It was also found that not all available enterprises were considered "high-tech" when matched against the definition utilised in the current research. The sample size can be considered representative when one takes into account the above factors and the fact that out of 804 enterprises, started between 1990 and 2001 in the South East, only 32 were owned/managed by females. In order to then facilitate a comparative analysis with entrepreneurs from high technology and traditional sectors, two females were chosen from traditional type industry sector to be interviewed.

3.9.4 Note-Taking & Recording

Note-taking is an important part of recording an interview. Sekaran (2003) acknowledged the importance of note taking in the interview as she believes that information obtained from memory alone is likely to be imprecise and incorrect. In addition to this Denscombe (2005) has advocated the use of field notes to highlight such issues as atmosphere, intent and non verbal communications. However, Jankowicz (2000) believed that this method is only suitable, by itself, for interviews which last twenty minutes or so. As the interviews in this study were approximately one hour in duration, it was decided to record the interview. This is in accordance with Denscombe (2005) who suggested recording an interview for permanency, in conjunction with hand written notes, to highlight any additional issues.

Legard, Keegan and Ward (2003) have also stressed that the use of audio recording is highly desirable in an interview situation. They believe that it allows the interviewer to devote their full attention to the interviewee. Other advantages of using audio recording are that it allows answers to be accurately recorded, it provides an unbiased version of the events, allows the researcher to concentrate on questioning and listening while allowing for quotation and re-listening when necessary (Saunders et al, 2003).

However, many researchers have stressed that recording can negatively impact on the interviewee by making them self-conscious or alarmed (Bryman and Bell, 2003). This Sekaran (2003) believed is because they know that their voices are being recorded and their anonymity is not being preserved (p.231). However, for the current study the researcher overcame these problems by informing the interviewees of the purpose of the dictaphone and obtaining their permission to use it prior to the interview, also the interviewees were assured of confidentiality and anonymity. All four respondents permitted the use of the recording device

Bryman and Bell (2003) have advocated transcribing the interview whenever possible so as to gain an understanding of not only what was being said but the manner in which it

was said. This was an extremely time consuming task but one which is valuable to and necessary for the research. Overall for every hour of interviewing it takes approximately seven hours to transcribe the interview (Jankowicz, 2000). Each interview was then read in full to gain an understanding and appreciation of each female entrepreneur's reason for their choice of particular industry sector.

3.9.5 Limitations of Semi-Structured Interviews

There is a belief that conducting semi-structured interviews are relatively easy (Denscombe, 2005), however, according to Mason (2004) interviewing is not an easy task and can in fact be quite difficult and complex. She states that interviewing actually requires a lot of resources such as skills, time and effort both in the interviewing and analysis stages. Denscombe (2005) has drawn attention to a number of disadvantages associated with the interview method;

- High costs to the researcher if the interviewee respondents are geographically widespread
- Analysis, transcription and coding of the interview data is time consuming
- Recording devices can inhibit the interviewee as many people prefer to speak "off the record"
- The interviewer may introduce bias into the interview situation

(adapted from Denscombe, 2005)

Firstly, costs were a consideration as the length and depth of the interviews conducted in this study involved the researcher purchasing a dictaphone machine and personal interviews also incur travelling costs which interviews conducted over the telephone would not. This researcher does acknowledge, however, that these costs were not as high as if the sample had been more geographically dispersed or if the study had been administered nationally rather than regionally.

As regards time consumption, the amount of planning and effort that the interview method requires is substantial. As can be seen from Figure 3.4 there are a number of stages in this process which require the continuous cross referencing of each stage. Mason (2004) established that semi-structured interviews require the interviewer to have a schedule of what themes and type of questions should be covered in the interview itself. This requires the interviewer to have spent considerable time developing these key points (Denscombe, 2005). An interview also takes an extensive amount of time to plan, conduct, analysis and transcribe. This researcher concurs that the total time this process took is considerable and can be viewed as a limitation of this research.

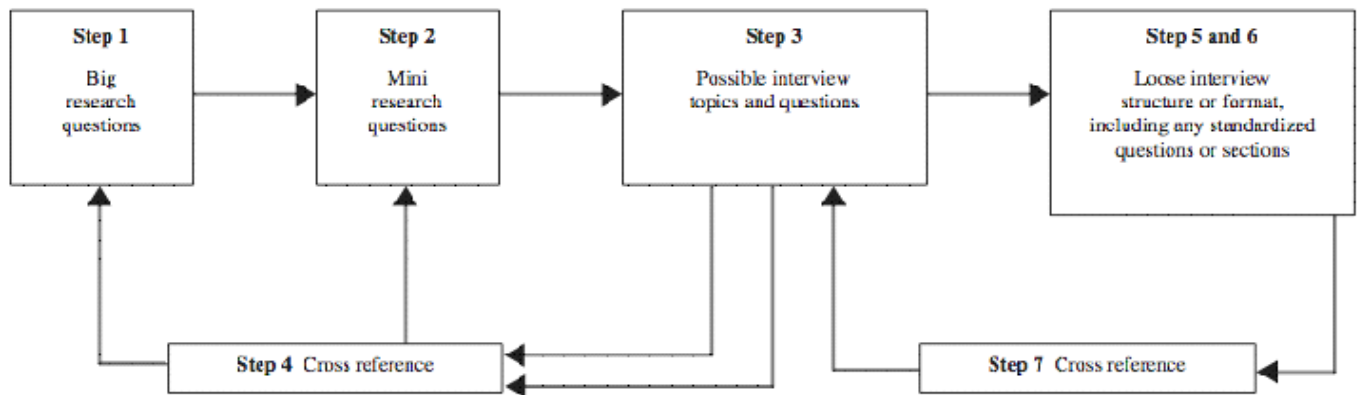


Figure 3.4 Planning procedure for qualitative interviews (Source: Mason, 2004, p.72)

Numerous authors including Sekaran (2003), Bryman and Bell (2003) and Denscombe (2005) have all highlighted that a recording device may inhibit interviewee responses. This is due to the fact that the interviewees' anonymity is not preserved and this may cause confidentiality concerns to arise. The interviewer of the current research was aware of this and assured each respondent of confidentiality and anonymity prior to the interview.

Finally, Denscombe (2005) also advocated that the interviewer can introduce bias to the interview situation. To overcome this, the researcher of the current study recorded the

interview with a dictaphone, took additional notes, listened intently to the interviewees answers and carefully transcribed each interview in full.

3.9.6 Analysing the Data

Qualitative data are a source of well-grounded, rich descriptions and explanations of processes in identifiable local contexts (Miles and Huberman, 1994, p. 1). Miles and Huberman believed that the researcher or co-elaborator is as much a part of the data with which they have decoded and encoded. However, the use of a tape recorder, in conjunction with field notes, allows the researcher to return to the data in its original form as often as they wish (Silverman, 2005). Therefore, after each interview had been conducted the researcher carefully transcribed it. Transcription is an important part of the analysis process as according to Silverman (1993) the transcribing of audio recordings provides documentation of the procedures used in analysis.

Numerous authors have stated that while there are many software tools that aid analysis, analysis can be done just as effectively manually (Johnson and Harris, 2002; Mason, 2002). Johnson and Harris (2002) have argued that this is because analysis is a cognitive process and can be done manually with a lot of handwriting. Therefore, this researcher decided to perform the analysis manually due to the reasonably small sample size and the researchers in depth knowledge of the four respondents.

The transcript of each interview was then read in full in order to gain a general understanding of each interviewee's experience with self-employment and each statement was allocated an equal value (Kvale, 1996). Each interviewee was also assigned a basic code to allow for ease of reference, "TI" represents the traditional industry entrepreneurs and "HT" represents the high technology entrepreneurs. Miles and Huberman (1994) have stipulated that once the data has been gathered that it is then important to begin the process of reducing the data. This process involves developing preliminary codes, which

are simply tags or labels for assigning units of meaning, to the information which has emerged from the information compiled.

The next step in this process involved formulating categories that were specific to the research question and objectives and which reflected the overall themes relating to the research topic. The data obtained from the interviews was then separated under these categories and further sub-coded (Miles and Huberman, 1994). Data that was not relevant to, or that failed to answer, the research question was eliminated. Finally, further analysis was conducted to examine the personal, motivational and attitudinal factors which influenced the female entrepreneur's choice of industry sector. When it was deemed that all emerging themes were recorded and all categories were coded this process was complete. This process is in accordance with Miles and Huberman (1994) who believe that, with manual coding, revision and revising codes is tedious but is also a crucial part of the analysis.

A common concern with qualitative studies is that the findings are not generalisable due to the small number of respondents associated with this research. However, while this researcher acknowledges this problem and accepts it is difficult to generalise from smaller numbers it is acceptable from a reliable and valid point of view to do so. In fact, Kvale (1996) argued that significant knowledge may be gained from a small number of subjects as single cases allow the researcher to examine the relationship of a single behaviour in context.

3.10 Conclusion

This chapter has provided the reader with an overview of the research methodology and methods employed in this study. The research problem was examined and justification for the study provided. The research question and research objectives, derived from this problem, were then identified and defined. The research process was also explored with particular emphasis placed on the "Research Process Onion" developed by Saunders et al

(2003). Consequently an in-depth discussion of the philosophy and examination of qualitative and quantitative research was undertaken.

