

*The Impact of Entrepreneurship Education
– An Exploratory Study of MBA Graduates
in Ireland*

By

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Abstract

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This study is an investigation into the impact of entrepreneurship education in Ireland. It focuses on graduate entrepreneurship education (MBA) and endeavours to assess its impact on graduates' entrepreneurial behaviour over the long-term. The work has evolved from significant research gaps and vulnerabilities identified within the literature and revolved around the following research question: '*What influence does entrepreneurship education have on MBA graduates propensity to venture*'. In addressing this question, a comprehensive literature review was undertaken. Firstly, various ways of studying and understanding the individual entrepreneur and the term entrepreneurship are explored. Next, a robust review of the entrepreneurship education literature was conducted. This reveals that despite the exponential international growth of the discipline over the last four decades, remarkably little empirical work has been conducted into the impact of courses and on the propensity of graduates to venture. Much of the research that has been conducted to date focuses on a single course or programme and its immediate impact. Furthermore, very few studies use 'control groups' which facilitate a comparison of those who have and have not taken entrepreneurship. Analysis of the literature pertaining to the impact of entrepreneurship education has resulted in the development of a conceptual model for the study. This encompasses a national study of MBA graduates in Ireland over the long-term and includes those who have taken entrepreneurship as part of their MBA programme and those who have not.

The purpose of this thesis is exploratory in nature as it seeks to indicate and identify meaning within a little-understood situation (entrepreneurship education and graduate entrepreneurial behaviour). The theoretical background to the work resulted in the development of a number of hypotheses and sub-hypotheses. These were tested through a research design that accommodated a combination of both quantitative and qualitative measures (methodological triangulation). The unit of analysis is MBA graduates in Ireland. A mail survey was conducted and the quantitative data from this was supported by face-to-face interviews. The mail survey was distributed to a sample of 550 MBA graduates in Ireland and a valid response rate of 37.8% was achieved. The qualitative study comprises of six face-to-face interviews.

The findings from this study indicate that there was no link established between exposure to entrepreneurship education and the consequential entrepreneurial behaviour of participating MBA graduates. This result conforms with other studies which have yielded similar findings. However, with few exceptions, the widespread popularity that entrepreneurship education now enjoys has not been matched with robust research deliberation into its outcomes and the differing research designs used make meaningful comparisons very difficult. This study underlines the need for more research to be conducted into the impact of entrepreneurship education. Such work must be completed using methodologies, survey instruments and statistical analysis that facilitate both collaboration and comparison. The thesis is not an end in itself but rather represents a platform or conduit on which future research can be built.

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Declaration

No portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

I declare that the thesis embodies the results of my own work. Following normal academic conventions, I have made due acknowledgement of the work of others. The work has been completed within the specified word limit with 57,949 words excluding references and appendices.

Signed: _____

Date: _____

Chapter One

Introduction

1.1 Introduction

The dramatic evolution and growth of the field of entrepreneurship education has been amply articulated by many theorists. Indeed, it has been widely documented as one of the fastest growing academic trends in higher education (ASHE 2009). From highly modest beginnings at Kobe University, Japan, in 1938 and at the Harvard Business School in 1947 (Hannon 2005), evidence suggests a proliferation of new courses and programmes throughout the intervening time period and particularly over the last two decades (Lobler 2006; Klandt and Volkmann 2006; Kirby and Hollywood 2007; Khan and Almoharby 2007; Pittaway and Cope 2007; Gwynne 2008; Katz 2008; Shinnar *et al.* 2009; Lam 2010).

Edelman *et al.* (2008) advise that within the United States of America (USA), approximately 2,200 entrepreneurship courses are now offered at 1600 colleges and universities nationwide. More than 200 of these institutions have majors and concentrations in entrepreneurship and at least 20 business schools require that all their students take at least one entrepreneurship class. This growth is also reflected internationally (Béchar and Grégoire 2005). For example, Lourenco and Jones (2006) stress that entrepreneurship education at higher education institutions in the United Kingdom has grown significantly since 1999 and includes 132,000 students or 7% of the total student population. Furthermore, Klandt and Volkmann (2006) boldly refer to the “meteoric rise” of entrepreneurship in Europe while the European Commission (2008a) observe that almost half of Europe’s students at higher education (approximately 10 million students) now have access to entrepreneurship education. Likewise, Khan and Almoharby (2007) highlight the rapid development of

entrepreneurship education within the Arabian Gulf countries, Thailand, Malaysia and the Philippines while Jones and English (2004) explain a similar phenomenon in Australia. Within the Irish context, Birdthistle (2006) notes that many of Ireland's universities and Institutes of Technology now have designated faculties and courses in entrepreneurship and entrepreneurship education is increasingly being offered across faculties.

A number of scholars suggest this impressive growth may be due to a predominant belief that the knowledge and skills required for successful venturing can be taught through entrepreneurship education and learning (Gorman and Hanlon 1997; McMullan and Vesper 2000; Menzies 2004; Safranski 2004; Kuratko 2005; Raichaudhuri 2005; Klandt and Volkmann 2006; Aouni and Surlemont 2007; Edwards and Muir 2007; Jones 2007; Kirby 2007; Bygrave and Zacharakis 2008; Boocock *et al.* 2009; Coleman *et al.* 2010). Growth within the discipline however, if it is to be nurtured and sustained, must be underlined by rigorous attempts to assess the appropriateness of what is being offered and the relative impact entrepreneurship education has on those exposed to it (Plaschka and Welsch 1990; Vesper and Gartner 1997; Kirby 2002; Menzies and Paradi 2003, Blenker *et al.* 2004; Klant and Volkmann 2006; Pittaway and Cope 2007; Edelman *et al.* 2008; Gibb 2008).

This thesis aims to examine the effectiveness of entrepreneurship education in Ireland. It focuses on graduate entrepreneurship education and seeks to assess its impact on graduate's entrepreneurial behaviour over the long-term. The study additionally contributes to the debate on whether entrepreneurship can be taught. It seeks to

explore the effectiveness of entrepreneurship courses offered to graduates at MBA level. Its aim is to explore the relative long-term impact of these courses through exploring the objectives of graduates on taking a course/s in Entrepreneurship, establishing the business start-up rates of graduates, the performance levels of these ventures and how they compare to those of graduate entrepreneurs who had no exposure to entrepreneurship courses on their MBA programme. This research also seeks to examine the impact of entrepreneurship education on the careers of MBA graduates and the level of career satisfaction experienced in their careers to date.

1.2 Background to the Study

Until relatively recent times, it was assumed entrepreneurs were somewhat different from the general population (Gasse 1982; Gartner 1989; Bull and Willard 1993; Hill 2002; Neck *et al.* 2007). The perspective that entrepreneurs were born and not made prevailed widely. Entrepreneurs were seen as a breed apart from the general population and individuals who held unique innate qualities, attributes and traits that explained their entrepreneurial behaviours and endeavours. However, McMullan *et al.* (1986) observe that the myth of the naturally knowledgeable entrepreneur has given way to widespread appreciation that entrepreneurs can be taught. They observed that entrepreneurs learn from a variety of means including mistakes, mentors and formal education and training designed for their purposes. This perspective is further developed in the work of a number of contemporary theorists who explain that effective entrepreneurial learning is achieved through experience and action, observing and copying, mistake making, repetition and experimentation (Cooper *et al.* 2004; Hannon *et al.* 2005; Edelman *et al.* 2008; Gibb 2008; Holcomb *et al.* 2009; Levesque *et al.* 2009).

Unquestionably, there seems to be a general convergence of views among scholars that entrepreneurship education results in positive outcomes and increased conviction that it is possible to teach entrepreneurship (Clarke *et al.*, 1984; Bygrave 1994; Fleming 1999; Erkkilä 2000; Owusu-Ansah and Fleming 2001; Menzies and Paradi 2003; Bygrave and Zacharakis 2008; Chen and Lai 2010). McMullan and Vesper (2000) articulate the fact that there is growing evidence to support the perspective that when people complete entrepreneurship education programmes, they tend to be more inclined towards entrepreneurial actions, and sometimes even become more effective as entrepreneurs. They cite research contributions by, among others, Benus (1994), Gartner and Vesper (1994) and McMullan and Gillan (1998) who confirm this important observation. Gorman *et al.* (1997) cite work by Bandura (1986) who outlines that education can serve as a preparatory function in relation to the development of entrepreneurship. This, they contend, is achieved through the acquisition of knowledge and skills, which increase the effectiveness of the entrepreneur.

Furthermore, Menzies and Paradi (2003) highlight that the incredible growth in entrepreneurship courses and programmes may be due to the belief that the skills and knowledge required for successful venturing can be taught, or at the very least enhanced by entrepreneurial education and learning. This view is shared by notable scholars including Gorman *et al.* (1997), McMullan and Vesper (2000) and Jones *et al.* (2008). Certainly, there are many studies highlighting the incidence, growth levels and scope of entrepreneurship education at university and college level. Contributions, including those by, Sexton *et al.* (1997), Vesper and Gartner (1999), Charney and Libecap (2003), Solomon and Fernald (2003), Hytti and O’Gorman

(2004), Aouni and Surlemont, (2007), Green and Rice (2007), Bygrave and Zacharakis (2008) and Hyclak and Barakat (2010) all suggest enormous growth both in quantity and breadth of entrepreneurship education now offered on a global basis. This growth has a number of tangible manifestations and is not solely restricted to the number of courses and programmes available. It includes an increase in the number of teaching positions, endowed chairs, academic journals and entrepreneurship centres (Katz 2003; Béchard and Grégoire 2005), the inauguration of numerous intercollegiate business plan competitions (Charney and Libecap 2003) and the increasing prevalence of Entrepreneurship into non-business fields of study such as engineering, the arts and sciences (Luczkiw 2007; NCGE 2007; European Commission 2008a; Handscombe *et al.* 2008; ASHE 2009; Shinnar *et al.* 2009).

Jack and Anderson (2001) argue that reasons for the exponential growth in entrepreneurship education are government, student and business led. Firstly, governmental interest in entrepreneurship education is primarily economic and based on the promotion of an enterprise culture and entrepreneurial knowledge. Cooper *et al.* (2004) contend that governmental emphasis on employment creation through small business development and growth is playing a central role in the development of entrepreneurship education. However, Gibb (2008) observes that this focus has now broadened. He states:

Over the past decade the official policy emphasis has changed to the contribution that enterprise and entrepreneurship might make to international competitiveness, facilitating a response to the social and economic uncertainties and complexities resulting from globalisation.

(Gibb 2008, p.104)

Gibb (2008) stresses that entrepreneurship education is regarded as a means of responding to this challenge through providing a workforce which is more flexible, creative, opportunity-seeking and achievement oriented. In recent years, a number of official reports have stressed the importance of an increased emphasis on entrepreneurship education within the context of government policy and economic growth and development. For example, in the United Kingdom (UK), successive governments have encouraged higher education institutions to introduce entrepreneurship education and more recently have noted the importance of entrepreneurial skills especially for science and technology students (Handscombe *et al.* 2008). The UK government regards graduate entrepreneurship as essential in building a strong knowledge-based economy (Hannon *et al.* 2005).

Likewise, the European Commission (2008a) in a recent report into entrepreneurship education in higher education, highlights that Europe needs to stimulate entrepreneurial mindsets in students, encourage innovative start-ups and foster a culture that is more sympathetic to entrepreneurship and the growth of small and medium-sized enterprises (SMEs). Furthermore, the report stresses that the key role of entrepreneurship education in achieving this is now widely recognised. This perspective is further supported within a subsequent European Commission publication (2008b). This report states:

The focus on entrepreneurship education is fuelled by the understanding that the EU today is not fully exploiting its entrepreneurial potential and that enhancing this will help the member states and Europe as a whole in transforming its economy and building its future economic and competitive strength.

(European Commission 2008b, p.1)

Furthermore, the Irish government has strongly endorsed the potential of entrepreneurship education. A major reason for this is quite simply the importance of entrepreneurship for the Irish economy and its future development. The Global Entrepreneurship Monitor (Fitzsimons and O’Gorman 2007), for example, observes that in 2007, 8.2% of Irish adults were early stage entrepreneurs and 9% of adults were owner managers of businesses older than 42 months. Indeed, Ireland is regarded as being at the forefront of Europe (and the OECD) in terms of the number of the adult population who are actively involved in entrepreneurship. The Irish governments’ perspective on entrepreneurship is succinctly outlined below:

There is clearly a need to ensure that entrepreneurship becomes a significant driver of future economic growth, and that the many benefits associated with entrepreneurship contribute to the well-being of the people of Ireland in all parts of the country.
(Forfás 2007, p.5)

In this regard, Cooney and Kidney (2008) note an acute desire by the Irish government to provide more entrepreneurship elements within educational institutions. This perspective is endorsed by Birdthistle (2006) who advises that entrepreneurship education is high on the agenda of the Irish government as entrepreneurs are the catalysts of growth, capital and innovation.