Following a description of the research criteria the identification of the research sample was clarified. It is important to reiterate that this study had a small number of sample respondents from which to select due to a combination of a number of factors. Primarily, these consisted of the presence of only one database which differentiated the owner/founder by gender, the small number of female entrepreneurs in Ireland, in general, but particularly in the South East and the fact that only a small percentage of females in this region have started high-tech enterprises.

The primary data collection tools utilised in this study were then discussed. Particular emphasis was placed on the semi-structured interview with many aspects of this method being clarified and highlighted. Chapter Four will now provide an insight into the research findings.

Chapter Four:

Research Findings

Chapter 4: Research Findings

4.1 Introduction

The findings from the current study will be presented in this chapter. The aim of this research is to investigate the influences that encourage women to enter the type of industry sectors that they do, specifically the reasons why they enter traditional sectors versus the reasons why they enter high technology sectors.

Many researchers, including Schwartz (1976); Birley (1989) and Brush and Hisrich (1991) have all recognised the importance of antecedent influences (such as family background, educational level, previous experience etc) in the creation of women owned enterprises. This current study was designed, however, to determine if these influences impinge upon a female entrepreneur's choice of industry sector. As such this chapter is subdivided under the following headings: demographics, education, family background, socialisation, previous work experience, motivations for starting the business and an exploration of attitudes towards female entrepreneurship and high technology.

Therefore, this chapter will examine the findings from this current research to determine if similarities or differences exist between the women in high technology sectors and the women in the more traditional industry sectors. It is the intention of this researcher to conduct this analysis so as to provide an understanding or inclination as to why women enter the type of industry sectors that they do.

4.2 Data Analysis

As stated in chapter three the research methodology employed in this study is qualitative in nature with semi structured interviews acting as the research tool. The following sections will disclose the findings from these interviews. The following abbreviations

will be used when referring to the female entrepreneurs in this study (see Table 4.1):

Interviewee	Abbreviation
Female Entrepreneur in Traditional Industry 1	TI1
Female Entrepreneur in Traditional Industry 2	TI2
Female Entrepreneur in High Technology Industry 1	HT1
Female Entrepreneur in High Technology Industry 2	HT2

Table 4.1 Respondents abbreviations (Source: Current research)

4.2.1 Demographics

The questions in this section were utilised so as to build up a profile of the female entrepreneurs at the start-up stage of their businesses. The businesses in this study are from a diverse variety of industry sectors, including health and beauty, food manufacturing, pharmaceutical and ICT. Table 4.2 details the personal characteristics of all respondents.

	TI1	TI2	HT1	HT2
Industry Sector	Health & Beauty	Food Manufacturing	Pharmaceutical	ICT & Education
Year Business Established	2000	2000	2002	2006
Age at Start-Up	28	31	33	35
Marital Status at Start-Up	Single	Married	Single	Single
Children at Start-Up	No	Yes	No	No
Ages of Children (In years)		1, 5, 7		

Table 4.2 Demographic characteristics of respondents (Source: Current research)

All of the businesses involved in this research were relatively new with the oldest being established six years ago and the newest only last year. As it happened it was TI1's and TI2's businesses which were the longest established, both were set up in 2000. Contrary to previous research which found that most women are over forty when starting their businesses (Hisrich and Brush, 1984; Brush and Hisrich, 1991; Buttner, 1993), the findings from this study and other recent research have found that the female entrepreneurs are now starting their business at a younger age (McClelland, Swail, Bell & Ibbotson, 2005; Sarri and Trihopoulou, 2005; Still and Walker, 2006). TI1 was the youngest when starting her business at twenty eight with TI2 starting her business at thirty one, HT1 and HT2 were both older at start-up being thirty three and thirty five respectively. This research, therefore, shows that there is a difference in the ages of the women in high-tech compared to those in the low tech areas with those in high tech being older than their counterparts in traditional sectors. The findings from this current study support previous research which found that entrepreneurs in high technology sectors are often older than their counterparts in other sectors (Roberts, 1991; Colombo and Delmastro, 2001; Madsen, Neergaard and Ulhøi, 2003)

However, contrary to previous literature which states that female entrepreneurs are usually married with children when they start a business (Hisrich and Brush, 1984; Brush and Hisrich, 1991; Buttner, 1993) only TI2 was married with children at the time she started her business. TI2's children were also quite young at the time of start-up as she commented:

“I needed an outlet that allowed me to work when the children
were literally asleep or in school” (TI2)

TI1, HT1 and HT2 were all single with no children when they established their business and, in fact, only TI1 has since married and now has a child also. This may suggest that for those women in the high technology sector rearing a family may not be compatible with their work commitments.

4.2.2 Education

There has been some research conducted that has suggested that girls who attend a single sex school have less pressure from the opposite sex and, therefore, have higher career aspirations (Watson, Quatman and Edler, 2002) thus reducing the stereotype that women are not suited to technical, non-traditional careers. However, there is no evidence from the current study to suggest that girls that attend a same sex school are more likely to choose a career in non-traditional sectors. The findings from the current research study show that TI1 and HT2 both attended mixed sex schools at post primary level while TI2 and HT1 both went to a same sex post primary school. Nonetheless, while HT1 did indeed attend a same sex school and chose a career in high technology, she also revealed that her guidance teacher encouraged her to consider teaching or nursing rather than her chosen career in chemistry. This has been highlighted in previous research which also found that there is a tendency for teachers/counsellors to encourage girls towards more traditional careers and boys towards more male orientated careers (Gates, 2002 as cited in Adya and Kaiser, 2005).

The subject choices, however, offered by these two types of schools did indeed differ. The subject choices offered within these schools and the actual subjects taken were examined in this research. What was discovered was there was a wider array of subjects available in the mixed sex schools than in the same sex schools. It is also interesting to note that the two high technology entrepreneurs took more science based subjects than their traditional counterparts. The choice of subjects available and the subjects taken are illustrated in Table 4.3.

	TI1		TI2		HT1		HT2	
	Subject Choice	Subject Taken	Subject Choice	Subject Taken	Subject Choice	Subject Taken	Subject Choice	Subject Taken
Mathematics	✓	✓	✓	✓	✓	✓	✓	✓
Information Technology	✓							
Science	✓	✓	✓		Split into 3 ¹		✓	✓
Biology	✓	✓	✓		✓	✓	✓	✓
Chemistry	✓		✓		✓	✓	✓	✓
Physics	✓		✓		✓		✓	✓
Technical Graphics	✓							
Construction Studies/Woodwork	✓						✓	
Metalwork/Engineering	✓						✓	

Table 4.3 Subjects offered and taken by respondents at post primary level (Source: Current research)

As can be seen from Table 4.3 TI1 had all subject choices available to her, however, she only took maths, science (to junior cert level) and biology but remarked that:

“Our school was very progressive and we were actively encouraged to take everything in our first year” (TI1)

TI2 had the option to take maths, science, biology, chemistry and physics and the only subject she actually took was mathematics as this was a mandatory subject. HT1 had the same option choices as TI2; however she took mathematics, biology and chemistry. HT1 revealed however that if she wanted to take honours maths or physics there was an

¹ HT1 did not state whether she had taken science at junior certificate level, she did, however, state that in her school science was split up into the subjects, biology, chemistry and physics.

arrangement that she could attend another school for these particular two subjects. HT2 had the option to take all subjects except IT and technical graphics and she took maths, science, biology, chemistry and physics.

An interesting finding from this current study is that HT1 and HT2 have a higher level of formal education than either of the women in the traditional sectors. Both HT1 and HT2 have achieved a postgraduate degree from a science faculty. TI1 and TI2 on the other hand have achieved trade qualifications. TI1’s educational path was different to the others as her original diploma is in a different discipline than her trade qualification and the sector that she started her business in. TI2 when asked this question replied that post primary level was her highest level of education, however when probed further it was revealed that she had attained a trade qualification specific to the business she has started.

The findings also showed that all the women concurred that their area of study is related to the businesses they have established. For example, TI1 and HT2 both responded that their qualifications were very specific to the industry sectors in which they operate. HT1 also agreed that her specialist area was related to her business but only in the sense that its “science based and you need a science background for her business” (HT1), but her work experience provided her with the other skills necessary for her business. Areas of specialism were varied and included sports therapy, food manufacturing, analytical chemistry and human computer interaction.

	TI1	TI2	HT1	HT2
Highest Level of Education	Trade	Trade	Postgraduate – Masters Level	Postgraduate – Masters Level
Specialist Area	Sports Therapy	Manufacturing (Food)	Analytical Chemistry	Human Computer Interaction

Table 4.4 Highest level of education in specialist area (Source: Current research)

It was also noted that none of the respondents from either sector had taken any business or enterprise subjects during the course of their post primary or higher level studies. However, TI1, TI2 and HT2 all undertook a Start Your Own Business Course (SYOB) prior to start up and covered these types of subjects during their training on these courses. HT1 on the other hand chose to meet with a mentor from an enterprise board instead of doing a SYOB course. TI1 was very enthusiastic about these courses and stated that “they provided her with great support and networks” (TI1).

The findings also showed that there was some contradictory evidence as to whether or not their specialist qualification influenced the type of business they started. TI1, TI2 and HT2 agreed that their qualification did influence their business and TI1 commented that her course was very *hands on*. However HT1 believed that it was her experience after her education which influenced her business to a greater extent. Overall from this study there was mixed opinions as to whether their education was adequate for their respective careers.

4.2.3 Family Background

This study also sought to gain an insight into the family background of female entrepreneurs as according to previous literature more highly educated parents may encourage their offspring into less traditional industry sectors (Jackson, Gardner and Sullivan 1993). There is evidence from this current study to support this as it was found that HT1’s and HT2’s parents had higher levels of education than both of the women in the traditional sectors. HT2’s parents, both of whom had achieved the highest levels of formal education in the current study, and HT1’s parents also encouraged them to enter the high technology sector. The findings from this research have also shown that the occupations of the respondents’ parents do vary but there are some similarities between the educational levels attained by the parents of the entrepreneurs within the two sectors. Table 4.5 provides a summary of both the educational levels and the occupations of the respondents’ parents.

	T11		T12		HT1		HT2	
	Father	Mother	Father	Mother	Father	Mother	Father	Mother
Highest Level of Education	Primary	Post Primary	Primary	Post Primary	Post Primary	Post Primary	Post Graduate	Higher Level
Occupation	Butcher	Secretary	Plasterer	Factory Worker	Self-Employed	Self-Employed	Academic Historian	Civil Servant

Table 4.5 Educational levels of respondents parents (Source: Current research)

T11’s mother obtained a post primary level education by completing leaving cert; her father on the other hand only went as far as primary cert (6th class). T12’s parents have a similar background to T11’s as her mother achieved a post primary school education and her father attained only primary school level education. Both T11’s and T12’s fathers then went on to do apprenticeships, T11’s as a butcher and T12’s as a plasterer. Similarly the mothers of T11 and T12 both had manual jobs, a secretary and factory operative respectively. It is interesting to note that while all respondents, regardless of industry sector, gave their mothers occupation they also all cited that they were mothers and housewives additionally. For example T12 commented that:

“.....my mother was a housewife most of her life and a factory worker and cook and chef and everything else” (T12)

This comment is interesting when taken in the context that T12 has since started a food manufacturing business and mentioned that her mother was a cook and a chef.

HT1’s parents on the other hand both achieved a post primary level education; however, HT1 was unsure whether her mother had sat her leaving certificate or not. Her mother was then a housewife but went on to be a self-employed shopkeeper. Her father was also self-employed as a “wholesale fruit merchant” (HT1).

As can be seen from Table 4.5 HT2's parents attained the highest formal level of education in this study. Her father attained a doctorate and continued to work as an academic historian. HT2's mother was also highly educated as she achieved a primary degree and also an honorary doctorate. Her mother then worked as a civil servant but with the introduction of the marriage bar was forced to give up work and so continued to be a full-time mother and poet. It was also interesting to note that both HT1 and HT2 were encouraged and supported by their parents when starting their businesses. In both cases it wasn't practical encouragement but rather that their parents approved of whatever they did; for example HT1 stated that her parents have always been the kind that believe 'you do what you want to do' and would never discourage her. HT2 had a similar answer as she responded that her parents "pretty much approved of anything I did" (HT2).

As stated earlier previous research has identified that more highly educated parents are more likely to provide their children with encouragement for careers in non traditional female sectors (Jackson et al, 1993). It is interesting to note then that TI1's and TI2's parents were not as encouraging as the parents of the women in the high technology sectors. TI2 stated that her parents "would have encouraged her but that they would also have had many concerns and worries for her." She also mentioned later that her husband joined the company in 2002 and left a "pensionable job" (TI2), to do so. Similarly TI1 said that her parents did not encourage her to start her own business and in fact "thought she was crazy to leave a permanent pensionable employment to start a business" (TI1). As can be seen from the above comments both TI1 and TI2 parents would have been concerned about their daughters becoming self employed. This is in contrast to the parents of the high technology respondents and it is a noteworthy difference between the women in the traditional and high technology sectors.

Previous research has also found that an entrepreneurial family background can encourage a woman to start a business (Goffee and Scase, 1983; Goodbody Report, 2002). An interesting finding, therefore, from this present study is that all of respondents had an entrepreneurial presence within their family. The women in this current study all had immediate family members as well as extended members in self employment prior to

they starting their own business. Table 4.6 shows the entrepreneurial backgrounds of the participants.

TI1 had numerous entrepreneurial influences in her family background prior to her starting her own business as can be seen in Table 4.6. Her brother owns a cartoon animation business and as TI1 herself states it's a very lucrative business. She also reported that he had been nominated for an Oscar two years previously. Many of her father's family would also have been self employed and they would have been supportive of her and her venture. Finally her partner had his own business in the pest control industry before TI1 started her business. It is interesting to note, however, that all TI1's family members, except her brother, operate in sectors which can be classified as traditional industry sectors.

<i>Prior to Star-Up</i>	TI1	TI2	HT1	HT2
Immediate Family Self Employed	✓	✓	✓	✓
Extended Family Self Employed	✓	✓	✓	✓
Spouse/Partner Self Employed	✓			

Table 4.6 Entrepreneurial backgrounds of respondents (Source: Current research)

Similarly TI2 had both immediate and extended entrepreneurial family members in her background. Her brother owns a restaurant business in America, which is a similar type of business to TI2's herself. Her sister on the other hand had, in the past, owned a crèche for a year and a half prior to TI2 starting her own manufacturing business. Again TI2 mentioned that two of her cousins run their own businesses, one as a chemist and the other as a travel agent.

Both women in the high technology sectors have both immediate and extended family in self employment but neither one had a self employed spouse or partner. HT1's immediate family are all entrepreneurial as her father, mother, brother and sister were self employed. However, her sister did not establish her own business but rather took over the running of the family business while her brother is an artist. Therefore HT1 is the only respondent with entrepreneurial parents, this is contrary to other research which has established that parents were the most frequently cited entrepreneurial role models for women (Mattis, 2004).

HT2's brother owns a business in the IT industry which is a similar industry sector to that of HT2 herself. She also mentioned that her sister in law is a restaurant owner. HT2 revealed that her brother was an influence on her in terms of her career choice and her choice of industry sector. She believed that because he had already started two businesses in the IT industry, this showed her that it could be done and there were some elements of sibling rivalry because as she stated "If he can do it, then so can I" (HT2).

HT1 also believed that her parents influenced her choice of career as again she felt that because she grew up with her parents being self employed that this made her realise that it could be done as long as you were willing to work hard. However, her choice of industry sector was not influenced by any entrepreneurial members of her family but rather by the fact that she liked it and more importantly that she was good at it.

TI1 and TI2, unlike their counterparts in high technology, stated that the presence of entrepreneurial family members did not influence their choice of career or their choice of industry sector. TI1 stated that:

"I'm really stubborn anyway, so I was determined I was going to do it"
(TI1)

TI2 on the other hand put her choice of career down to necessity, the need to accommodate family life with work, rather than an overriding desire to become self

employed. TI2 also revealed during the course of the interview that she was either going to start a food manufacturing business or a crèche and had in fact had premises purpose built that would accommodate either business. This is interesting as these are the two industry sectors in which TI2 has experience of through immediate family members. However, she herself felt that her brother, being in the restaurant business, did not influence her choice of industry sector.

4.2.4 Socialisation:

This section presents the findings pertaining to the socialisation of the entrepreneurs involved in this current study. Previous research has found that women in non traditional sectors had patterns of early childhood socialisation in common that differed from women in traditional sectors (Coats and Overman, 1992). It was hoped, therefore, that by studying female entrepreneur's socialisation development that it may provide an indication as to the type of industry sector that she will choose. This section also aims to uncover how each entrepreneur, in their younger years, viewed women's roles in society.

For example, research has found that women in non-traditional professions are more likely to have male childhood playmates and to have been involved in competitive sports as children (Coats and Overman, 1992). The findings from the current study found that all the women involved in the current study were in agreement that they would have been considered "a tomboy" when growing up. However, HT1 also stated that while she was a tomboy with many male friends that:

“..... I also spent a lot of time reading and playing with dolls”

(HT1)

TI1, TI2 and HT2 were also all involved in competitive sports when younger. HT1, on the other hand stated that she did not participate in competitive sports. Therefore all

respondents would have been regarded as “*tomboys*” and all the respondents, apart from HT1, were involved in competitive sports.

This research also looked at what subjects the entrepreneurs would have favoured in school to discover whether there may be a link between these and their later choice of industry sector. TI1 and TI2 both replied that they liked physical education (PE); however TI2 also stated that she liked Home Economics and that:

“.....I got an A in Home Economics at post primary level and that’s why I’m here (food manufacturing business) today” (TI2)

HT1 also responded that she liked Chemistry in school and had always been good at it; she also mentioned Art, English and Geography. Biology was the only subject mentioned by HT2. Therefore TI1, TI2 and HT1 all favoured subjects in post primary school that were related to the businesses that they have started. HT2, on the other hand, did not. But this may be because IT was not available to her as a subject choice in school, rather than anything else.

The final area in socialisation to be examined was the female entrepreneur’s perceptions towards women’s roles in society. TI1 had a very traditional image as she remembered growing up with her mother at home. She also stated that her mother had minded children and she remembered the mothers of these children being very stressed trying to juggle family and work. TI2 stated that she believed that a woman’s role was to do everything, from being homemaker to driving the children around. Both of these viewpoints are quite traditional.