Secondly, student demand seems to be a major reason for the growth in entrepreneurship education. Edelman *et al.* (2008), for example, stress that increased interest in entrepreneurship by students has spurred colleges and universities to expand curricula in this area. Furthermore, Fiet (2001) observes that a US national Gallup poll showed 70% of high school students want to start their own business at some stage in the future and that universities and colleges throughout the US have

reported tremendous growth in their students' interest in learning about entrepreneurship and ultimately becoming entrepreneurs. Similarly, Birdthistle (2006) reports that the majority of student respondents in the Irish Survey on Collegiate Entrepreneurship confirm that they have thoughts of establishing a business. In this study, over 44% of respondents identified that they would like to start a business or work in a self-employed capacity directly after studies or within five years of completing their studies. Interestingly, Young (1997) suggests students' desire to study entrepreneurship is based not only on an aspirational desire to start their own business but also based on a wish to acquire knowledge helpful to their careers within large organisations.

Finally, the growth in entrepreneurship education opportunities stems from the business community themselves and their desire to have access to graduates with real business knowledge (Charney and Libecap 2003). Cooper *et al.* (2004) advise that interest from the business community stems from its desire to see institutes of higher education develop graduates who understand the small business domain and have the skills that enable them to move seamlessly into this environment. The international growth of entrepreneurship education is further explored within Chapter 2 of this thesis.

However, there is also a widespread and distinct realisation among theorists that there is an acute lack of research within the field and particularly with regard to the impact of entrepreneurship education. For example, Kirby (2002) stresses that research and knowledge on entrepreneurship education remains relatively underdeveloped despite increasing global demand. Similarly, in their earlier and much cited work, Garavan

and Ó Cinnéide (1994) state that research has been sparse and has tended to be fragmented, exploratory and descriptive in orientation. They indicate that most research questions tend to relate to a particular programme and more immediate measures of effectiveness (i.e. participant interest and immediate effect, participant knowledge acquisition, satisfaction with instructors, programme content, etc.). They conclude:

.....research designs, using control groups to compare participants with individuals who did not have entrepreneurial education experience, are needed to examine the lasting effects of entrepreneurship education interventions.

(Garavan and Ó Cinnéide 1994, p.4)

While the contribution of Garavan and Ó Cinnéide (1994) is now 16 years old, many of their sentiments are confirmed in the subsequent work of other scholars. For example, Gorman *et al.* (1997) in their very extensive review of entrepreneurship education literature, advise that an important challenge for scholars will be to measure the outcomes of initiatives particularly in terms of attitudes and levels of venture propensity. These observations are highlighted graphically elsewhere. Owusu-Ansah and Fleming (2001) indicate that few studies have been conducted on the outcomes of entrepreneurship education. Likewise, Menzies and Paradi (2003) while acknowledging the dramatic growth in provisions, argue that there is a distinct lack of research into the outcomes of entrepreneurship education and only a few studies explore graduates' propensity to venture. Similarly, Pittaway and Cope (2007) explain that while entrepreneurship education has grown considerably, the extent to which it has been evaluated remains very limited. Klant and Volkmann (2006) refer to the growing necessity for the evaluation of entrepreneurship education on a national and international basis while Gibb (2008) believes that an absence of studies into the long-term impact of entrepreneurship education is a major problem within the field. These

observations are affirmed by a number of other researchers (Hill and Ó Cinnéide 2001; McMullan and Gillin 2001; Henry *et al.* 2003; Kuratko 2005; Izquierdo and Buyens 2008).

In summation, current evidence suggests that the relative growth and success entrepreneurship education has enjoyed internationally in recent decades is paralleled by the very limited numbers of rigorous studies into the outcomes of initiatives over time. This research deficit is at the core of the research question posed within the current investigation. The research question will be highlighted after a discussion of the rationale of the present study.

1.3 Rationale of the Study

Entrepreneurship is a critical component within contemporary economic development and the fundamental importance of entrepreneurship to the economy of nations is now widely acknowledged within the literature (Heinonen and Poikkijoki 2006). Henry *et al.* (2003) for example, advise that entrepreneurship is regarded as a catalyst for economic growth, employment and wealth creation. This perspective is robustly endorsed by the European Commission (2008b) who suggest that entrepreneurship is a major driver of innovation, competitiveness and economic strength. Furthermore, they refer to the important role which education has in the development of entrepreneurial mindsets and talent. Likewise, Birdthistle (2008) outlines that encouraging entrepreneurship education is high on the agenda of the Irish Government given that Ireland depends on entrepreneurship for its future economic growth, prosperity, generation of capital and innovation.

The present research seeks to explore the long-term outputs of graduate entrepreneurship education in Ireland. The study involves a comprehensive examination of graduates who have completed their MBA in Ireland. It explores the venture propensity of graduates who have taken entrepreneurship as part of their programme and compares them to graduates with no exposure to entrepreneurship courses. Rationale for the thesis revolves around the fact that while college and university entrepreneurship education continue to grow dramatically on an international basis (Edelman *et al.* 2009), it is now generally acknowledged the field suffers from a distinct lack of rigorous research deliberation and specifically, investigative work into the long-term impact of educational initiatives (Chapman and Skinner 2006; Pittaway and Cope 2007; Souitaris *et al.* 2007; Gibb 2008; Hegarty and Jones 2008; Jones *et al.* 2008).

Certainly, entrepreneurship education is not without vulnerability and challenge and as the literature suggests, needs to address "many unknowns" despite its apparent success (Hills 1988; Robinson and Haynes 1991; Brazeal and Herbert 1999; Low 2001). Curran and Stanworth (1989) observe limited research deliberation within the core elements of entrepreneurship education and training programmes including content, teaching and outcomes evaluation. Some theorists perceive a record of mediocre research (e.g. Katz 1991) and a plethora of unanswered issues and questions. Van der Kuip (2000) suggests large gaps between entrepreneurship research, education and entrepreneurial practice. She calls on researchers to address this gap and strive towards more convergence of opinions of all entrepreneurship stakeholders. Her view is shared by a number of other eminent scholars such as Katz (2003) and Brush *et al.* (2003). This research background is one that presents many

research gaps within the literature and consequently offers enormous opportunity for researchers in the area (Block and Stumpf 1992; Kolverid and Moen 1997; Menzies 2003; Cooney and Murray 2008).

One such research gap outlined by theorists, focuses around the impact of entrepreneurship education. Kolverid and Moen (1997) note that relatively few studies appear to address the effect of entrepreneurship courses and programmes. This is a perspective shared by Charney and Libecap (2003). Similarly, Menzies and Paradi (2003), indicate only a few studies in the literature investigate entrepreneurship education graduates' propensity to venture. Hill *et al.* (2003) advise that since entrepreneurship education programmes are regarded as being important in terms of both national growth and global economics, there should be an enhanced level of research activity geared towards examining the outcomes of academic programmes. Furthermore, Béchard and Grégoire (2005) call on scholars to actively address this research gap and conduct systematic studies that explore the impact of entrepreneurship education. Similarly, Hannon (2005) suggests that there is confusion about the impact of entrepreneurship education while Pittaway and Cope (2007) draw a parallel between its growth and a lack of evaluative research. They observe:

.....entrepreneurship education in the UK has grown considerably over the previous two decades, while on the other hand, the extent to which it has been evaluated...has been rather limited.

(Pittaway and Cope 2007, p.480)

Likewise, the European Commission in its recent report into entrepreneurship education in Europe (2008b) stresses the importance of tracking and evaluating the impact of entrepreneurship education (within higher education institutions), and

observes that “very little” is known about its outcomes. The present research pursues this challenge through exploring the long-term impact of entrepreneurship education on MBA graduates in Ireland. Furthermore, the European Commission expresses concern given the cost of such educational provisions and advises:

National government should construct a system to evaluate the effects (of entrepreneurship education)...No government are currently doing this at a systematic level, so new approaches have to be developed.

(European Commission 2008b, p.39)

At institutional level, the Commission outline that across Europe, only 38% of Higher Level Institutions have formalised procedures of following up on the outcomes of initiatives and “follow up is often disregarded in a busy everyday schedule” (European Commission 2008b). Solomon (2010) advises that follow up and analysis of the outcomes of entrepreneurship education is critical in order to ensure the continued support of important stakeholders.

While the European Commission is quite correct in highlighting the importance tracking the impact of provisions within higher education, it is also important to note that over the past two decades, a small number of researchers have successfully conducted research into this aspect of entrepreneurship education. For example, Clark *et al.* (1984) conducted a pioneering study examining venturing rates of graduates who had taken an entrepreneurship course compared with those who did not complete the option. While their results indicated that courses in entrepreneurship do aid new venture creation, it is somewhat surprising that some 25 years later, their call for additional research to substantiate the relationships investigated has been taken up by a very limited number of scholars. These include Kolvereid and Moen (1997), Fleming (1999), Owusu-Ansah and Fleming (2001), Hindle and Cutting (2002) and

Menzies and Paradi (2003). This volume of work is explored in more detail in Chapter 3 of the present thesis. Furthermore, a number of other scholars including Caird (1989), Garavan and Ó Cinnéide (1994), McMullan and Gillan (2001) and Hegarty and Jones (2008) observe the lack of and need for evaluative studies over time. This perspective is shared by Pittaway and Cope (2007). They refer to the importance of research addressing the outcomes of entrepreneurship education in the long-term (when graduates pursue their individual careers) and not exclusively focusing on the impact of one programme and its immediate effect.

Against the background of successful growth in popularity of entrepreneurship education and the obvious absence of research deliberation into its long-term outcomes, the present research study attempts to address this pivotal research gap within the literature. This is done to increase understanding of the field entrepreneurship education and consequently help ensure its further development. There is a substantial body of research literature examining the impact of social learning on an individuals' decision to behave entrepreneurially. This is termed the social psychological approach to entrepreneurship by Carson *et al.* (1995). It explores a range of social issues and external considerations that appear to stimulate entrepreneurial action. These include factors such as family background, (Hisrich and Ó Cinnéide 1986; Scott and Twomey 1988), religion and culture, (Bridge *et al.* 1998; Wickham 2001), work and life experience, (Timmons 1999; Hisrich and Peters 1998), and the formal education received by entrepreneurs (Gasse 1982; Cooper and Gascon 1992; Garavan and Ó Cinnéide 1994; Hill 2002). The present thesis builds on this social psychological approach to entrepreneurship through examining the impact of entrepreneurship education on MBA graduates in Ireland. The study contributes to the

debate on whether entrepreneurship can be taught. More specifically, this thesis adds to the relatively few studies examining the outcomes of entrepreneurship education (Pittaway and Cope 2007). It is motivated by the lack of research into entrepreneurship education, its outcomes and specifically graduates' propensity to establish and develop entrepreneurial ventures.

As outlined above, the present research uses MBA graduates in Ireland as its unit of analysis because the vast majority of previous studies include undergraduate groups (Clark *et al.* 1984; Wyckham 1989; Fleming 1999; Owuzu-Ansah and Fleming 2001; Menzies and Paradi 2003) and only a very small number of studies to date have utilised MBAs (Gillan *et al.* 1996; Chrisman 1997; McMullan and Gillan 1998). This is somewhat surprising since Block and Stumpf (1992), on noting the importance of further research into the effectiveness of entrepreneurship education, propose that an appropriate group for such an investigation might be graduates with MBAs who have taken entrepreneurship courses and those who have not. They advise the following research propositions warrant investigation:

... Graduates with MBAs who have had entrepreneurship courses and who follow an entrepreneurial career will buildmore profitable businesses, and will employ more workers.....They will start more businesses and survive better than MBAs who have not had such courses...

(Block and Stumpf 1992, p.39)

Secondly, to date only the work of Fleming (1999) and Owuzu-Ansah and Fleming (2001) have explored the long-term impact of entrepreneurship education in Ireland. This extensive research examined entrepreneurship education in the context of undergraduates. Given the proliferation of entrepreneurship education within Irish higher education, the focus of government policy in this area (alluded to earlier in this

chapter and discussed in more detail in Chapter 2 of this thesis), and the increasing popularity of entrepreneurship modules on MBA programmes (National Council for Graduate Entrepreneurship 2007; Edelman *et al.* 2008), the current thesis attempts to complement this former work through further researching entrepreneurship education in Ireland utilising MBA graduates. Finally, the present research addresses two further vulnerabilities associated with previous research deliberation in the area. Firstly, much of the research into the impact of entrepreneurship education has tended to focus on examining a specific course or programme and its outcomes (Falkang and Alberti 2000; Hill and Ó Cinnéide 2001; Cooney and Murray 2008). This results in the “obvious problem of generalization” (Falkang and Alberti 2000, p.102). Secondly, a number of theorists underline the importance of incorporating control groups into research designs that attempt to explore the outcomes of entrepreneurship education (Block and Stumpf 1992; Garavan and Ó Cinnéide 1994; Henry *et al.* 2005; Matlay 2005). This facilitates a comparison between the behaviour of those who have taken entrepreneurship education and those who have not and enables an examination of “the lasting effects of entrepreneurship education and training interventions” (Garavan and Ó Cinnéide 1994). The current research study includes survey participants who have taken their MBA degrees in institutions throughout Ireland. Some of these graduates have taken entrepreneurship as part of their programme while others did not.