HT1 and HT2 on the other hand had quite liberal views as to what women could do. HT1 remembered that her mother had changed from being the typical housewife to starting her own business so that HT1 could go to college. Because of this HT1 perceived that women could do what they wanted as long as they were willing to work hard. She didn’t believe that this would always be easy though as she stated:

“.....you could do what you wanted, you might come up against obstacles, but if you wanted to do it yourself you could do it”

(HT1)

This is a view that HT1 seemed to carry with her and one that she expressed many times throughout the interview. HT2 believed that women should be equal to men and had quite a feministic view.

4.2.5 Previous Experience:

This section of the interview sought to gain an insight into the work history of the female entrepreneurs. To date research has offered mixed views whether prior experience is directly or indirectly linked to the type of business started (Brush, Carter, Gatewood, Greene and Hart, 2004). For example some research has found that women tend to establish businesses in areas that are familiar to them (Hisrich, 1990; Fielden, Davidson and Makin, 2000), while other studies have indicated that women may enter industries in which they have no relation to or any previous work or managerial experience (Fielden, Davidson, Dawe and Makin, 2003; Mattis, 2004). The findings from this current study found that all the women entrepreneurs had some form of previous experience that was related to the business that they started. However, an interesting finding from this current research is that the entrepreneurs in the high technology sectors had many more years experience in their industry than those in the traditional sectors. This contradicts previous research which has found that women business owners of high-tech, high-growth firms have fewer years of industry and business experience than women in more traditional low growth industries (Grundy and Welsch, 2001).

It was also determined if this prior experience, directly or indirectly, had an influence on the type of business started. Finally this section will examine the skills that these women had acquired prior to starting their business to determine the influence, if any, that these skills had on the decision to start a business in a particular industry sector.

As stated earlier many women start a business in an industry where they have no previous experience and to a certain degree this is applicable to both TI1 and TI2. TI1, for the most part, worked in a different industry to the one in which she started her business. Her “previous life”, as she calls it herself, was as a residential care worker. This involved her working in closed detention centres and hostels where supervision and care were the most important elements of her job. However, TI1 found these jobs very stressful and decided to change her career. As a result of this TI1 went on to do a Diploma in Sports Therapy through ITEC (International Therapy Examination Council). Through this course, TI1 did a work placement in an orthopaedic hospital. This placement was very specific to the role that she now performs. TI1 then worked as a gym instructor in a leisure centre where her duties comprised of designing programmes, teaching classes, supervising clients, day to day running and cleaning of gym and reception work. She phased herself out of her job as a gym instructor while simultaneously setting up her own massage and reflexology business.

TI2 had various unrelated jobs prior to starting her business such as working in a garden furniture factory and also in a seafood plant. After this she began working on a deli counter in a local shop where her duties were ordering, purchasing and stock rotation. It was here, however, that TI2 realised that she had a flair for the making and displaying of salads and other related food stuff. TI2 at this stage was only working part time and on the days she worked the shop achieved higher sales because of her displays. Again, similar to TI1, TI2 began simultaneously catering for family events while continuing with her job in the deli. Eventually TI2 realised that her catering could become a full time business and that she needed to acquire the necessary training and premises to do this.

HT1 and HT2 had very different career paths. After they completed their postgraduate studies they both went to work in their chosen careers. Unlike TI1 and TI2 both women in high technology worked full time prior to starting their businesses. HT1 stated that while she did do placements and these were related to her general discipline that they were not specifically related to the business she started. HT1 began her career as a senior study analyst of eco-toxicological products; her role there primarily involved the testing

of chemicals and pesticides. She also worked for other MNE's, however these positions involved compiling the data rather than doing the practical work and as such her roles evolved from an analyst, to regulatory affairs officer, to regulatory project manager, to regulatory affairs consultant. As discussed earlier she began by testing chemicals and pesticides and from this HT1 then moved to pharmaceuticals, because as she stated

“The pesticide/chemical area was too small and I was more interested in the drugs/pharmaceutical industry” (HT1)

HT2 again had very specific experience that was related to the business she started. After completing her masters, HT2 worked as a general programmer, then as a database specialist, this lead her to then becoming a trainer/consultant and finally, prior to starting her business HT2 worked as database manager where her responsibilities were running IT databases. As HT2's business is a mixture of ICT and education, her roles prior to her starting her business provided her the experience needed to effectively “train people to do the job I used to do” (HT2).

As can be seen from the above findings all the respondents operated in positions which were related to their businesses, TI1's and TI2's were directly prior to starting their businesses while HT1's and HT2's were more of a gradual evolvement to their current businesses. All the women, from both sectors, agreed that their experience did influence their choice of business in their respective industry sectors. Some of their comments included:

“They all led into each other and influenced the business” (HT1)

“My experience heavily influenced the business I started” (HT2)

As stated earlier this section also questioned what skills that the women had acquired from their previous work experience and to what extent these skills were a factor in they

starting a business in their chosen sector. Table 4.7 depicts the skills the respondents felt were applicable.

	TI1	TI2	HT1	HT2
Technical Skills			✓	✓
Marketing Skills			✓	
Financial Skills				
Managerial Skills	✓	✓	✓	✓
Connections/Networks		✓	✓	✓
Other	✓		✓	

Table 4.7 Skills acquired from previous work experience (Source: Current research)

As can be seen from the Table 4.7 all respondents acquired managerial skill from their previous work experience. TI2 stated that through her previous experience she acquired the skills to manage people, however, when probed further she also believed that she acquired the skills to make connections. TI1 also believed that she had acquired managerial skills but that her experience had also provided her with communication skills and empathy/counselling skills which are a “huge part of what we do in an understated way” (TI1).

Not surprisingly both HT1 and HT2 mentioned that the technical skills and expertise that they gained were very influential for their careers. HT1 also believed though that her experience had exposed her to multicultural skills and these were important for her business as she had many dealings with many different cultures. Therefore, in addition to her technical expertise HT1 also “had all these other pluses and advantages that she had gained” (HT1).

Finally while HT1 and HT2 agreed that these skills, particularly their technical skills, had an influence on starting businesses in their particular industry sector, TI1 and TI2 did not. TI1 and TI2 both felt that there were other reasons why they started their businesses and that they would have started their businesses in their chosen industry regardless of whether they had acquired these skills or not. The reasons that the female entrepreneurs involved in this study gave for starting their business will be explored in more detail in the next section.

4.2.6 Motivations

There are many reasons why an individual may start a business (Shane, Kolvereid and Westhead, 1991; Ministry of Industry, Employment and Communications, 2001), therefore, the aim of this research was to determine if there is any common reason why the women in this study firstly chose to start a business and secondly why they chose to establish their venture in their particular industry sector. Also there are many characteristics that are associated with entrepreneurship which are said to be masculine and from a research point of view this study aimed to discover if the women in this study associated themselves with these terms. Table 4.8 highlights the motivations in order of importance which the respondents chose (ranked in order 1-5, with 1 being their main motivation and 5 being their lowest motivation).

As can be seen from Table 4.8 none of the respondents ranked the motivations in the same order, however there are a number of motivations which the respondents had in common. TI1, TI2 and HT1 all chose “to have a better lifestyle”. HT1 and HT2 both chose “to be my own boss,” while HT1, HT2 and TI2 all picked “saw an opportunity.” TI2 and HT1 also both selected “to earn a good living” and “economic necessity.” Finally TI1 and HT2 both chose “for self achievement.” However there was no one reason given by all four respondents as a common reason why they chose to start their venture in their particular industry sector.

	TI1	TI2	HT1	HT2
To advance myself	4			
To grow a business				1
To make money				3
To earn a good living		5	3	
Balance between work & family		4		
To have a better lifestyle	1	3	2	
To be own boss			4	5
To have greater independence	2			
For self-achievement	5			2
Economic necessity		1	5	
Saw an opportunity		2	1	4
Something I always wanted to do	3			

Table 4.8 Motivational factors (Source: Current research)

TI1 started her business primarily for a better lifestyle which she saw as being the flexibility to choose her own hours of work. As discussed earlier her previous career was very stressful and involved working shifts and unsociable, long hours. Due to the stressful nature of her work, TI1 opted for massage and PE as forms of relaxation and as she stated herself:

“.....I started going for massage myself as a means of getting stress relief, so I always saw the opening there for the business”

(TI1)

TI2 on the other hand, started her business because of economic necessity. Her previous job wasn't compatible with rearing three young children and wasn't providing her with the income she needed. She herself stated that she needed to accommodate work around her family. This is a common motivation given by women for starting a business (Fielden et al, 2003). However, as can be seen from Table 4.8 TI2 also cited that she saw an opportunity for a food manufacturing business in her area. She realised this because she had received many complaints, during her time in the deli, about the quality of salad type foods. TI2 also recognised that she had flair for making these foods as she had been catering at many social events on an informal basis and in fact was unable to keep up with the amount of orders she was receiving. This then provided TI2 with a readily available existing customer base.

HT1 also decided to take advantage of an opportunity that she recognised within her industry. While in a sense HT1 was forced into starting her business, out of economic necessity, she believed that this was just the catalyst. HT1 and her business partner saw an opportunity within the pharmaceutical industry and they decided that the time was right for them to start their own business. Also HT1, similar to TI2, had an existing customer base as her clients all came from companies where she had previously worked and therefore knew and trusted her. HT2 on the other hand cited that she simply wanted to grow a business and knew that it could be done.

This research also asked the question as to why each female entrepreneur was attracted to her particular industry sector. Table 4.9 provides the combined responses of the respondents.

	TI1	TI2	HT1	HT2
Ease of entry	✓			
Low capital Requirements				✓
Previous knowledge/experience		✓	✓	✓
Working in industry		✓		
Contacts in industry	✓		✓	
Growth potential of industry	✓	✓	✓	
Possessed business skills				
Possessed technical skills				✓

Table 4.9: Reasons respondents chose industry sector (Source: Current research)

From the above analysis the two most common responses to this question were “had previous knowledge or experience in this area” and “saw the growth potential of the industry.” The second response contradicts other research which states that women are averse to growth (Buttner and Moore, 1997; Henry, Johnston and Watson, 2004). It is interesting to note, however, that both respondents from the traditional industry sectors chose “saw the growth potential” of the industry sector, while only HT1 selected it. This is unusual as high-tech businesses are also often linked to high-growth. Another point of interest is that only HT2 chose “possessed technical skills” as a factor as this had been cited by both HT1 and HT2 as a major influence for starting their businesses in the high technology industry. Founders of high technology firms need to have gained technological and market experience (Colombo and Delmastro, 2001) and thus one would think that possessing technical skills would be a major influence for HT1’s and HT2’s businesses.

TI1 stated that she started her massage and reflexology business because she already had “contacts in the industry”; saw the “growth potential of the industry” and knew that it

would allow “ease of entry”. As her business is an allied service to sports she obtained many of her customers from her previous job as a gym instructor. TI1 also mentioned that she started her business in the reflexology and massage sector as she is passionate about her industry sector and loves the “caring” element of her business. As TI1 responded her original role had been in a caring capacity and she still wanted to retain the caring aspect but also to earn a good income, massage was a good way to combine both.

TI2 started her particular business because she had “previous knowledge of the industry”, knew that there was “growth potential” and she also recognised that she had a flair for doing this and thus had the confidence to do it.

HT1 replied that all of the factors listed in Table 4.9 were valid reasons for her to start her chosen business in the high technology industry. However, she chose “growth potential of the industry”, had “previous knowledge and experience” in the area and had “contacts in industry”. HTI also stated that she started her business in the pharmaceutical industry because it is the one she knows and she wasn’t prepared to go do something that she didn’t know anything about. HT2 on the other hand responded that she had the “previous knowledge and experience”; “possessed the technical skills” and her sector has “low capital requirements”. She also stated, similar to TI1, that it is “an industry that I find exciting and one that interests me greatly.”

Once the reasons why each respondent chose their particular industry sector were explained the next set of questions asked the respondents to select terms which they felt best described their personality. Table 4.10 provides a synopsis of the terms that were chosen by the respondents to describe themselves.

	TI1	TI2	HT1	HT2
Innovative				✓
Customer focused	✓	✓		
Quality orientated		✓	✓	
Sympathetic		✓		
Confident			✓	
Desires to be one's own boss	✓			
Technical				✓
Flexible	✓		✓	
Desire a challenge				✓

Table 4.10 Characteristics of respondents (Source: Current research)

It is interesting to note that both women in the traditional industry selected “customer focused” as this is consistent with other research which has found that women have a customer focused approach to business (Brush, 1992; Carter, Williams and Reynolds, 1997).

HT1 chose “quality orientated,” “confident “and “flexible.” It is interesting that HT1 chose confident as this has been cited as a problem for many women in business (GEM, 2004) and a characteristic which would be more common to men than women. HT2 selected traits which are different to any selected by the other three respondents, these are “innovative,” “technical” and “desire a challenge.” There is a common belief that such characteristics would be more masculine than feminine.

4.2.7 Attitudes towards High Technology

According to Anna, Chandler, Jansen and Mero (2000) more women start traditional retail and service businesses rather than high technology, manufacturing and construction enterprises. Therefore the next section addressed various attitudes and opinions pertaining to women in high technology industry sectors. The aim of this section was to learn more about various issues related to female entrepreneurship and high technology and to establish if these attitudes influence the type of business that the respondents in this study set up.

It was decided that this research should investigate why the respondents in the traditional industry sectors had not started a high-tech business. Therefore, during the course of the interview both TI1 and TI2 were asked a question of this nature. TI2 replied that she hadn't chosen not to start a high technology business. On the other hand TI1 stated that she wouldn't have either the confidence or interest to start a high technology business. This finding supports previous literature which has cited confidence as a problem for many women in business (Goodbody report, 2002; GEM, 2004).

All the women in this study, however, stated that women traditionally starting businesses in the traditional industry sectors did not influence their decision to start their businesses, regardless of industry sector. Comments included:

“It didn't enter into my decision; I just loved the industry” (TI1)

“No this is my area and if it had been designing rockets then that's what I would have done” (HT1)

“It never entered my head whether women were in the industry or not” (HT2)

Following on from the above examination of the respondents attitudes towards high technology, it was then asked why the respondents thought more women set up these

traditional type businesses. TI1 believed that it was because women needed flexibility to accommodate children with work. This finding supports previous research which has found that through self-employment women are able to combine family life with their careers (Buttner, 1993; McKay, 2001; Orhan & Scott, 2001; McClelland et al, 2005). TI1 also suggested that perhaps these sectors “require skills that come easier to women.” TI2 on the other hand, put it down to the fact that women are good at multitasking and are better able to deal with more than one problem at a time; however TI2 was basing this on her personal experience within the catering industry.

HT1 and HT2 expressed similar views on this subject. HT1 primarily felt that women are not acquiring qualifications in high technology related disciplines. HT2 also expressed a similar view as she stated that women start traditional type businesses because females are just not participating in ICT and other high technology disciplines. This finding is consistent with other research that has found that females only account for approximately one third of students on natural science and engineering type courses (Madsen et al, 2003). HT1, however, also agreed with TI1 that domestic responsibilities can constrain women in high technology sectors. HT1 stated that:

“By the time women in the high technology sectors gain the experience and confidence to start a business they are already married with children and can’t accommodate both” (HT1)

This research then aimed to discover the views of the female entrepreneurs, both working within the high technology industry and those not, on whether or not they believe that the high technology industry is male dominated. All of the respondents did believe this to be the case. However, while HT1 did agree that certain industry sectors within high technology are male dominated, she did not believe this to be the case in the pharmaceutical sector. HT2 believes that high technology is male dominated but that this is because of the low levels of women participating in ICT and other related subjects. Nevertheless all the women in this study stated that this did not affect their decision to enter their industry sector. HT2 made an interesting point; she believed that in “IT gender

doesn't matter as long as you had the necessary skills and for her it was the prospect of a high salary that attracted her to the industry" (HT2).

Leading on from this a question was asked as to whether the respondents agreed that fewer women start up high technology businesses. TI2 disagreed with this as she feels that if someone is going to set up a business they will do so regardless of industry sector. TI1 on the other hand agreed that while it may be true she thinks that it is changing as women gain the confidence and support to enter these areas. Both women in the high technology sectors agreed that fewer women do indeed start up high technology businesses. HT1 believed that again it's due to domestic responsibilities being left to the women and that having a young family and starting a business is "practically and physically impossible" (HT1). HT2, however, stated that the "representation of women in these areas is relatively low and that you need some industry knowledge to start a high technology" and she feels that women are just not gaining the necessary knowledge and experience.

4.2.8 Barriers to Women entering High Technology

As all the respondents agreed that women face barriers when they set up a high technology business, the next questions addressed what the respondents believed these barriers to be. TI1 felt that women face the task of trying to break preconceived notions that women can't run a high technology business and that this acts as a barrier. She experienced something similar herself as her own parents thought she was crazy to set up a business at all. She also believed that family and children particularly make it difficult for women. TI2 had a similar response as she again believed that if a woman has not started her family it is going to mean taking time off and that the business will suffer because of this. HT1 on the other hand cites self confidence and self belief as a barrier. While HT2 believes that there is a networking issue as there is no network of women to tap into in the high technology area. Additionally she believes that relationships and

lifestyle act as barriers as women have to choose between their business and their relationship/lifestyle.

The final area to be examined in the interview was finance. Finance is cited as one of the most problematic areas for women (Schwartz, 1976; Hisrich and Brush, 1984; Loscocco and Robinson, 1991 and Fielden et al, 2000) and according to some researchers this problem is notably worse for those in the male orientated industries (Fielden et al, 2000). When asked was it harder to obtain finance because of the type of business started all of the respondents answered no. However, when probed further it was discovered that T11's bank manager was her client and T11 herself stressed that her bank manager was female as she stated:

“The only reason I got finance is because my bank manger is a client of mine.....*she* totally believed in me” (T11)

HT1 also revealed that she did get rejected by one bank and she believed that this was because she was starting a high technology business. T12 did not encounter any problems as she was able to use her house as collateral against the loan and she also received a 50% capital grant from an enterprise board. Similarly, HT2 had no problems and in fact found it easier to get finance because of the sector she is in. This she explained is because the current government structures are actually giving more finance to businesses in high technology sectors. However the ability to raise capital did not have any influence on any of the women's decision to start up in their particular industry sector, except perhaps to encourage HT2.