In summary, this thesis explores the outcomes of entrepreneurship over the long-term using MBA graduates in Ireland as the unit of analysis. The study is conducted against a background of dramatic growth in the provision of entrepreneurship

education internationally and a perceived lack of robust studies assessing the outcomes of provisions. The present research attempts to bridge this research gap.

1.4 Objectives of the Present Research

This thesis aims to explore the long-term impact of graduate entrepreneurship education in Ireland. It is motivated by a desire to contribute to the critically important field of entrepreneurship education and its outcomes and seeks to establish whether there is a relationship between graduate exposure to entrepreneurship education and the propensity of these graduates to behave entrepreneurially. Firstly, it seeks to add to the academic debate as to whether entrepreneurship can be taught. This is frequently cited within the literature as a key question regarding entrepreneurship and its future development (Clarke *et al.* 1984; Bygrave 1989; Fleming 1999; Erkkilä 2000; Kuratko 2005; Raichaudhuri 2005; Klandt and Volkmann 2006; Edwards and Muir 2007; Jones 2007; Kirby and Honeywood 2007; Pittaway and Cope 2007; Boocock *et al.* 2009). For example, Boocock *et al.* (2009) highlights that “entrepreneurship education assumes that the skills relevant to successful entrepreneurship can indeed be taught” (Boocock *et al.* 2009). Similarly, Menzies (2004) refers the “growing literature indicating that entrepreneurship can be taught” (Menzies 2004). However, Hill (2002) observes that there is a large volume of research linking entrepreneurial behaviour with innate personality traits and characteristics. The present work seeks to explore whether entrepreneurship can be taught through assessing whether MBA graduates who have taken entrepreneurship as part of their programme demonstrate more entrepreneurial prowess than their peers with no such exposure to entrepreneurship education.

Secondly, the current research examines the impact of graduate college and university entrepreneurship education. The question of impact, as outlined earlier in this chapter, is highlighted in the literature as a major research gap and one needing further exploration. Consequently, the research problem explored in this study is as follows:

What influence does entrepreneurship education have on MBA graduates propensity to venture?

Essentially, this research argues that entrepreneurship can be taught and its effect over time suggests that those exposed to it demonstrate more entrepreneurial prowess, behaviour and venture success than graduates who have not taken entrepreneurship courses. Entrepreneurial behaviour is viewed by the author as the ability to start, develop and grow an entrepreneurial venture. Garnier *et al.* (1991) observe that for many years most designers of entrepreneurship programmes simply measured the level of satisfaction with the course. However, Vesper (1987) points out that if education and training methods are to be substantially improved, participant satisfaction as an evaluation measure is somewhat limited. He stresses the impact of programmes on entrepreneurial behaviour, particularly behaviour relating to venture creation, needs to be assessed. The current study will address this research gap in the literature through an investigation of graduates and examining the propensity to venture among those with and without exposure to entrepreneurship education.

The relative importance and originality of the research problem for this thesis emanates from the fact that the growth and popularity of entrepreneurship education has been associated with the fact that very few studies to date have explored the long-term effectiveness of courses. The literature indicates a tendency for researchers within the field to investigate a course and its immediate outcomes (Klandt and

Volkmann 2006; Pittaway and Cope 2007; Gibb 2008). Menzies and Paradi (2003), for example, highlight this as follows:

The authors could find few studies in the literature that looked at entrepreneurship education and graduates' propensity to venture.
(Menzies and Paradi 2003, p.122)

This research studies graduates who have taken their MBA in Ireland over a twelve year time period (1992-2004). The study includes a random sample frame of 550 graduates and attempts to examine venture rates, venture performance and the entrepreneurial intent of those graduates who have taken entrepreneurship and those who have not. Similar to the work of Menzies and Paradi (2003) who examined the effectiveness of entrepreneurship education (surveying cohorts of graduate engineers), MBA graduates have varying exposure to entrepreneurship education while taking their programme. Some graduates will have no exposure to entrepreneurship while others will have taken one or more modules. Accordingly, in answering the above research question both cohorts of graduates will be surveyed.

Perry (1998) suggests that within the context of writing a research thesis, once the problem is identified, authors should attempt to list research questions or hypotheses that will be expanded upon in later research methodology chapter/s. In a similar way, Adam and Healy (2000) advise that once the research gap and problem is identified, research objectives should be articulated. Consequently, the research gap for this thesis centers around a distinct lack of rigorous research into the outcomes of entrepreneurship education and has been formulated into the following research objectives:

RO1 To explore the objectives of graduates on taking a course/s in Entrepreneurship as part of their MBA.

This first research objective attempts to explore the rationale, expectations and objectives of MBA graduates on taking an entrepreneurship course/s. The key area of interest is whether the pre-course objectives of those who venture differ from those graduates who pursue alternative careers in employment. Block and Stumpf (1992) outline that this represents an important question in entrepreneurship education research and ask “do people that fall into different entrepreneurship education audiences have different objectives in mind when they attend an educational programme?” (Block and Stumpf 1992). They propose that people who are or intend to become entrepreneurs or entrepreneurial managers, will have objectives that differ from those who do not want to become entrepreneurs. Furthermore, they suggest that aspiring entrepreneurs will have objectives that focus on acquiring knowledge germane to entrepreneurship and developing related entrepreneurial skills and techniques. In contrast, Block and Stumpf (1992) contend that others who regard themselves as entrepreneurial sympathisers or having a certain entrepreneurial spirit have objectives focusing on skill development, attitudinal change and developing empathy with the entrepreneurial process. The present research question attempts to empirically investigate this research proposition.

There is a substantial body of literature and growing consensus on the objectives of entrepreneurship education (McMullan and Long 1987; Solomon *et al.* 1994; Kourilsky and Carlson 1997; Kuratko 2005; Hindle 2007). However, this research objective examines the objectives of entrepreneurship education from a purely “consumer perspective”. In other words, it explores whether graduates themselves

have differing objectives on taking entrepreneurship education as part of their MBA. It also examines whether these are realised over the long-term. The present author could find no evidence of other research conducted in this area. This is somewhat surprising considering that the work of Block and Stumpf (1992) was completed some 18 years ago.

RO2 To ascertain the level of career satisfaction of MBA graduates in Ireland.

This is a further research objective relating to the impact of entrepreneurship education. It attempts to assess the degree of satisfaction graduates have with their career to date. Block and Stumpf (1992) underline the importance of studying:

.....the degree of satisfaction of the (MBA) student with (their) career when compared to others who have not had any formal entrepreneurial education experience.

(Block and Stumpf 1992, p.24)

Owusu-Ansah and Fleming (2001) in their work examine the levels of career satisfaction of graduate entrepreneurs. This indicates that 87.7% of respondents were either satisfied or very satisfied with their career to date. Owusu-Ansah and Fleming (2001) observe:

It is interesting to note that on isolating the responses of the graduate entrepreneurs an extremely high level of satisfaction is reported in both 1995 and 2000 surveys in terms of weighted average scores which increased from 4.30 to 4.47 respectively.

(Owusu-Ansah and Fleming 2001, p.104)

The present investigation will examine the levels of career satisfaction of MBA graduates in Ireland who have taken entrepreneurship as part of their programme and compare them to graduates with no such exposure.

RO3 To examine the impact of entrepreneurship courses on the careers of MBA graduates.

While studies within the literature allude to student attitudes towards entrepreneurial careers (Scott and Twomey 1988; Kuratko 2005; Cooper *et al.* 2004; Edelman *et al.* 2008; Shinnar *et al.* 2009) there is a distinct absence of research into the influence of entrepreneurship course/s have on the subsequent career choices of graduates. This seems somewhat surprising since raising awareness of entrepreneurship per se and entrepreneurship as a future career possibility are often cited as objectives of entrepreneurship education (Gorman *et al.* 1997; Hill *et al.* 1997; McMullan and Vesper 2000).

An exception to the absence of research in this area is a longitudinal study by Owuzu-Ansah and Fleming (2001) which explores the impact of entrepreneurship education on Irish graduates. This important work indicates that 35.5% of responding graduates felt the entrepreneurship course had a “very important” or “important effect” on their career choice. The present research question contributes to this apparent research gap through examining MBA graduates in Ireland (1992-2004) and attempts to build on the work of Owuzu-Ansah and Fleming (2001).

This research objective includes all participants who were exposed to entrepreneurship education as part of their MBA. It explores the impact of entrepreneurship course/s on those who have started ventures and on those who have had exposure to entrepreneurship but have not started businesses. This is achieved through examining the impact of entrepreneurship education on entrepreneurs careers’ to date, highlighting the extent of entrepreneurial aspiration of graduates in

employment and studying the impact of the entrepreneurship course/s on their aspiration to venture. Furthermore, the present research objective has been highlighted by Menzies and Paradi (2003) as an area worthy of further research exploration. Similarly, Block and Staumpf (1992) propose a research proposition warranting investigation might include:

An MBA education without entrepreneurship courses will reduce the desire of graduates to become entrepreneurs.

(Block and Staumpf 1992, p.39)

RO4 To investigate the relationship between entrepreneurship education and the propensity of MBA graduates in Ireland to venture.

The widespread growth and development of entrepreneurship education is amply highlighted within the literature (Fiet 2001; Charney and Libecap 2003; Béchard and Grégoire 2005; Kuratko 2005; Raichaudhuri 2005; Klandt and Volkmann 2006; Green and Rice 2007; Hindle 2007; Gibb 2008; Katz 2008; Shinnar *et al.* 2009). However, as alluded to earlier in this chapter, remarkably little research has been conducted into the long-term outcomes of courses and specifically graduates' propensity to venture (Block and Stumpf 1992; Garavan and Ó Cinnéide 1994; Upton *et al.* 1995; Gorman *et al.* 1997; Kolvereid and Moen 1997; McMullan and Gillin 1998; Menzies and Paradi 2003; Menzies 2004; Pittaway and Cope 2007).

Given that developing both the awareness and desire of students to enter entrepreneurship as a career is seen as a major objective of entrepreneurship education (Johansen 2007), the relative cost implications of providing such initiatives (European Commission 2008b) and the ongoing debate as to whether entrepreneurship can be

taught (Henry *et al.* 2005), it is appropriate that the venture propensity of participants should be a core element of the research agenda within the field. However, only a limited number of studies have established a positive relationship between entrepreneurship education and student propensity to venture (Clarke *et al.* 1984; Wyckham 1989; Wheeler 1993; Upton *et al.* 1995; Kolvereid and Moen 1997; Fleming 1999; Owuzu-Ansah and Fleming 2001; Menzies and Paradi 2003). The present research objective aims to build on previous work and bridge an important research gap within the entrepreneurship literature.

RO5 To evaluate the performance of ventures created by MBA graduates in Ireland

The above objective seeks to explore the economic performance of ventures started by graduates. While RO4 attempts to investigate the propensity of MBA graduates in Ireland to venture, the present objective examines the performance of these entrepreneurial concerns. This been identified as a major measure of the outcomes of entrepreneurship education (Block and Stumpf 1992; McMullan *et al.* 2001; Henry *et al.* 2005). Despite this, remarkably little empirical work has been conducted within the area. They suggest appropriate economic measures might include survival rates, size of enterprise, employment levels and profitability levels. These perspectives are endorsed by McMullan *et al.* (1986), and McMullan and Gillin (2001) who include survival rates, growth levels and profitability as dimensions against which entrepreneurship programmes might be evaluated. McMullan and Gillin (2001) acknowledge that a number of studies have used these “objective” measures of effectiveness but only a few studies have compared results with those who have had no exposure to entrepreneurship education or training

The present research examines the relative economic contribution of those ventures created by MBA graduates in Ireland. It compares the economic contribution of ventures created by MBAs who have taken a course/s in entrepreneurship and compares them with the economic contribution of ventures created by graduates who did not take entrepreneurship as part of their programme. Economic contribution measures used in this study include those suggested by Block and Stumpf (1992) and McMullan *et al.* (2001) and focus on employment generated, sales and profitability levels over the last three years.

1.5 Research Methodology

This section underlines the research methods used within the current investigation. According to Kumar (2005) the quantitative-qualitative classification within a project is dependent on the purpose of the study, how the variables are measured and how the researcher intends to analyse the information. He contends that a quantitative study is best when data are gathered using predominantly quantitative variables and the researcher is attempting to quantify the extent or magnitude of variation. Qualitative research is suitable if the purpose of the study is to describe a situation or variation of a situation without quantifying it. Similarly, on the question of the quantitative and qualitative debate, Patton (1990) advises that quantitative approaches are appropriate when the study is attempting to measure reactions of a great many individuals to a set of questions. This gives a broad generalisable range of findings which are succinct and economical. However, a major disadvantage of large quantitative studies is that they tend to offer statements about populations and not individuals or individual cases (Henry *et al.* 2003). By contrast, qualitative methods typically produce a wealth of detailed information about a much smaller number of individuals and cases. This

increases understanding of the cases and the situations studied, but reduces generalisability.

The distinct methodological difficulty of exploring effectiveness has been highlighted by a number of scholars including Gorman *et al.* (1997), Van der Kuip (1999) and Storey (2000). Henry *et al.* (2003) contend these difficulties include procedural and methodological considerations, varying notions of entrepreneurship and a scarcity of performance measures. They suggest that in terms of evaluating entrepreneurship initiatives, measuring only quantitative (i.e. economic) results may not provide a full and comprehensive picture. Likewise, Kumar (2005) observes that there is increasing recognition by most disciplines in the social sciences that both quantitative and qualitative methods are important for a good research study.