The interview concluded by asking the respondents whether they felt that it was easier for men to raise finance than women. T12 stated that she was unsure, while T11, HT1 and HT2 all agreed that it was harder for women. Some of the opinions expressed were:

“Women don’t have the confidence that men do as women worry about the consequences if they can’t pay it back” (TI1)

“Women need to become more focused with regard to finance and stop getting emotional about it” (HT1)

4.3 Conclusion

This chapter has provided the reader with an insight into the findings from this study’s primary research. The antecedent influences pertaining to a woman’s decision to enter a certain industry have been explored in detail and the motivations and attitudes of the women entrepreneurs in this study have also been examined.

A number of significant findings have been uncovered in this study. The high technology female entrepreneur is older than that of her traditional counterpart. This may be due to the fact that the high technology entrepreneur has attained a higher level of formal education that was specific to her chosen discipline. In conjunction with this the high technology entrepreneurs interviewed in the current study also possessed a more extensive and relevant work history than the traditional entrepreneurs.

The primary research also found that family can have an important influence on the female entrepreneur. It would appear that the higher the level of education that an entrepreneur’s parents achieve has an impact on the entrepreneur’s choice of industry sector. It is also interesting to note that the two high technology entrepreneurs do not have children suggesting that for women in high technology sectors rearing a family may not be compatible with their work schedule.

The next chapter will discuss the findings from this study in more detail. These findings will also be examined in relation to the literature reviewed in chapter two.

Chapter Five:

Discussion

Chapter 5: Discussion

5.1 Introduction

This chapter will revolve around a discussion of the research findings that were presented in chapter four. The research has identified that while there are many similarities between female entrepreneurs from traditional and high technology sectors, notably there are also significant differences. The discussion of these findings will be presented under a number of headings which reflect the key themes that emerged from this research.

The first area to be discussed will highlight a number of differences between the personal factors of the female entrepreneurs from the different industry sectors. These findings provide basic demographic information relating primarily to the age and marital status of the female co-researchers. Following on from this will be a discussion which focuses on the educational background of the entrepreneurs. This discussion is centred on the differences that exist with regards to the level of education that high technology and traditional entrepreneurs achieved, the type of subjects that each set of females had taken and the importance of the education system in a woman's choice of traditional or non-traditional career.

The third point for discussion is the importance of family influences for the female entrepreneur. This will involve examining the educational level of the females' parents and noting the effect that this has on the entrepreneurs' choice of industry sector. It will also examine the impact of entrepreneurial family members. Finally the last issue that will be discussed in this chapter will relate the female entrepreneurs' perceptions of and attitudes towards the view that the high technology industry sector is male dominated. The characteristic with which the females described themselves will also be discussed to determine if they associated themselves, or not, with masculine traits.

5.2 Personal Factors

A number of researchers have attempted to develop a typology or profile of the “typical” female entrepreneur (Hisrich and Brush, 1984; Brush and Hisrich, 1991; Buttner, 1993; GEM, 2004). These profiles have tended to describe the female entrepreneur’s background, education and previous work experience. According to Hisrich and Brush (1984) women did not start a business until the age of forty or later, however, the current research has found that women, regardless of industry sector, are starting their businesses in their late twenties to mid thirties. This is consistent with more recent research by McClelland, Swail, Bell and Ibbotson (2005) and Sarri and Trihopoulou (2005) who have indicated that women are now starting businesses at a younger age, from their early thirties upwards.

With regard to the differences in personal characteristics between the entrepreneurs, the present findings showed that there is a difference, both in the age and marital status of the women from high technology and those in the more traditional sectors. These findings support previous research which found that high technology entrepreneurs are older than their colleagues from traditional sectors (Roberts, 1991; Colombo and Delmastro, 2001; Madsen, Neergaard and Ulhøi, 2003). The current research established that HT1 and HT2 were thirty three and thirty five respectively at time of start-up. This is consistent with findings by Roberts (1991) who noted that technical entrepreneurs are on average in their mid-thirties when they start their first venture. Interestingly, Madsen et al (2003) found that female entrepreneurs operating in knowledge-intensive sectors are also even older than males operating in the same sector and they believe that this is due to family obligations. Roberts (1991) concluded that this older age of technical entrepreneurs is attributable to the education and prior work experience which is necessary for technological entrepreneurship. The author of this current study concurs with this as she found that the females from the high technology sectors had achieved a higher level of education and also had a longer, more relevant work history.

Similarly, there were differences between the marital statuses of the women in traditional and high technology businesses. Both of the women who started a high technology

business were single with no children at time at start up. In contrast, one of the women from the traditional sector was married, with children, at the time of start up and the other has since married and had a child. However, the literature review documented the fact that women often start a business to accommodate work with family commitments (Bloom, 1986; Buttner, 1993; Orhan and Scott, 2001 and McClelland et al, 2005). It is interesting to note that this was only a factor for one of the women in the traditional sector and was not applicable to either of the respondents from the high technology sectors. This finding may signify that for those women in high technology family life is not a priority or that the demands of a high technology business are not conducive with rearing a family and, thus, they may first raise their family before starting a business or they may establish their business first and then start a family. This suggestion corresponds with a comment made by HT1:

“By the time women in the high technology sectors gain the experience and confidence to start a business they are already married with children and can’t accommodate both” (HT1)

Madsen et al (2003) also believed that there is a link between the older age of technology female entrepreneurs and the presence of children. They stated that female founders, from their sample, tended to wait until their children were in their teens before they embarked on their entrepreneurial career.

On the whole, these findings have confirmed recent research which has established that female entrepreneurs are, generally, starting businesses at a younger age than in the past. This present study has also highlighted differences in the ages and marital statuses of women in traditional and high technology industry sectors. The high technology entrepreneurs in this current study were older and were more likely to have been single at the time of start-up than their traditional counterparts. One could conclude from these findings that for high technology entrepreneurs raising children may not be compatible with the level of commitment that is needed to run a high-tech business.

5.3 Educational Influences

The current study has also indicated that the educational background of the entrepreneurs differed, both in relation to the type and duration of education attained. It was found that the females from the high technology sectors had achieved a higher level of formal education than their traditional counterparts. This is not surprising as it has been acknowledged by numerous researchers that the founders of high technology enterprises tend to be more highly educated, usually in science related disciplines (Roberts, 1991; Storey and Tether, 1998; Colombo and Delmastro, 2001; Madsen et al, 2003; Harpaz and Meshoulam, 2004). This current research established that in fact both HT1 and HT2 had achieved a Masters of Science qualification after their undergraduate degree. This corresponds with Roberts (1991) who found that “almost a minimum is the completion of a four year technical undergraduate degree, with the representative entrepreneur adding a master’s degree” (p.340). This is important for the current study as it indicates that a science background may be a necessary factor if more women are to start high technology businesses. Thus, science and technology related subjects need to be made more attractive to females because as Richardson and Hynes (2006) concluded that a lack of women studying technical a lack of women studying technical disciplines has a direct impact on the low number of technology-based female entrepreneurs.

As already discussed a science background appears to be an important influence if a woman is to start a high technology business. It was interesting to note then that the high technology females had also taken more science based subjects at post primary level than their traditional counterparts. It is the opinion of this researcher that this is a noteworthy finding as it shows that there is a need to encourage girls, at post primary school level, towards technical non-traditional female subjects. This is consistent with research by Richardson and Hynes (2006) who found that the lack of technology-based females can be traced back to the post primary education system. Similarly results from the USA have highlighted the fact that if girls are not encouraged towards technical subjects at a younger age, then by post primary level they will have already decided not to take math, science and other technology based subjects (American Association of University

Women, cited in Adya and Kaiser, 2005). Adya and Kaiser (2005) themselves stressed that this can then deny women of the opportunity of a career in a high technology industry.

Following on from this, one could conclude that post primary level appears to be an area where girls should receive greater encouragement to consider high technology as a career. Smith (2000) has identified that teachers in particular can have a strong influence on a girl's choice of career. More recent research has also found that teachers and counsellors tend to encourage girls towards more traditional careers and boys towards more male orientated careers (Gates, 2002 as cited in Adya and Kaiser, 2005). Such attitudes need to be changed so as to ensure that gender stereotyping does not continue to negatively affect girls' perceptions of a high technology career. It is interesting to note then that HT1 made the comment that her guidance teacher encouraged her to consider teaching or nursing rather than her chosen career in chemistry. Smith (2000) has recommended that schools need to become more proactive in their encouragement of non-traditional careers for girls. It is the opinion of the current researcher that the educational system does indeed need to recognise the role that it plays in women's career choice and that it should, as GEM (2004) have suggested, provide practical information and experience relating to entrepreneurship. This opinion is echoed by Goodbody (2002) who have recognized that "the educational system has a role to play in changing attitudes and in encouraging greater entrepreneurship in Ireland" (p. 34).

One similarity that arose between the entrepreneurs in the traditional and high technology sectors was that none of the females from the current study had received any enterprise education during the course of their higher level studies. As a result of this, all of the women received their enterprise training and support from their local enterprise agencies. Because all four co-researchers found it necessary to receive some enterprise training, prior to, during or after start-up, this may suggest that there may be a need to provide female entrepreneurs with practical information of enterprise subjects at post primary or higher education level. Because education can, as suggested by Chell and Allman (2003), enhance the entrepreneurial experience.

5.4 Family Influences

Previous research has suggested that while the impact of parental influences is felt unequivocally in choice of traditional and non-traditional careers, it is most strongly observed in the choice of non-traditional careers (Adya and Kaiser, 2005, p. 234). This is a very interesting observation as the current research found that the parents of the high technology entrepreneurs were far more encouraging of their daughters' choices of career than the parents of those in traditional sectors. In fact TI1 commented that her parents:

“.....thought she was crazy to leave permanent pensionable employment to start a business”

Previous research has also suggested that women who choose a more male orientated career are more likely to come from families where parents are highly educated (Jackson, Gardner and Sullivan, 1993). The primary research from the current study confirms this as both high technology females had parents who were more educated than the parents of those in the traditional sectors (see Table 4.5). Both HT1 and HT2 commented that their parents encouraged them in their chosen careers and in fact would have encouraged them to do anything that they wanted. However, only the parents of HT2 were actually highly educated with her father having achieved a post graduate qualification and her mother a primary degree. HT1's parents, on the other hand, had both attained a secondary level education, which is in fact a higher level of education than the parents of the traditional entrepreneurs had attained. An interesting finding, however, from this current research is that the parents of the TI1 and TI2 both attained the same levels of education and also had very similar career paths. Therefore, this may suggest that for individuals of a certain educational and career level they may not be as supportive of a non-traditional technical career for their children.

It is also interesting to note that, contrary to previous research which cites entrepreneurial parents as the most important influence for female entrepreneurs (Watkins and Watkins, 1984; Hisrich, 1990; Mattis, 2004), only one of the four respondents from this study had

parents who were self employed. However, while only HT1 had entrepreneurial parents, the other respondents also reported that they had a history of self-employment through other family members. Thus, it appears that family influences are a key consideration in an entrepreneur's background and that in fact a tradition of self-employment in a family can act as an indicator of future potential entrepreneurial activity (Goodbody, 2002). Numerous researchers, including Goffee and Scase (1983); Orhan and Scott (2001) and Mattis (2004) have also stressed that a tradition of self employment in an entrepreneur's background is an important influence on an entrepreneur.

This study's primary research also found that women from the traditional sectors believed that having entrepreneurial members in their family did not influence their choice of career or their choice of industry sector. This is in contrast to their counterparts in high technology who believed that the presence of entrepreneurial family members did have an influence on their decision to become self employed and their choice of industry sector. One could conclude, therefore, that female entrepreneurs from non-traditional sectors have a greater awareness of the importance of entrepreneurial family members and are more willing to acknowledge the influence that this has on their career choices than their traditional counterparts.

5.5 Associations with Masculinity

One of the objectives of the current study was to ascertain if women viewed the high technology sector as being male dominated. This is an important issue for the current research as, firstly, entrepreneurship in general has been labelled as a *male domain* (Boden and Nucci, 2000) and this has led to a perception that the characteristics of an entrepreneur, male or female, are more masculine than feminine (Gupta, Turban, Wasti and Sikdar, 2005). Similarly, there is also the perception that the high technology industry is also male dominated. This current research sought, therefore, to determine what type of characteristics the female entrepreneurs chose to describe themselves and secondly if they believed that high technology is in fact male dominated.

It has been stressed that characteristics, such as risk-taking and innovativeness, that are traditionally associated with successful entrepreneurs are not actually lacking from the female population (Watkins, 1982). However, according to Coleman (2002), it has been found that when women display such characteristics as aggressiveness, persistence and determination, needed to make a successful business, they become unattractive or it may compromise their femininity. An interesting finding, however, from a recent study confirmed that individuals who associate themselves with masculine traits have a higher intention to start a business than those who associate themselves with feminine traits (Gupta et al, 2005).

The current study identified that both traditional entrepreneurs selected “customer focused” as personality traits. This corresponds with previous research which has found that women tend to take a more customer focused approach to business (Brush, 1992 and Carter, Williams and Reynolds, 1997). Other characteristics chosen by the traditional women included flexible, quality orientated and sympathetic which corresponds with literature which has indicated that women are often associated with characteristics such as expressiveness, connectedness, relatedness, kindness, supportiveness and timidness (Gupta et al, 2005). However, it was interesting to note that the high technology females choose traits such as innovative, technical, confident and desire a challenge to describe themselves. These traits correspond more to masculine traits of independence, aggressiveness and autonomy rather than to feminine traits.

However, it should also be noted that the traditional entrepreneurs did not choose all feminine traits and the high technology entrepreneurs did not select characteristics which were all masculine. These are important findings for the current study because, as stated earlier, it is important to display some elements of masculinity as seeing oneself as similar to males is related to higher entrepreneurial intentions (Gupta et al, 2005).

According to Turk and Shelton (2004) women entrepreneurs only account for 20% of industries that are traditionally male orientated. The current research, thus, explored the female entrepreneurs’ attitudes towards high technology industry sectors to discover if

there may be a connection with their perception and their desire to start a high-tech business. All the respondents agreed that they believed high technology industry to be male dominated. However, there were varying views as to whether the fact that such sectors are male dominated has an affect on the lower number of women starting high technology businesses. The majority of the respondents cited other reasons, than high technology sectors being male dominated, as to why fewer women choose to start a high-tech business.

As highlighted earlier, if female entrepreneurs do not associate themselves with masculine stereotyping they may self-select themselves out of entrepreneurship. Gupta et al (2005) have stated that this 'think entrepreneur-think male' is a wide spread phenomenon and that "there is a need for policy makers and educators to seek and develop new ways to reduce such stereotypes" (p. 6).

5.6 Conclusion

The main finding from this discussion is that there are noteworthy differences between female entrepreneurs from high technology and traditional industry sectors. These differences relate to a number of influences which the entrepreneurs experienced in their backgrounds. The high technology entrepreneurs from this study were more likely to be older and single when they started their businesses than their traditional counterparts. It was concluded that this age variation between the two groups of women may arise from the high technology entrepreneurs having both a higher level of education and a more extensive work history.

Furthermore, this research established that family and educational considerations are key issues in understanding why women choose to start a business in a particular industry sector. It was noted that, the high technology entrepreneurs compared to the traditional entrepreneurs had, as stated earlier, achieved a higher level of education in a science related discipline and had taken more science and technical related subjects at post

primary level. The researcher of this current study believes that this finding is significant and that educators and policy makers need to make science and technical related subjects more accessible and attractive to young women.

The presence of more highly educated parents and entrepreneurial family members also appears to have a greater influence on the high technology entrepreneurs than their traditional counterparts.

Finally, this chapter examined the female entrepreneur's perception that entrepreneurship and high technology industry sectors are male dominated. It also examined the impact that this perception had on female entrepreneurs in this study. The findings from the current research confirm that high technology industry sectors are perceived to be male dominated, although the effect of this on a female's decision to enter these sectors cannot be fully verified. Attention was also drawn to the fact that the females from the high technology industry sector tended to associate themselves with masculine characteristics to a greater degree than their traditional counterparts.

The next and final chapter of this thesis presents the overall conclusions from this current research. It will also draw attention to a number of limitations associated with the study and make recommendations for future research in this field of study.

Chapter Six:

*Conclusions,
Limitations &
Recommendations*

Chapter 6: Conclusions, Limitations & Recommendations

6.1 Introduction

Essentially, this study sought to understand why a female entrepreneur chooses to start her business in her chosen industry sector. This research, therefore, examined the factors, such as antecedents, motivations and attitudes, which may have influenced the female entrepreneur in her decision to start a traditional service type business or a non-traditional, high technology business.

A review of the relevant literature pertaining to the research topic was undertaken. This review provided a preliminary answer to the current study's primary research question which sought to understand:

What are the factors that influence female entrepreneurs to enter traditional or non-traditional industry sectors?

Following on from this literature review, primary data was gathered through the use of semi-structured interviews. The findings from this research were then presented and discussed in Chapters Four and Five.

The purpose of this chapter is to draw conclusions from the findings presented in Chapters Four and Five and from the research as a whole. This section will also address the limitations that were associated with this current research and finally recommendations will be made for future research into this field of study.

6.2 Conclusions

The research findings have indicated that there are differences between female entrepreneurs in high technology sectors and those in the traditional sectors. Firstly, it

was found that there was a difference in both the age and marital status of these two groups of women. It was established that the high technology entrepreneurs tend to be older and are more likely to be single at the time of start-up. The older age of high technology entrepreneurs may be due to family responsibilities as suggested by Madsen, Neergaard and Ulhoi (2003). However, Roberts (1991) found that this age difference is due to the higher level of education and the more extensive work history that high technology entrepreneurs have obtained. In the case of the current research the latter applies, as neither of the two high technology entrepreneurs were married or had children at the time they started their businesses.

The findings from the current research also found that females from the high technology sectors had studied more science based subjects at post primary level than their traditional industry counterparts. It was also noted that the high technology entrepreneurs had a higher level of formal education than the traditional entrepreneurs. Both high-tech entrepreneurs attained a postgraduate degree in a science related discipline. This is consistent with Robert's (1991) findings which established that a high-tech entrepreneur has attained at least a four year technical degree. It has also been stressed that a science based background is a necessary factor for a career in high technology (Roberts, 1991 and Madsen et al, 2003).

It was equally interesting to note that none of the female entrepreneurs in the current study had received enterprise education during the course of their third level studies, yet all four entrepreneurs availed of enterprise training prior to, during or after start-up of their businesses. This may indicate that it is important to provide females with some form of enterprise education, at post primary or higher level education, to provide them with practical knowledge of enterprise related subjects prior to starting a business.