Accordingly, the current research pursues quantitative and qualitative measures. The quantitative approach establishes measures of such issues as graduate objectives on taking entrepreneurship course/s, the number of graduate start-ups, their economic contribution, future entrepreneurial intent and levels of career satisfaction. However the current author also pursues a qualitative approach where graduates views are sought in an individualistic and in-depth fashion. Accommodating both perspectives (methodological triangulation) should increase the validity and reliability over a single method approach (Guba, 1990). This thesis uses between method triangulation where two different research techniques (usually one quantitative and one qualitative) are combined together to maximise the merits of each. Bryman (2004) advises that this approach facilitates the use of quantitative research to corroborate and “cross-check” qualitative research findings or vice versa. He further suggests that social

scientists are likely to have greater confidence in their findings when these are derived from more than one method of investigation. Likewise, Adam and Healy (2000) state that triangulation can enhance belief that research results are valid and “not a methodological artefact” (Adam and Healy 2000). They explain that between method triangulation checks for consistency and reliability and helps consolidate research findings through the use of both quantitative and qualitative methodologies.

The mixed methodology approach is endorsed by Henry *et al.* (2003) who used both quantitative and qualitative approaches in their comprehensive study into entrepreneurship training. In relation to their multi-method framework, they stress the appropriateness of complementing quantitative approaches with qualitative methodologies:

While it has been argued that some multi-method studies focus purely on statistical analysis (Diesling, 1971), the need to integrate such analysis with qualitative data has also been emphasized (Smithson, 1991).

(Henry *et al.* 2003, p.113)

The present study involves a detailed mail questionnaire, which was distributed to 550 graduates who took their MBA in Ireland between 1992 and 2004. The database is made up of a random sample of MBA graduates who were members of the Irish MBA Association of Ireland (MBAAI). This methodology facilitates the measurement of responses of a large number of people to a range of questions and allows for comparison and statistical analysis of the data. The primary aim of the mail survey is to obtain information from a representative sample of the population (MBA graduates in Ireland) and present findings that are representative of the population as a whole. The qualitative study involves in-depth interviews of a representative sample of MBA graduates in Ireland. This qualitative perspective highlights effectiveness on a more

micro, individualistic level and produces a wealth of more detailed information about a much smaller number of people but, unlike the main quantitative approach, reduces generalisability. Bell (2002) observes, however, that the great strength of this method is that it allows the researcher to concentrate on a specific instance or situation and identify the various instances at work. She believes these may remain hidden within a large survey.

1.6 Structure of the Thesis

This chapter, Chapter 1, introduces the impact of entrepreneurship education as the overriding theme of the present study. It explains that the background of the research lies in the exponential growth in entrepreneurship education and an accompanying abundance of research gaps within the field. One such research gap highlighted by theorists centers around the outcomes and effectiveness of entrepreneurship education. Rationale for the pursuance of this study by the author includes the fact that few studies in the literature examine the effectiveness of entrepreneurship education, and specifically entrepreneurship education graduates' propensity to venture. The author outlines a number of research objectives based around this central research theme and proposes research methodologies appropriate to the study.

Chapter 2 offers a theoretical framework based around a robust understanding of entrepreneurship and entrepreneurship education literature. Perspectives on defining and understanding the term entrepreneurship are examined and the various ways of studying the individual entrepreneur are explored. Furthermore, entrepreneurship education is defined and its objectives and importance outlined. Finally, the effectiveness of entrepreneurship education is discussed and assessed.

Chapter 3 synthesises the literature and examines the research methodology used in the present study. It includes a methodological review and outline of the research hypotheses and consequent research design used. The design, validity, piloting and structure of the research instruments are presented and explained as is the choosing of a sample frame and the ultimate administration of the survey. Chapter 3 also introduces the in-depth interviews as a methodological approach and explains their design, rationale and selection.

Chapter 4 explores the research findings of the current investigation. These are based on each of the hypotheses identified within Chapter 3. It commences by highlighting a personal profile and introductory data on survey participants (MBA graduates in Ireland, 1992-2004). This is followed by the presentation and examination of the research findings from the quantitative survey (statistical analysis) and the qualitative in-depth interviews. The chapter finishes with a summary of results and conclusions, which are further explored within Chapter 5.

Finally, Chapter 5 analyses and discusses the findings of this research and evaluates its theoretical and empirical contributions. It presents overall conclusions relating of the current investigation and offers recommendations based on the completed work. Furthermore, it highlights limitations of the study and presents a series of recommendations and possible directions for further research deliberation within the discipline.

Chapter Two

Entrepreneurship Education - A Theoretical Frame-Of-Reference

2.1 Introduction

This chapter explores two of the core theoretical issues outlined in Chapter 1. These are the concepts of entrepreneurship and entrepreneurship education. Hill (2002) suggests that the importance of entrepreneurship is amply observed within the literature. This is an observation shared by others (Wennekers and Thurik 1999; Anderson and Jack 2001; Fiet 2001; Kuratko 2005; Betim et al. 2007; Brodie and Laing 2007; Bygrave and Zacharakis 2008). However, Nodoushani and Nodoushani (2000) point out that, despite the “entrepreneurial explosion” of the 1980s, researchers are still struggling to define the term entrepreneurship. Accordingly, the chapter commences by discussing some of the research contributions that attempt to explain the meaning of the term and its various connotations.

Chapter 2 further introduces the concept of entrepreneurship education, the immediate discipline of the current thesis. The chapter focuses on an exploration of three central themes within entrepreneurship education. Firstly, a discussion on the definition of entrepreneurship education is presented, and the rationale behind its development explored. While the scope and level of interest in entrepreneurship education is currently beyond question (Vesper and Gartner 1999; Fiet 2000; Charney and Libecap 2003; Brush 2003; Katz 2003; Kuratko 2005; Green and Rice 2007; Cooney and Murray 2008; Hazlett *et al.* 2009), the present author believes it is important to conceptualise, appreciate and understand the rationale for the development of the field as a prelude to the subsequent discussions later in the chapter. Secondly, the question as to whether, in fact, entrepreneurship can be taught (briefly alluded to in Chapter 1) is evaluated as are the attempts at categorising the discipline. Furthermore, the major

objectives of entrepreneurship education are outlined and discussed. Finally, important observations relating to the outcomes, measurement and effectiveness of entrepreneurship education programmes are assessed and explored. Collectively, these themes are of relevance to the topic under investigation and form the basis for the conceptual model of the present work.

One of the key preliminary tasks when undertaking a research study is to examine and evaluate the existing literature within the area of interest (Blaxter *et al.* 2008). Exploring previous contributions of theorists provides researchers with the necessary understanding and background to add insightfully to their own understanding of particular research problems and consider methodologies appropriate to their investigation. Furthermore, a primary objective of the literature review is that it enables the development of a theoretical framework, which provides a basis for the analysis and interpretation of research data. Information can be organised within the context of the framework as it provides a guide and degree of focus for the review of literature. A conceptual framework, on the other hand, stems from the theoretical framework and usually concentrates on one part of it. Kumar (2005) notes that the theoretical framework consists of theories and issues in which the study is embedded whereas a conceptual framework describes aspects selected from the theoretical framework and becomes the basis of a study. Hence, the conceptual framework grows out of the theoretical framework and relates to the specific research problem. This chapter examines the theoretical background of the present study and finishes with the development a conceptual model pertinent to addressing the research problem posed within the study and outlined in Chapter 1.

2.2 Defining the Entrepreneur and Entrepreneurship

The selection of an appropriate basis for defining and understanding the terms entrepreneur and entrepreneurship has proved a challenging problem for academic researchers and writers (Nodoushani and Nodoushani 2000; Hill 2002; Henry *et al.* 2005; Aouni and Surlemont 2007; Betim *et al.* 2007). Kilby (1971) equated entrepreneurs with 'heffalumps', fictional characters in the Winnie-the-Pooh stories that no one has been able to describe with certainty, but are regarded as being both large and important. So it is with entrepreneurs. No one has precisely defined what an entrepreneur is, but their contribution to the development of society, economic prosperity and humankind generally is widely acknowledged as significant. The problem of definition was outlined by Cole (1969) in rather different terms:

My own personal experience was that for ten years we ran a research centre in entrepreneurial history, for ten years we tried to define the entrepreneur. We never succeeded. (Cole 1969, p.17)

More recent reviews of entrepreneurship literature have revealed little change.

Nodoushani and Nodoushani (2000) for example conclude:

Despite the popular frenzy over the entrepreneurial explosion of the 1980s, we are still struggling with a proper definition for entrepreneurship. (Nodoushani and Nodoushani 2000, p.7)

While the field of entrepreneurship research has been described as young, at a formative stage, still in its infancy and undergoing enormous expansion (Hill *et al.*, 2003; Aouni and Surlemont 2007; Fayolle and Gailly 2007; Johansen 2007; Bygrave and Zacharakis 2008), many scholars agree that a common definition of the term entrepreneur remains elusive and, accordingly, have expressed concern over what

constitutes entrepreneurship as a field of study (Gartner 1989; Harrison and Leitch 1994; Nodoushani and Nodoushani 2000; Delmar 2000; Hill 2002; Landstrom 2005; Brodie and Laing 2007; Tounes 2007; Turunen, 2008; Trevelyan 2009). Landstrom (2005) for example argues that one of the greatest criticisms of entrepreneurship, as a field of research, is an acute absence of a definitive understanding of the terms “entrepreneur”. Furthermore, Aouni and Surlemont (2007) outline that eminent scholars in the field of entrepreneurship have arrived at differing understandings of the term “entrepreneur”. They succinctly explain that:

In searching for a definition of the concept of “entrepreneur”, Gartner (1990) listed 90 different attributes associated with this concept. More recently, Morris (1998), in analyzing scientific articles and textbooks, listed 77 different definitions of the concept of entrepreneurship. This leads to great ambiguity and confusion.

(Aouni and Surlemont 2007, p.3)

However, Brush *et al.* (2003) advise that the terms “creation” and “opportunity” provide a unifying means of understanding the entrepreneur. A focus on other contemporary research reveals that both these terms feature prominently with contemporary scholars (Hisrich and Peters 1998; Allen 2003; Brush 2003; Kuratko 2005; Tounes 2007). Similarly, Bygrave and Zacharakis (2008) describe the term entrepreneur by combining both of the terms “creation” and “opportunity” and it is their definition of the term that is used for the purposes of the present research. They conclude:

An entrepreneur is someone who perceives an opportunity and creates an organisation to pursue it.

(Bygrave and Zacharakis 2008, p.49)

Understanding the term “entrepreneurship” has proved equally challenging. Accordingly, Fayolle and Gailly (2007) outline a poignant word of caution regarding the future development of the entire discipline. They declare:

As previously stated by numerous researchers, there is no consensus regarding what entrepreneurship is. As a consequence, how can there be a consensus regarding what entrepreneurship stands for as a teaching subject?

(Fayolle and Gailly 2007, p.3)

In order to fully understand entrepreneurship education (the core theme of the present thesis) or any facet of entrepreneurship research, one must firstly be aware of the nuances and meanings of entrepreneurship. Entrepreneurship can mean different things to different people (Gartner 1989; Harrison and Leitch 1994; Nodoushani and Nodoushani 2000; Hill 2002; Aouni and Surlemont 2007; Fayolle and Gailly 2007; Tounes 2007; Brush *et al.* 2008). Hill (2002), for example, outlines that entrepreneurship has been variously explained as personality traits, background factors, behaviour, a managerial approach and a process. Two of these approaches (trait and behaviour) have been the focus of much deliberation (Neck *et al.* 2007). One such contribution is by Gartner (1989). He acknowledges that there does not seem to be a generic definition of the entrepreneur and entrepreneurship and draws on an analogy between this quandary and a line from Yeats’ famous poem, *Among School Children* (1956). In this poem Yeats asks the question “how can we tell the dancer from the dance” (Yeats 1956, cited in Gartner 1989). Gartner (1989) further explains that to fully understand the entrepreneur, one must view entrepreneurship from a behavioural perspective and not artificially separate the dancer (entrepreneur) from the dance (entrepreneurship). He advises that the entrepreneur is not a fixed state

of existence but rather “...entrepreneurship is a role that individuals undertake to create organizations” (Gartner 1989).