It also emerged that a history of entrepreneurial activity in a family continues to have a strong influence on female entrepreneurs as all respondents involved cited immediate family members as being self-employed. It was also interesting to note that the parents of the high technology entrepreneurs were both more educated and more encouraging of

their daughters' choices of career and industry sector than the parents of the traditional entrepreneurs. This is in accordance with previous research which stated that individuals who choose a more male orientated career are more likely to come from families where parents are highly educated (Jackson, Gardner and Sullivan, 1993).

The final area of discussion in the previous chapter centred on the notion that characteristics of entrepreneurship are more masculine than feminine and that high technology is perceived to be male dominated. It was found that the high technology entrepreneurs associated themselves more with masculine traits, while the traditional entrepreneurs choose more feminine traits, suggesting that perhaps those who operate in various industry sectors view their personalities as being different. Finally all the female entrepreneurs concurred that high technology sectors are more male dominated, but that this is not a main factor hindering females entering these industry sectors.

6.3 Limitations

One of the limitations associated with the current study was that there were only four female entrepreneurs, two from high technology industry sectors and two from traditional female-type industry sectors, interviewed to obtain the primary data. This has, therefore, constrained this researcher from generalising the findings to a greater degree.

Secondly, the research sample was confined to one regional area, the South East of Ireland. If the research had been conducted on a national basis the resulting findings may not have been the same as the findings presented in this study. A more extensive study could have been conducted had the study been administered throughout Ireland.

Finally, there is no officially recognised national or regional database which separates business owners by gender. This may be viewed as a limitation to the current research as this study had to rely on other sources to obtain the research sample. The traditional sample was obtained from the 'The South East Business Demographics Profile Database'

while the high technology sample had to be sourced through personal contacts, this in itself is a reflection of the low number of female entrepreneurs in general in the South East and especially how few female entrepreneurs operate in high technology industry sectors.

6.4 Recommendations for Future Research:

Primarily, it is proposed that a similar research study be undertaken on a national basis. This study could be conducted on a region by region basis to determine if there are underlying factors that may be preventing females from entering high technology sectors. This research would be beneficial in helping identify factors which are favourable to the development of women owned high-tech enterprises and, thus, help to increase the number of such enterprises.

Another opportunity exists to conduct a quantitative study throughout Ireland. This study could examine a wider variety of industry sectors categorised under high technology and traditional industry sectors. This study would, firstly, provide an up to date profile of the number of female entrepreneurs in Ireland. Secondly, it would also allow for a comparison of the number of women owned enterprises who operate in the high technology and traditional industry sectors. And thirdly a quantitative study is more statistically sound and therefore would allow the findings to be generalised to a greater degree.

Finally, it is proposed that a comparative study be undertaken between female entrepreneurs in Ireland and those in other countries. This type of study would allow for insights into the influences that encourage a woman to start a high technology business compared to a traditional business using cross national data rather than just data from a single country as in the current study.

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Appendices

Appendix A: Interview Schedule

Demographics:

- What industry sector does your business operate in?
- What year was your business established?
- How old were you when you established the business?
- What was your marital status when you established the business?
- When you started your business did you have children, if yes what ages were your children at start-up?

Education:

- What is your highest formal level of education?
- At post primary level did you attend a same sex or mixed school?
- Which subjects did you take at post primary school? (*See Appendix B*)
- What was your of specialist area (qualification) at higher level?
- Did you take any business or enterprise subjects during the course of your post primary or higher level studies?
- Is your specialist area (qualification) related to the business you have started?

- Did your specialist area (qualification) influence the type of business you started?
- Do you feel that your education prepared you for your career in high tech/traditional industry?

Family Background:

- What was the highest level of education that your parents achieved?
- What was your parents' occupation?
- Did your parents encourage you to start your business?
- Were any of your family self employed prior to you starting your business, if yes in what industry sectors did they operate?
- Was your spouse self-employed prior to you starting your business?
- Did the presence of entrepreneurial family members influence your career or industry sector?

Socialisation:

- When you were growing up were you considered to be a tomboy or were you more of a lady?
- What were your favourite subjects in school?

- What activities/games did you pursue as a child?
- What did you perceive women's role in society to be when younger?

Previous Experience:

- Did you undertake any summer work or graduate placements which influenced the type of business you started?
- Did you have a full time job prior to starting your business, if yes what was the nature of this work?
- Did this experience influence you to start your business in your industry sector?
- What skills did this experience provide you with? (*See Appendix C*)
- Were these skills a factor in you starting your business in your industry sector?

Motivations for Starting the Business:

- What five factors were most important to you when starting your business? (*See Appendix D*)
- Which three factors were most important to you when starting your business in your chosen industry? (*See Appendix E*)
- Are there any other reasons why you chose to start a high-tech/traditional business?

- Why did you choose not to start a high technology business? (*Addressed towards traditional entrepreneurs*)

Attitudes:

- Women have traditionally started businesses in female type industry sectors (i.e. service/low-tech industry sectors), was that a factor in your decision to start your business in your particular industry?
- Why do you think more women start up traditional/low-tech type businesses?
- Research has suggested that the high technology industry is male dominated, do you agree with this statement? Did this influence your decision to start in your current sector?
- Do you agree that there are a less women starting up high-technology businesses, if yes why do believe this is so?
- Do you believe that women face barriers when starting a high-technology business, if yes what do you believe are the barriers?
- Do you believe it was easier/harder to get finance because of the type of business you set up? Did this influence your decision to set up in that industry?
- Do you think that it is easier for men to raise finance than women?
- Which three traits best describe you? (*See Appendix F*)

Appendix B:

Did you have the *option* to take any of the *following subjects* at this school and if so please indicate which *subjects were taken*?

Subject	OPTION TO TAKE SUBJECT		SUBJECT TAKEN
	Yes	No	
Mathematics			
Information Technology			
Science			
Biology			
Chemistry			
Physics			
Technical Graphics			
Construction Studies/Woodwork			
Metalwork/Engineering			

Appendix C:

My previous experience provided me with.....

Technical skills

Marketing skills

Financial skills

Connections/networks

Managerial skills

Other

(Please specify)_____

Appendix D:

Which of the following *five factors* were most important to you when starting your own business? (*Please rank from 1-5 in order of importance*)

- | | |
|---|--------------------------|
| To advance myself | <input type="checkbox"/> |
| To grow a business | <input type="checkbox"/> |
| To make money | <input type="checkbox"/> |
| To earn a good living from the business | <input type="checkbox"/> |
| To expand my professional network | <input type="checkbox"/> |
| To achieve a balance between work and family | <input type="checkbox"/> |
| To have a better lifestyle | <input type="checkbox"/> |
| To have more time for leisure activities | <input type="checkbox"/> |
| To give something back to the community | <input type="checkbox"/> |
| To be my own boss | <input type="checkbox"/> |
| To have greater independence | <input type="checkbox"/> |
| For self achievement | <input type="checkbox"/> |
| Because of economic necessity | <input type="checkbox"/> |
| Because of redundancy | <input type="checkbox"/> |
| Because of lack of opportunities in previous career | <input type="checkbox"/> |
| Because of dissatisfaction with previous career | <input type="checkbox"/> |
| Saw an opportunity | <input type="checkbox"/> |
| Something I always wanted to do | <input type="checkbox"/> |
| Other | <input type="checkbox"/> |
| (Please specify) | |
-

Appendix E:

Which of the following *three factors* were most important to you when starting your business in your chosen industry?

- | | |
|---|--------------------------|
| Ease of entry | <input type="checkbox"/> |
| Low capital requirements | <input type="checkbox"/> |
| Had previous knowledge or experience in this area | <input type="checkbox"/> |
| Was already working in industry | <input type="checkbox"/> |
| Had contacts in this industry | <input type="checkbox"/> |
| Growth potential of industry | <input type="checkbox"/> |
| Possessed business skills relevant to area | <input type="checkbox"/> |
| Possessed technical skills relevant to area | <input type="checkbox"/> |
| Other (please specify) | <input type="checkbox"/> |
-

Appendix F:

Which of the following *three traits* best describe you?

- | | |
|-----------------------------|--------------------------|
| Risk taker | <input type="checkbox"/> |
| Innovative | <input type="checkbox"/> |
| Independent | <input type="checkbox"/> |
| Achiever | <input type="checkbox"/> |
| Successful | <input type="checkbox"/> |
| Risk averse | <input type="checkbox"/> |
| Creative | <input type="checkbox"/> |
| Self fulfilled | <input type="checkbox"/> |
| Customer focused | <input type="checkbox"/> |
| Quality orientated | <input type="checkbox"/> |
| Sympathetic | <input type="checkbox"/> |
| Confident | <input type="checkbox"/> |
| Control | <input type="checkbox"/> |
| Desire to be one's own boss | <input type="checkbox"/> |
| Growth orientated | <input type="checkbox"/> |
| Profit orientated | <input type="checkbox"/> |
| Technical | <input type="checkbox"/> |
| Flexible | <input type="checkbox"/> |
| Satisfied with job | <input type="checkbox"/> |
| Desire a challenge | <input type="checkbox"/> |
| Frustrated | <input type="checkbox"/> |
| Motivated | <input type="checkbox"/> |
| Other (please specify) | <input type="checkbox"/> |
-