In this way entrepreneurship is perceived as behaviour (creating organisations) and the entrepreneur is the individual behind this behaviour (the dancer). Furthermore, Gartner (1989) purports that exploring what entrepreneurs do when embarking on the creation of organisations, not only adds greatly to our understanding of entrepreneurship but also to comprehending the individual behind this behaviour. Likewise, Neck *et al.* (2007) advise that entrepreneurship should focus on what the entrepreneur does (their participation in a series of activities to create a venture) and not who the entrepreneur is. This view is supported by Trevelyan (2009) who stresses the need for more research into the actual activities in which entrepreneurs engage. Furthermore, a number of researchers observe a narrowly focused understanding of entrepreneurship within the literature. For example, Bogenhold *et al.* (2001) suggest that interpretative issues surrounding the word ‘entrepreneurship’ are often overlooked, and the use of the term is often based on selective criteria and associations. They conclude that the use and understanding of entrepreneurship is vague, uncertain, and often narrowly associated with the topic of self-employment. However, Kirby and Honeywood (2007) observe that this is changing and increasingly it is being recognised that entrepreneurship is not just about new venture creation or small business management. It also involves opportunity, the harnessing of resources, risk and change. Accordingly, entrepreneurs can be found in all walks of life (Kirby and Honeywood, 2007). Gibb (2008) further develops this and advises that the narrow association with new venture creation and business growth must be expanded to a much wider context. He contends that:

This stance does not at all abandon the notion that entrepreneurship is centrally concerned with the way that individuals and organizations innovate, create and implement new ideas and ways of doing things, respond proactively to the environment, and thus provoke change involving uncertainty and complexity as in the traditional Schumpeterian sense.....It merely provides for a much wider context (than business) for these activities.

(Gibb 2008, p.105)

Likewise, Cooper *et al.* (2004) advise that entrepreneurship applies equally to those starting and running a business, managing a school, university, charity or lobby group. Similarly, Edwards and Muir (2007) contend that entrepreneurship is not necessarily a purely business discipline but can be an aspect of everyday life of individuals within different working, religious and cultural contexts. Furthermore, they stress that clarification on the precise meaning of the term entrepreneurship would substantially improve the validity and reliability of research deliberation. They advise that an absence of a universal understanding of entrepreneurship has had an adverse affect on entrepreneurship research deliberation. Certainly, inconsistencies and different approaches do seem to co-exist. Accordingly, academic discourse and discussion on entrepreneurship risks attempting to develop typologies of different concepts. For example, Klein and Foss (2008) believe that the field lacks consensus on key issues such as the unit of analysis.

Development of definitions of entrepreneurship can be seen in Table 2.1 below. The Irish-born French economist Richard Cantillon (1755) is credited as being the first to introduce the term entrepreneur (from the French verb “entreprendre”, meaning "to undertake" and was translated from the German verb “untemehmen” which has the same meaning). He associated risk-bearing activity in the economy with the entrepreneur and applied it to the individual who obtained factors of production and combined them into products for the marketplace. Almost fifty years later Mill (1848)

expanded this and considered direction, supervision, control and risk taking to be functions of the entrepreneur. Interestingly, Mill regarded risk bearing as the main distinguishing feature between the manager and entrepreneur. Schumpeter (1934) stressed the role of innovation as a distinguishing factor for entrepreneurs and unlike Mill, believed that both managers and entrepreneurs experience risk. He recognised that the entrepreneurs' challenge is to find and use new ideas. Kuratko and Hodgetts (1995) point out that until the 1950s, the majority of definitions and references to entrepreneurship had come from economics. The pioneering work of Cole (1959) viewed entrepreneurship in a broader social context and regarded it as a bridge between economics and society. Shapero (1975) describes entrepreneurship in more behavioral terms and talks of necessary skills such as initiative, organisation and risk. This perspective is highlighted by other more recent theorists who see entrepreneurship in terms of personal skills, change, risk, creation and reward (Drucker 1985; Timmons 1990; Allen 2003; Bygrave and Zacharakis 2008).

Table 2.1 A summary of entrepreneurship definitions

Name	Year	Themes Within Definition
Cantillion	1755	Risk, factors of production, marketable products
Smith	1776	Provide and accumulate money
Mill	1848	Direction, supervision, control, risk-taking
Schumpeter	1934	Innovation, risk
Cole	1959	Bridge between society and profit institutions
Shapero	1975	Initiative, organisation and risk
Hisrich/ Peters	1998	Creation, time and effort, risk, the rewards
Allen	2003	Evaluating and exploiting opportunity
Cooper <i>et al.</i>	2004	Recognition of opportunity
Klandt /Volkman	2006	Recognition, exploitation of opportunities
Kirby/Honeywood	2007	Opportunity and harnessing of resources
Klein and Foss	2008	Discovery, exploitation of opportunities

Adapted from Hisrich and Peters (1998, p.6)

As can be seen from Table 2.1, a very major theme pertaining to contemporary entrepreneurship literature is the strong association of the term with opportunity recognition and exploitation (Cooper *et al.* 2004; Klandt and Volkmann 2006; Kirby and Honeywood 2007; Klein and Foss 2008). Cooper *et al.* (2004), for example, suggest that the definition of entrepreneurship needs to include opportunity in the pursuit of wealth creation. In the pursuance of opportunities, they argue that entrepreneurship requires:

...an ability to identify, access and harness resources that facilitate wealth creation, an ability to access and take appropriate and acceptable risk, and the persistence to see things through to completion .

(Cooper et al. 2004, p.12)

This perspective is further evidenced by Klandt and Volkmann (2006). They observe that in spite of the great number of varying attempts at defining and understanding the core concepts of entrepreneurship:

...a certain consensus seems to exist in so far as the core of entrepreneurship is seen as the recognition of opportunities and their exploitation through the creation of new structures.

(Klandt and Volkmann 2006, p.196)

Likewise, Kirby and Honeywood (2007) propose a clear and concise definition of entrepreneurship which revolves around the concept of opportunity. Accordingly, they advise:

Entrepreneurs are people who see opportunities and have the ability to harness the resources to bring them to fruition. In the process they take risk and bring about change.

(Kirby and Honeywood 2007, p.80)

In a similar way, Klein and Foss (2008) suggest that the concept of opportunity should be central in defining entrepreneurship and contend that:

Entrepreneurship is an activity that involves the discovery, evaluation, and exploitation of opportunities to introduce new goods and services, ways of organizing, markets, process, and raw materials through organizing efforts that previously had not existed.

(Klein and Foss 2008, p.146)

Furthermore, Aouni and Surlemont (2007) agree that the key to understanding entrepreneurship is the concept of opportunity. While Brush *et al.* (2003) share this view, they also contend that “entrepreneurship” includes the concept of “creation”.

Accordingly, they propose that entrepreneurship is:

...the behaviours of individuals as they identify and create opportunities leading to the growth of an organisation, and encompasses industry emergence, new venture team formation, wealth creation and organisational transformation.

(Brush *et al.* 2003, p.45)

Similarly, Gibb (2008) confirms that the term “creation” should be used in relation to understanding and defining entrepreneurship. He suggests that “...entrepreneurship is centrally concerned with the way that individuals and organizations...create and implement new ideas and ways of doing things” (Gibb 2008). As discussed earlier in this chapter, a number of contemporary theorists also suggest that “opportunity” and “creation” are key in understanding the term entrepreneur (Hisrich and Peters 1998; Allen 2003; Brush 2003; Kuratko 2005; Tounes 2007; Bygrave and Zacharakis 2008).

In the context of the present research, the current author draws on much of the above material. As with the aforementioned definition of the “entrepreneur”, the concept of

“entrepreneurship” is understood in terms of “creation” and “opportunity”, and in concurrence with the work of a number of scholars (Gartner 1989; Aouni and Surlemont 2007; Bygrave and Zacharakis 2008) is seen from the perspective and context of new venture creation. Furthermore, as Table 2.1 highlights, risk-taking has consistently featured in many definitions (Shapero 1975; Hisrich and Peters 1998; Cooper *et al.* 2004). Accordingly, for the purposes of this thesis, the author defines entrepreneurship as:

.....the process in which opportunities are identified, researched and exploited, appropriate risk is taken and organisations are created to pursue this activity.

The next section this chapter explores the major theme of this thesis, entrepreneurship education.

2.3 A Contextual Background to Entrepreneurship Education

Not unlike the term entrepreneurship outlined earlier, it is evident that entrepreneurship education can mean many different things to many different people. Hills (1988) believes that entrepreneurship represents the future of business education and is “a new venture in itself”. Similarly, Bygrave (1998) stresses the importance of entrepreneurship education in terms of:

The teaching of entrepreneurship is the liberal arts of business education. It challenges students to behave both as generalists and specialists, to be creators and creative problem solvers rather than dreamers, to reason conceptually but to implement pragmatically. There is no finer education in the management sciences.
(Bygrave 1998, p.14)

While concern has been expressed regarding the absence of a definitive definition of the term ‘entrepreneurship education’ (Fayolle and Gailly 2007), a number of

definitions have been proposed within the literature. For example, Kourilsky (1995) suggests that "true entrepreneurship" has three distinctive features (opportunity, resources and management) and entrepreneurship education should attempt to educate within each sphere. Consequently, it should include:

...the identification or recognition of opportunity and the generation of a business idea (service or product) to address the opportunity; the marshaling and commitment of resources in the face of risk to pursue the opportunity; and the creation of an operating business organisation to implement the opportunity-motivated business idea.

(Kourilsky 1995, p.15)

The United States lead Center for Entrepreneurial Leadership and Clearinghouse on Entrepreneurship Education (CELCEE), confirm these features in their definition of entrepreneurship education. They underline the core concepts of opportunity, resources and managerial prowess and advise:

... entrepreneurship education is the process of providing individuals with the concepts and skills to recognise opportunities that others have overlooked, and to have the insight and self-esteem to act where others have hesitated. It includes instruction in opportunity recognition, marshaling resources in the face of risk, and initiating a business venture. It also includes instruction in business management processes such as business planning, capital development, marketing, and cash flow analysis.

(CELCEE 1997)

More recent contributions seem to confirm this perspective. Hindle (2006) purports that entrepreneurship education involves the transfer of knowledge about opportunities and their discovery, evaluation and exploitation. Similarly, Jones (2007) stresses that:

Entrepreneurship education is the process of providing individuals with the ability to recognize opportunities and the insight, self-esteem, knowledge and skills to act on them.

(Jones 2007, p.405)

Like the earlier definitions of entrepreneurship education identified by Kourilsky (1995) and CELCEE (1997), Jones (2007) purports that entrepreneurship education should include opportunity recognition, the marshalling of resources and a distinct focus on traditional business management skills such as management, marketing, finance and information systems. This definition focuses on the process of knowledge and skills development and the building of individuals' entrepreneurial competencies to enable them to initiate and sustain enterprises. These issues are also highlighted by other contemporary entrepreneurship theorists such as Binks *et al.* 2006; Edwards and Muir 2007; Neck *et al.* 2007 and Jones *et al.* 2008. Furthermore, the European Commission (2008b) stresses that entrepreneurship education aims to develop entrepreneurial skills such as innovation, start-up and growth.

The definition of entrepreneurship education used for the purpose of this study draws on much of the aforementioned contributions. The author regards opportunity recognition and instruction on attracting sufficient resources as fundamental. The development of business management skills is also important. Accordingly, for the purposes of the present thesis, this author regards entrepreneurship education as:

A process in which there is a transfer of knowledge about business opportunities and their recognition, evaluation and exploitation. It involves the development of skills pertaining to the acquisition of resources and knowledge of appropriate business management areas such as marketing, finance, management and business planning.

The remainder of this section aims to examine the rationale behind entrepreneurship education and its growth, development and importance.

The dramatic growth in entrepreneurship education, already alluded to in Chapter 1 of this thesis, is summarized by this author within Table 2.2 below.

Table 2.2 The growth in entrepreneurship courses in the United States

Author	Year	Number of Courses
Kirby (2004)	1947	1
Klant/Volkman (2006)	1970	16
Binks <i>et al.</i> (2006)	1980	163
Katz (2008)	1985	586
Katz (2003)	1998	1400
Edelman <i>et al.</i> (2008)	2008	2200

Table 2.2 illustrates the growth in the number of courses in entrepreneurship within the United States, the year this was achieved and the author responsible for confirming this. It can be seen that the number of courses increased from one in 1947 (Harvard University) to over two thousand by 2008. As highlighted earlier, this growth is not restricted to North America, but has been experienced internationally (Béchar and Grégoire 2005). Possible reasons attributed to this development are outlined by Vesper and Gartner (1997) who advise that these include:

- A more positive public perception of the individual entrepreneur,
- An increase in the numbers of new start-ups,
- The advent of new and exciting sectors such as electronics and microcomputers which present opportunities to create new software firms.

Some of their observations are highlighted by more recent theorists. For example, Charney and Libecap (2003) advise that the growth in popularity of entrepreneurship education is partly explained through student demand and positive perceptions of

entrepreneurship as a career. This is supported by Jones (2007) who indicates that the unprecedented demand for entrepreneurship education is fuelled by a desire from students to obtain transferable skills needed within an increasingly complex and divergent business environment. Similarly, Gwyenne (2008) indicates that today's students are more attuned to "the increasingly rapid pace of changing market needs". Likewise, Cooper *et al.* (2004) suggest that public perceptions of entrepreneurship are strongly influenced by the media focus on high-profile celebrity entrepreneurs and explain that increased demand for entrepreneurship education emanates from a distinct realisation by students that many of them will work within "new" entrepreneurial concerns (large and small) on graduation. This perspective is further supported by Edelman *et al.* (2008).

Further reasons cited for the significant rise in demand for provisions in entrepreneurship education are economic and political. This perspective is primarily based on governmental realisation of the highly significant role played by entrepreneurship within the context of economic policy and growth. It is typified by the views of Hazlett *et al.* (2009) who suggest that:

...there is a broad consensus that entrepreneurship and more specifically entrepreneurship education are important means of addressing contemporary socio-economic and political challenges by encouraging entrepreneurial activity and stimulating economic development.

(Hazlett *et al.* 2009, p.238)

Cooper *et al.* (2004) further outlines the importance of entrepreneurship and explains that the British government is keen to encourage educational programmes that focus on raising awareness of the entrepreneurial sector and that help individuals identify

employment opportunities within small and medium sized enterprise (SME). Furthermore, Jones *et al.* (2008) confirm that entrepreneurship education is being developed in Europe against a background of increased governmental interest and importance accorded to entrepreneurship and economic development. Khan and Almoharby (2007) express a similar view and advise that over the past forty years there has been a growing awareness of the important social and economic roles of entrepreneurship within the developed and developing economies of the world. Jones (2006), for example, advises that entrepreneurship education is seen as a remedy against business failure and unemployment. A proposed linkage between the aforementioned rapid development of entrepreneurship education and the perceived importance of the entrepreneurial sector has also been highlighted by other contemporary scholars (Kirby 2004; Hannon 2005; Kuratko 2005; Heinonen and Poikkijoki 2006; Lourenco and Jones 2006; Luczkiw 2007; Edelman *et al.* 2008; Cooney and Murray 2008). The forward presented within the GEM Report (2008) by the Irish Minister for Enterprise, Trade and Employment (Mary Coughlan, T.D.) supports this. She states:

The establishment of new businesses can bring many benefits to the Irish economy ...entrepreneurship education or training has positive effects on individual's preparedness and their likelihood of becoming an entrepreneur...Given that starting and running a business is a complex undertaking, access to education and training is crucial. (Fitzsimons and O'Gorman, 2008, p.9)

Finally, Cooper *et al.* (2004) offer two further reasons for the rapid development of entrepreneurship education, namely contributions from the academic and business communities. They suggest that universities and colleges have developed entrepreneurship education as a response to dramatic developments in the world economy and the importance of providing students with the skills and knowledge to "contribute

positively to the activities of the total organisation spectrum, including large and small firms” (Cooper *et al.* 2004). Furthermore, they suggest that the business community has a significant interest in the development of entrepreneurship education. This, they suggest, is founded on a desire to employ graduates who have the skills and attitudes to work successfully within a small business environment and generate value from an early stage of their employment. The next section of this chapter looks at entrepreneurship education in more detail.

2.4 Understanding Entrepreneurship Education

There is often a degree of confusion between small business management and entrepreneurship courses (Jack and Anderson 2001; Kuratko 2005) and the terms entrepreneurship education and enterprise education (Gibb 1993; Birdthistle 2006). Each of these issues is explored below. The core differences between small business management and entrepreneurship courses are highlighted in Table 2.3.

Table 2.3 The differences between small business management courses and entrepreneurship Courses

Small Business Management	Entrepreneurship
Managerial skill Development	Originating/developing ventures
Leading	Developing business plans
Planning	Profitability
Organising	Growth
Controlling	Sellout options
Small business perspective	Creative options
Existing enterprises	

(Adapted from Solomon *et al.* 1994, p.340)

As Table 2.3 indicates, small business courses are focused around the managerial function and its application to small business contexts. Entrepreneurship education is based around the concepts of creation and opportunity and how they relate to the

entrepreneurial venture. The central role of the terms 'creation' and 'opportunity' in understanding entrepreneurship are discussed earlier in this chapter. Accordingly, Kuratko (2005) observes that a key focus within entrepreneurship education is business entry, a fundamentally different activity to the management of a small enterprise. This point of differentiation is shared by Solomon *et al.* (1994) who suggest that the traditional rationale behind small business management programmes have been to provide students with the managerial skills and know-how to effectively set goals and objectives, lead, plan, organise and control from the perspective of a small and existing enterprise. Entrepreneurship offerings, on the other hand, tend to concentrate on the activities involved in originating and developing new growth ventures and, according to Ronstadt (1985), seem to have as their main focus an action orientation primarily embodied in teaching students how to develop a business plan.

Jack and Anderson (2001) propose that a distinct tension often arises between small business management as a functional role and enterprise creation as a creative role. They point out that new business creation is inductive, requiring "leaps of perception" and the ability to see things in different ways. They acknowledge the limitations of the science of management education in addressing the unpredictability of entrepreneurship and entrepreneurial ventures and cite Ronstadt (1990) who states:

Entrepreneurship education should not be viewed as some mechanistic or technocratic process but as a holistic integrative process; entrepreneurship is not the sum of the functional subdivisions of modern business education.

(Ronstadt, 1990, p.79)

Likewise, Solomon *et al.* (1994), while acknowledging the similarities between small business management and entrepreneurship courses, observe that there are also conceptual differences which are often blurred. They believe that generally, small business management courses cover information on how to successfully manage a venture and include coverage of planning and organising, the selecting and leading of people, business operations, marketing and financial planning and control. On the other hand, entrepreneurship courses emphasise information in which the major objectives of the entrepreneur are profitability and growth. They conclude that entrepreneurs are usually seeking rapid growth, profitability and pursuing sellout options with resulting capital gains and entrepreneurship education initiatives reflect this.

The second area of clarification is the differences between entrepreneurship education and enterprise education. Gibb (1993) concludes that the term 'entrepreneurship education' is prevalent within the United States and suggests:

entrepreneurship education in the United States clearly has as its prime objective the creation of awareness, understanding of and motivation toward independent business ownership.

(Gibb, 1993:80)

Confusion seems to arise when the terms entrepreneurship education and enterprise education are used interchangeably. Gibb (1993) proposes that enterprise education is a term that labels the practice within British contexts and outlines that it is imperative to the ethos of enterprise education that every student has some degree of personal enterprise which can be further developed. He believes that it seeks to provide students with a "feel" for business and thus develop such things as perception, insight and perhaps, motivation towards entrepreneurship without directly addressing the

issue of self-employment or conventional business skills and knowledge. Erkkilä (2000) supports this perspective. She articulates the view that entrepreneurship education is best seen contextually and is more directly focused on enterprise and small business establishment, development and growth. Enterprise education, on the other hand, is aimed at the stimulation of enterprising behaviour, skills and attributes, which may be applied within any context, including one's personal career, leisure activities and family life. These enterprise skills are not exclusively for use in the world of business and entrepreneurship. Likewise, Birdthistle (2008) suggests that enterprise education aims to help young people develop skills that enable them to innovate and “identify, initiate and successfully manage personal and work opportunities, including working for themselves”.

Hannon (2005) observes that there has been much debate relating to the varying types of entrepreneurship education. Accordingly, he outlines a categorisation of the different approaches that underpin the majority of entrepreneurship education provisions. This categorisation includes education “about, for, or through entrepreneurship (Hannon 2005). Firstly, education *about* entrepreneurship involves the study of entrepreneurship as an academic endeavour. Falkang and Alberti (2000) suggest that these courses have an “outsider perspective on entrepreneurship, and students remain at a distance from the subject”. Students are exposed to the theoretical aspects of the discipline and the focus is on the transfer of information (Cooper *et al.* 2004; Edwards and Muir 2007; Mitchell and Chesteen 2007; Cooney and Murray 2008).

Secondly, education *for* entrepreneurship is about preparing students for an entrepreneurial career through the creation of a new venture. Its emphasis is on the development and practice of entrepreneurial skills and seeks to stimulate the entrepreneurial process (Co and Mitchell 2006). Cooney and Murray (2008) advise that this type of entrepreneurship education is aimed at aspiring entrepreneurs who wish to establish and run an entrepreneurial concern. Edelman *et al.* (2008) observe that in recent years there has been a shift of emphasis from educating *about* entrepreneurship to educating *for* it. This has been done in an effort to reduce “the academia vs. business incongruence” (Kuratko 2005). Finally, Hannon (2005) suggests that education *through* entrepreneurship attempts to teach entrepreneurship through other subjects. This approach, he explains, has been applied within primary and secondary schools but is not prevalent within higher education institutions.

In conclusion, as misconceptions often arise between small business management and entrepreneurship, and the terms “enterprise education” and “entrepreneurship education”, it is important to fully understand the precise nuances and emphasis of each. Furthermore, entrepreneurship education is not a homogeneous discipline, and the aforementioned classification (about, for and through) provides a useful template for appreciating the differing contexts and modalities utilised within the varying approaches. The objectives of entrepreneurship education are explored below.

2.4.1 The Objectives of Entrepreneurship Education

There has been a degree of confusion as to the fundamental objectives and purpose of entrepreneurship education initiatives (Hannon *et al.* 2005). It seems that objectives

are many and varied but are condensed in the work of Block and Stumpf (1992) who include the following core issues and dimensions:

- The acquirement of knowledge of concepts germane to entrepreneurship
- Acquiring skills which enable students analyse business situations/change
- Identifying and stimulating entrepreneurial drive, talent and skill
- Undoing the risk-averse bias of many analytical techniques
- To develop empathy for the unique aspects of entrepreneurship

Accordingly, the objectives of entrepreneurship education can be seen in terms of developing in students the necessary entrepreneurial skills, knowledge, attitudes, values and empathy. This is endorsed by Johansen (2007) who argues that entrepreneurship education has three primary objectives and:

...is meant to develop...entrepreneurial competencies, i.e. their (a) personal abilities (general entrepreneurial abilities); (b) knowledge/skills on how to establish and run an enterprise (specific entrepreneurial abilities); and (c) attitudes towards entrepreneurship (be aware/desire to choose a career as self employed).

(Johansen 2007, p.1)

The broader view of entrepreneurship education and its potential contribution to the development of individual's entrepreneurial attitudes and personal qualities, is also highlighted by Fayolle and Gailly (2007). Furthermore, Vijay and Ball (2007) outline that entrepreneurship education seeks to prepare people to be enterprising individuals who become either entrepreneurs or entrepreneurial thinkers who contribute to economic development and the sustainability of communities. In this regard, Hill *et al.* (1997) and Cooney and Murray (2008) suggest that these objectives should be considered not just within the context of conventional entrepreneurship but are also

equally applicable to the development of entrepreneurial skills in those who work as employees within an existing entrepreneurial organization (intrapreneurship). This perspective is confirmed by Kent (1990) who highlights three major levels of objectives which seem uniform to programmes:

1. Awareness of entrepreneurship
2. Identifying the possibility of becoming an entrepreneur
3. Acquiring qualities and motivation to pursue entrepreneurship

Firstly, the awareness of entrepreneurship includes introducing students to its importance at the various economic levels, local, national and international. It also features the concepts of entrepreneurship and the start-up and growth lead organisation, profit and not for profit entrepreneurship as well as the process of intrapreneurship (entrepreneurial employees). Heinonen and Poikkijoki (2006) and Jones et al. (2008) stress that a core objective of entrepreneurship education is to increase student's appreciation, understanding and awareness of entrepreneurship.

The second objective of entrepreneurship education is the student identifying the possibility of becoming an entrepreneur. This includes idea generation, recognizing opportunities, conducting feasibility studies and identifying various business entry strategies (Jones 2007). The final objective of entrepreneurship education is the development of skills and motivation to follow an entrepreneurial career. These skills are developed at a technical, business and personal level (Hisrich and Peters, 1998) through the acquisition of knowledge and its application at a practical level.

This view is shared with Neck et al. (2007) who suggests that the key objectives of entrepreneurship education are the development of the skills of entrepreneurship and an understanding of the entrepreneurial role and mindset. This, they conclude, is best achieved through learning within an entrepreneurial environment. Furthermore, the European Commission (2008a) advise that the development of personal and business skills and knowledge are an important aspect of entrepreneurship education.

These observations are confirmed by Tounes (2007) who outlines the objectives of entrepreneurship education in terms increasing awareness, opportunity and desire to start a venture and providing the necessary skills for venture start-up and growth. Furthermore, Hill *et al.* (1997) indicate that often a primary objective of courses is to 'sow the seed' of entrepreneurship, so that, after appropriate work experience, graduates would be motivated to form a new business venture.

They suggest another objective is to promote innovative problem solving to make graduates more enterprising within their work, whether in an established firm, a new venture or as an employee within the public service. This aim of entrepreneurship education is further highlighted by Boocock et al. (2009).

In summary, the literature indicates a diverse range of fundamental objectives, which are associated with entrepreneurship education. These are highlighted in Table 2.4 below.

Table 2.4 The objectives of entrepreneurship education

Stressing the importance and role of entrepreneurship
Identifying/developing entrepreneurial skills/knowledge
Practicing skills in an entrepreneurial context
Business plan development
Highlighting the role of risk and change
Developing entrepreneurial empathy
Introducing the possibility of entrepreneurial/intrapreneurial careers

2.4.2 Can Entrepreneurship be taught?

This section examines what is probably one of the most basic and frequently cited questions within the academic discipline, i.e., whether or not entrepreneurship can be taught. Even though the increased adoption of college and university-based entrepreneurship education is well documented within the literature (Brush *et al.* 2003; Solomon and Fernald 2003; Kuratko 2005; Hindle 2006, Fayolle and Gailly 2007; Vijay and Ball 2007), the question still arises periodically, can entrepreneurship be promoted, fostered and developed through education? (Hynes 1996; Henry et al. 2005; Kirby and Honeywood 2007; Pittaway and Cope 2007; Cooney and Murray 2008). McMullan and Vesper (2000) point out that there is growing evidence that when people complete entrepreneurship education programmes, they tend to be more inclined to do entrepreneurial things, and sometimes even become more effective as entrepreneurs. They cite research contributions by, among others, Gartner and Vesper (1994) and McMullan and Gillin (1998) that confirm this. Furthermore, recent work

by Klandt and Volkmann (2006) and Boocock et al. (2009) indicate that the skills relevant to successful entrepreneurship can indeed be taught.

However, there is a degree of consensus that definitive research on whether entrepreneurship can be taught is limited to a relatively small number of studies. Bechard and Toulouse (1991) and Hynes (1996) stress that the central research question in entrepreneurship research is the extent to which entrepreneurial action is the result of definitive personality traits or the fruits of knowledge and skills which can be developed through education. Katz (1991) and Izquierdo and Buyens (2008) also stress the lack of research on the topic. There are also a number of prominent scholars who indicate that it is possible to teach entrepreneurship. For example, Bygrave (1994) suggests emphatically that entrepreneurship can be taught while Gibb (1993) points out that every student has some degree of enterprise skills. Erkkilä (2000) and Hill and Ó Cinnéide (2001) refer to work completed by Vesper (1990) who surveyed business school professors in the United States, 93% of whom indicated entrepreneurship can be taught.

Likewise, Clarke et al. (1984) indicate that the teaching of entrepreneurship does in fact aid new business creation and success. The single course evaluated in their research deliberations seemed to affect, in a positive fashion, student attitudes and behaviors towards new venture formation. An interesting finding from their work was that the new ventures created by those who had experienced entrepreneurship education appeared to demonstrate high levels of success in terms of sales revenue and new jobs.

Similarly, Fleming (1996) studied the effect of the annual Student Enterprise Award in Ireland. This initiative was designed to encourage students to develop business ideas and subsequently write comprehensive business plans, in the effort of making self-employment a more realistic career choice for participating students. The results in 1994 indicated that 5% of survey respondents had started their own businesses compared to 2.5%, in a control group, who had started their own ventures but who had not participated in the programme. Two years later, Fleming (1996) reported that the number of respondents in self-employment had increased to 14.5% over the intervening period. Finally, in a 3rd wave of the study, Fleming and Owusu-Ansah (2001) indicate this figure had increased to 28.4% four years later. Furthermore, the recent Irish GEM 2008 (Fitzsimons and O’Gorman 2008) suggests that entrepreneurship education or training has positive effects on an individual’s preparedness and likelihood of becoming an entrepreneur.

A number of other writers and researchers agree that education has a role in the stimulation of entrepreneurship. Kuratko (2005) advises that it is becoming clear that entrepreneurship, or certain facets of it, can be taught and, accordingly, proceeds to clearly state that “the question of whether entrepreneurship can be taught is obsolete”. This view is shared by Edwards and Muir (2007). Within the same contribution, Kuratko (2005) cites work by Drucker (1985) indicating that entrepreneurship is a process that can be learned by individuals and hence is teachable. Other contemporary theorists express a similar perspective (Menzies 2004; Edwards and Muir 2006; Jones 2007). Furthermore, Gorman *et al.* (1997) having conducted a 10 year literature review of entrepreneurship education conclude that “most of the empirical studies

surveyed indicated that entrepreneurship can be taught, or at least encouraged, by entrepreneurship education”.

Likewise, Fayolle and Gailly (2007) argue convincingly that there is no doubt that it is possible to educate people in entrepreneurship. They advise that those who hold the belief that it is not possible to teach entrepreneurship do so because of their conviction that entrepreneurship is a matter of personality and psychological characteristics. However Fayolle and Gailly (2007) conclude that this is true for many professions and professional situations. A similar perspective is robustly articulated by Hindle (2006). He states that teaching entrepreneurship:

...embraces the vocational area of entrepreneurship: the practical components of a very applied area of knowledge. Just as medicine, or engineering, or law, or professional management has a vocational (as well as theoretical and societal) component, so does entrepreneurship.

(Hindle 2006, p.139)

Hindle (2006) suggests that those who believe that entrepreneurs are born and not made are unlikely to assert this in relation to, for example, doctors or engineers or that the vocational skills of these professions cannot be taught.

Other theorists articulate a somewhat more conservative view and indicate that the extent to which entrepreneurship is teachable is a matter of debate among scholars (Hynes 1996; Fiet 2000; Jones and English 2004). For example, Jack and Anderson (2001) view effective entrepreneurship education as an amalgam of both science and art. The science aspect of entrepreneurship is largely seen as functional small business management that can be taught through conventional pedagogy. They refer to work by Gartner and Vesper (1994) who indicate that students enrolled in university entrepreneurship courses often lack basic business knowledge and entrepreneurial

experience and exposure to areas such as financial management, marketing and information systems are of great importance.

Jack and Anderson (2001) suggest the art (imagination, innovation and creativity) involved in entrepreneurship does not appear to be so amenable to being taught. They outline that entrepreneurship educators must accept they cannot directly provide or teach these range of skills because they are fundamentally experiential, and advise that one suggestion of how to overcome this might be the introduction of student work experience within the context of the entrepreneurial venture and to actually learn by doing. Likewise, Heinonen and Poikkijoki (2006) advise that entrepreneurship education involved both art and science and necessitates a learning environment as close to “real life” as possible. Accordingly, they suggest a large element of experience and active participation within entrepreneurship education. This view is shared by a number of scholars (Block and Stumpf, 1992; Gibb 1993; Hindle 2006 Edwards and Muir 2007; Jones and English 2007; Cooney and Murray 2008)

While there is a perceived lack of research that definitively ascertains whether entrepreneurship is teachable, there does seem to be growing evidence that entrepreneurship education results in positive outcomes. Consequently, Kuratko (2005) alludes to the suggestion that the debate has moved on, and the question as to whether one can teach entrepreneurship is no longer core. However, recent work by Izquierdo and Buyens (2008) questions this. They concede that while it may be believed entrepreneurship (or certain features of it) can be taught, the debate remains ongoing due to a lack of research into the outcomes and effectiveness of provisions. The remaining part of this chapter explores the impact of entrepreneurship education.

2.5 Entrepreneurship Education – Its Impact and Outcomes

The realisation of an acute need for the evaluation of entrepreneurship education programmes has been highlighted by many scholars (Leitch and Harrison 2001; Fleming 1999; Menzies and Paradi 2003; Co and Mitchell 2006; Klandt and Volkmann 2006; Pittaway and Cope 2007; Cooney and Murray 2008; The European Commission 2008b; Gibb 2008; Izquierdo and Buyens 2008; Nabi and Holden 2008). Menzies and Paradi (2003), while acknowledging the substantial growth in entrepreneurship education, observe that only a few studies explore perceived outcomes associated with programmes. They contend:

Unfortunately, there is a distinct lack of research into the perceived outcomes associated with entrepreneurship education. The authors could find few studies in the literature that looked at entrepreneurship education and graduates propensity to venture.

(Menzies and Paradi 2003, p.122)

It is this research gap within the literature that the present study explores. Other theorists have alluded to this research deficit. For example, Matlay (2005) refers to the growth in entrepreneurship education but stresses that the contribution and impact of these provisions remains unclear to even the entrepreneurship educators that deliver them. Likewise, Hazlett *et al.* (2009) refer to the “rather tenuous” evidence associated with the outcomes of entrepreneurship education. Earlier work by Hill and Ó Cinnéide (2001) suggests that only a few studies have investigated the effects of entrepreneurship education and that much of this work has tended to focus on a particular programme and its immediate outcomes. This perspective is supported by other theorists. For example, Falkang and Alberti (2000) Cooney and Murray (2008), and Izquierdo and Buyens (2008) note that much of research on the impact of entrepreneurship education tends to examine specific courses and programmes which

results in the “obvious problem of generalization” (Falkang and Alberti 2000). Furthermore, the importance of exploring entrepreneurship education outcomes over the long-term in an effort to ascertain actual entrepreneurial activity is widely acknowledged within the literature (Chapman and Skinner 2006; Pittaway and Cope 2007; Souitaris *et al.* 2007; Gibb 2008; Hegarty and Jones 2008; Jones *et al.* 2008). In this regard, Falkang and Alberti (2000) further contend:

The short-term output of entrepreneurship education might be the level of student enrolment...the demand for additional courses, etc. Not so easy is the assessment of the long-term effectiveness of entrepreneurship education. Investigations into the number of start-ups, students who start businesses....all require a period of at least five years.

(Falkang and Alberti 2000, p.104-105)

Falkang and Alberti (2000) confirm that most of the research to date has tended to focus on short-term measures of effectiveness while longer-term research designs (with control groups) are still lacking. Matlay (2005) observe that most of the empirical studies in the field tend to focus on samples of respondents with an existing predisposition towards entrepreneurship. Accordingly, he strongly argues that by not employing a control group of students without exposure to entrepreneurship education, these researchers risk biasing their results in favour of entrepreneurship education. This perspective is shared by Block and Stumpf (1992) who contend that the selection of clear and appropriate control groups are crucial to the understanding of the effectiveness of entrepreneurship education. They propose that appropriate groups for research into the effectiveness of entrepreneurship education might include individuals who have no entrepreneurship education at all, no business education at all, or non-MBA students. They suggest that these groups might be compared to MBA graduates who have had exposure to entrepreneurship courses. The present research

explores the outcomes of entrepreneurship education through examining a sample group of MBA graduates in Ireland who have had no entrepreneurship education as part of their programme. This group is compared to graduates who have taken entrepreneurship modules as part of their MBA.

The difficulty in isolating and quantifying the effectiveness of entrepreneurship education is highlighted in the literature (Binks *et al.* 2006). Importantly, Block and Stumpf (1992) define effectiveness as the extent to which objectives are met, and objectives may differ for each of the audiences that have interest in entrepreneurship. For example, fundamental measures of effectiveness include student acceptance, number of business start-ups, their survival and success record, their contribution to the economy and the degree of satisfaction of the graduate with their career. These criteria, it is contended, must then be compared to other individuals who have not had any formal entrepreneurship education experience. Block and Stumpf (1992) further recommend a number of research propositions, which, they believe, will significantly contribute to an understanding of entrepreneurship and its outcomes. Scenarios warranting investigation include whether MBAs, who have taken entrepreneurship as part of their programme, start more businesses, which survive better when compared to the efforts of graduates with no exposure to entrepreneurship.

Another proposition put forward for future research deliberation by Block and Stumpf (1992) is whether graduates of entrepreneurship create start-ups that are significantly larger and more profitable enterprises than those of graduates with no entrepreneurship education and whether non-exposure to entrepreneurship will reduce the desire of graduates to become entrepreneurs. These propositions have influenced

the research hypotheses developed for the present work and are further explored in Chapter 3.

Other theorists have outlined possible measures for entrepreneurship education. For example, McMullan and Gillin (1998) suggest that the outcomes of entrepreneurship education can be best viewed at three different levels, economic, individual and programme specific. Firstly, economic success includes the likelihood of graduates starting a business, early indications of business size (employment, sales, choice of industry) and indications of growth and success over time. Secondly, they advise individual success might be measured in terms of earnings and non-tangible gains such as enhanced job satisfaction. Ideally, they suggest, there would be evidence available to distinguish what people do with exposure to entrepreneurship education and what people do without. Furthermore, when comparing the results of different programmes, adjustments can be made for the favourableness of student backgrounds for starting ventures:

..all things being equal, one would expect a higher rate of start-up and ultimate success from Harvard or Babson graduates than from Calgary or Swinburne graduates because the former two groups are favoured with parents with more connections, money, and appropriate knowledge and skills.

(McMullan and Gillin, 1998:276)

The McMullan and Gillin (1998) study involved three different institutions with comparable student bodies who were without special advantages and, therefore, “roughly comparable” despite the fact that one is in Canada and two are in Australia. Finally, McMullan and Gillin (1998) contend that a third measure is actual programme success in terms of numbers of students and knowledge being generated. In later work, McMullan and Gillin (2001) further confirm the importance of

effectiveness measurement with regard to entrepreneurship education and training programmes and suggest that three dimensions can be used against which such initiatives can be evaluated. These are:

- Subjective assessments of satisfaction
- Attributions of the impact programmes on subsequent performance
- Objective measures of effectiveness

Subjective measures of effectiveness attempt to indicate participant levels of satisfaction with the programme undertaken. In the case of entrepreneurship education, this measure includes assessing graduate satisfaction ratings with the course content, delivery methods and assessment methodologies used. McMullan *et al.* (2001) indicate that subjective ratings have been used in the evaluation of a number of entrepreneurship programmes. Perceptions of performance improvements attributable (attributions) to entrepreneurship education and training represent a second measure of effectiveness. McMullan *et al.* (1986) studied clients' attributions of performance subsequent to them taking an entrepreneurship training programme. The dimensions of value attributable to the course and assessed by participants included:

- Time gained/saved in advancing their new venture
- Knowledge/information gained of new venture development
- Contacts made in support of their new venture
- Strategic changes made
- Overall value of the experience

Later work into the effectiveness of entrepreneurship and training have also used attributions with other measures. For example, research by Nahavavdi and Chesteen (1988) explores subjective measures along with attributions while Chrisman (1997) uses participants' attributions of performance in concert with objective measures of performance such as growth levels achieved.

Finally, objective measures of effectiveness include such tangibles as growth in sales, employment, profits and market share. A number of studies have used these measures (Clark *et al.* 1984; Gillin *et al.* 1996). However, Storey (2000) observes that evidence of growth, without control group comparisons, does not provide a convincing case for economic impact. McMullan *et al.* (2001) conclude that subjective programme evaluation measures of satisfaction and effectiveness are relatively straightforward to implement and reveal important feedback from participants. However, the key premise of their work is that the best methods of programme evaluation are those that directly relate programme outcomes to programme objectives. This perspective is endorsed by Storey (2000). McMullan *et al.* (2001) contend that the objectives of entrepreneurship assistance programmes are primarily economic and as such, subjective measures of participant satisfaction, while important, are limited in this regard. Accordingly, they recommend subjective measures used along with objective and attribution measures. They advise:

While using business performance indicators to evaluate programme impact raises difficult questions of cause and effect, they do measure the outcomes.....Our analysis also suggests that attribution measures that focus on specific outcomes, used in concert with objective performance measures, may be useful for strengthening an argument of a causal linkage between assistance and performance.

(McMullan *et al.* 2001, p.51)

The present research attempts to explore all three measures of effectiveness outlined by McMullan et al. (2001). The in-depth interviews for example, (outlined and explained in Chapter 3) firstly seek to examine the subjective feedback of MBA graduates who have taken entrepreneurship course/s as part of their programme and have pursued entrepreneurial careers. Secondly, the in-depth interviews explore perceptions of performance improvements attributable (attributions) to entrepreneurship education. These are examined through exploring the useful information graduates believe they gained and the overall value of the course/s in terms of starting and growing their entrepreneurial venture. Finally, both the questionnaire and in-depth interviews seek to highlight objective measures of effectiveness in terms of growth levels such as sales, employment and profitability levels.

There has also been academic debate on whether measurement of the outcomes of entrepreneurship should be quantitative or qualitative in nature. Henry and Hill (1999) point out that within the evaluative studies conducted on entrepreneurship programmes, there is a clear focus on quantitative analysis, with the number of new business established and the number of new jobs created being the primary evaluative measure used. This is confirmed by the European Commission (2008b) who advise that appropriate quantitative measures of the outcomes of entrepreneurship education include; number of start-ups; number of jobs created; quality of employment of students and entrepreneurial intention. They support the view that quantitative measures of outcomes should encompass those who have taken entrepreneurship education and those with no such exposure. They explain that qualitative measures should include such things as measuring participant's degree of career satisfaction or

exploring the extent of entrepreneurial intent of graduates. Furthermore, Cooney and Murray (2008) advise that while studies into the outcomes of entrepreneurship education generate elements of quantitative and qualitative data, “but with little commonality, it is difficult to undertake comparative analysis” (Cooney and Murray 2008). Pittaway and Hannon (2007) support this. They contend that there are variations in what is considered to be an impact of entrepreneurship education. Accordingly, they observe;

....some seek changes in behaviour, others changes in awareness and knowledge, while other people prefer tangible outputs, such as, actual venture creation amongst graduates. (Pittaway and Hannon 2007, p.3)

Pittaway and Hannon (2007) stress that even within the same institution, there is likely to be significant variations in perceptions about the impact of entrepreneurship education. They conclude the important thing is that there is an appropriate impact, which is valued both at institutional and societal levels. The remainder of this chapter explores studies into the outcomes of entrepreneurship education.

2.5.1 Research on the Impact of Entrepreneurship Education/ Training

While the apparent absence of research into the impact of entrepreneurship education and training is alluded to earlier in this chapter, there are a number of studies that attempt to assess its impact. A note on a number of these is included in the remainder of this section and a summary presented within Table 2.5 below.

Table 2.5 Studies on the Impact of entrepreneurship education/training

Year	Country	Author	Sample	Response %	Start-up %
1984	USA	Clark <i>et al.</i>	1265	68.2	10.2
1989	USA	Wyckham	73	100	79
1989	Ireland	Caird	72	36	N/A
1990	UK	Brown	214	100	92
1991	Canada	Garnier <i>et al.</i>	425	17.6	12
1994	Australia	Gillen and Powe	300	60	8.6
1995	USA	Monroe <i>et al.</i>	576	26	40
1996	Canada	Gillen <i>et al.</i>	N/A	N/A	25 (num)
1997	Norway	Kolvereid and Moen	720	51.8	N/A
1998	Australia	McMullan/Gillin	N/A	N/A	13(Num)
1999	Holland	Holland	N/A	N/A	80
2001	Ireland	Owuzu-Ansah /Fleming	419	N/A	28.4
2002	USA	Hindle and Cutting	138	66(and 23)	N/A
2003	Canada	Menzies/Paradi	N/A	N/A	48
2008	Poland	Jones <i>et al.</i>	N/A	N/A	Intent

Table 2.5 commences with the work Clark *et al.* (1984). They present a comprehensive study into North American undergraduate students who had taken an entrepreneurship course between 1978 and 1982. Data was collected via mail questionnaire and those who had started ventures were subsequently interviewed by telephone. In total, 10.2% of graduates started businesses subsequent to course completion. The results of this survey indicate that 75% of those who started ventures claim the entrepreneurship course had a large or very large impact on their decision to venture. The economic impact of these enterprises included combined sales levels of \$13,450,000 with an accompanying 371 full-time and 442 part-time jobs. Clark *et al.* (1984) propose:

The statistics presented here or elsewhere cannot demonstrate cause and effect, nor can any single measure clearly show the significance of relationships, but the data presented here lend substance to a prima facie claim that a relationship exists between entrepreneurial education and new venture creation.

(Clark *et al.* 1984, p.30)

The Clark *et al.* (1984) research is important and indeed somewhat pioneering in nature. Their results demonstrate that there is a relationship between entrepreneurship education and venture start-up. However, it should be noted that this study only included graduates over a limited time period (1978-1982). The literature stresses the importance of studies that cover more time subsequent to graduation (Garavan and Ó Cinnéide 1994; Menzies and Paradi 2003; Chapman and Skinner 2006; Pittaway and Cope 2007; Souitaric *et al.* 2007; Gibb 2008; Hegarty and Jones 2008; Jones *et al.* 2008). Secondly, the Clark *et al.* (1984) contribution involves graduates from one university. This makes wider generalisations more difficult (Falkang and Alberti 2000).

Similar findings are reported by Wyckham (1989) who studied the ventures launched by graduates of Simon Fraser University's New Enterprise Programme in the United States. Included in the research sample were 73 individuals who had graduated one year or more. Graduates were sent questionnaires by mail and then telephoned for their responses. An impressive 58 started ventures with 338 new jobs and economic value added of \$10.8 million. Interestingly, Wyckham (1989) indicates that those who started ventures made better entrepreneurial decisions because of the feasibility analysis and business planning aspects of the programme. Furthermore, he contends that 18% of participants who had graduated at least six months, determined their project was unfeasible. In other words, it appears that the entrepreneurship education process influenced their decision to launch. Later work by Wyckham and Wedley (1990) reveals that eight out of ten of the same participants said the programme helped them determine the feasibility of their ventures. While the results of this study

are impressive their sample size of 73 is small. The fact that the sample only included graduates from one university also limits the findings.

Caird (1989) conducted a comprehensive research investigation into the impact of an Irish enterprise training course aimed at helping people set up and run businesses. The results suggest that participants on courses perceive themselves to be more entrepreneurial following entrepreneurship training. However, it is important to note that this is a study of participant attitudes and not objective facts. Accordingly, it is not clear if participants have objectively become more entrepreneurial and whether this will manifest itself through entrepreneurial action.

Garnier et al. (1991) conducted some pioneering research into the evaluation of a television course in entrepreneurship. The impact of this television series and the accompanying book, classroom sessions and exercises, seems to confirm some of the findings highlighted above. A total of 75 individuals who had registered for the course completed questionnaires via telephone one year after its completion. Almost one third of respondents had started a new venture, developed an existing enterprise or were in the advanced stages of business plan preparation. A further 40% of course participants were actively pursuing a business opportunity. In terms of tangible economic impact, the course contributed to nine new ventures being launched with 20 employees and turnover exceeding \$1,304,000. However, Garnier *et al.* (1991) highlight a number of limitations pertaining to their work. These include:

- The study was carried out only one year after participants started the course

- The sample taken for the research was from one region (Canada)
- Data was gathered through questionnaires (limits observation of real phenomena)
- Comparing results is difficult as there are no other impact studies of TV courses
- The results are based exclusively on the subjective perceptions of participants

A somewhat different research perspective is adapted in the work of Brown (1990). He attempted to determine the impact of the Graduate Enterprise Programme (GEP) in the United Kingdom. In doing so, he examined two issues. Firstly, whether graduate entrepreneurs would have started their ventures without the support of the GEP. Secondly, if failure to be selected for the GEP reduced the numbers of business start-ups. In terms of whether graduates would have started their ventures without the GEP, Brown (1990) indicates that during selection workshops for GEP 3 in March/April 1987, 214 applicants completed questionnaires concerning starting their business. Only one out of ten indicated that their interest in starting a business derived from the GDP programme itself. However of the remaining nine, one-half indicated it had not been their intention to venture immediately after graduation. Brown (1990) suggests that programme participants owe their start-up, or more importantly, the timing of their venturing, to the encouragement of the GEP. He concludes:

The GEP programme, therefore, has provided an incentive for young people to accelerate and bring forward the timing of their projected business start-up.

(Brown 1990, p.75)

The second question proposed by Brown (1990) is whether failure to be selected on the GEP reduced the number of businesses started. Interestingly, 92% of the 214

participants indicated during the selection process that they would start their ventures regardless of whether they gained a place on the programme. Brown (1990) observes that in a further study of unsuccessful graduate applicants of GEP 1 and GEP 2 (N=19), 18 respondents intended to commence start-up regardless of a place on the programme, but only six of the nineteen actually did so. He observes that the GEP has to accept that they have reduced or at least delayed some potential business start-ups and contends:

Further research is, nonetheless, required into comparing the elements and outcomes of similar programmes in the U.S.A. and elsewhere.

(Brown 1990, p.6)

Further research into the outcomes of entrepreneurship education is highlighted by Gillen and Powe (1994). Their questionnaire survey to 300 current and past students at Swinburne University of Technology, Australia, attracted a response rate of 60%. The aim of the study was to test the notion that students who participated in entrepreneurship courses actually produced tangible outcomes. The number of new businesses, increases in sales turnover attributed to learned skills and incidence of career change from course participation, growing ventures within an organization and the strengths and weaknesses of the course as perceived by graduates is reported. Overall, some 26 new businesses have been started and increased company sales of \$60 million (1991/1993 financial years) are attributed to programme participation from graduates employed in 22 companies. Graduates stressed the importance of group activities networking, and curricula that integrate knowledge-based and experiential-based methods.

Gillen *et al.* (1996) further built on this research agenda by comparing returns on investment of the entrepreneurial MBA programmes at the Swinburne University of Technology, Australia, and the University of Calgary, Canada. A questionnaire was mailed to all the programmes graduates from 1993 to 1995. Impressively, 87% of Swinburne respondents contributed to wealth-creation activities as a direct result of the knowledge and skills acquired on the programme. Activities ranged from 25 new start-up businesses to 55 innovative projects in existing businesses. It seems 236 new jobs were created in Australia, with a cost per job of \$7000, a figure Gillen *et al.* (1996) claims is low compared to most government job-creation schemes. Furthermore, 87% of Australian respondents agreed or strongly agreed the programme gave them the courage and ability to develop new areas in their work. In the Calgary programme, 37% of graduates from the entrepreneurial MBA contributed to new wealth creation activities with 13 involved in new start-ups.

McMullan and Gillin (1998) built on this work and looked at the impact of MBA programmes with varying amounts of entrepreneurship education. The MBA programmes they examined in both Australia and Canada seem to indicate that those graduates who concentrate in entrepreneurship have a significantly higher venture propensity rate than those graduates with no exposure or limited exposure to entrepreneurship education. Their results indicate that within the University of Calgary, 14% of graduates who undertook the MBA concentration in entrepreneurship ventured (survey participant's involved MBA graduates from the previous 18 years). This programme only offered a few entrepreneurship courses to students. However, once the Enterprise Management MBA was introduced, this figure had increased to a remarkable 38% of graduates (8 months after graduation) who

ventured. Similar findings are reported in the Australian programmes. At an unnamed Australian University, 18% of MBA graduates who had no exposure to entrepreneurship courses ventured within one year whereas, the Entrepreneurship MBA at Swinburne University of Technology reports that 87% of its graduates started ventures within two months to two years subsequent to graduating graduation. The authors conclude:

..students in entrepreneurship degree programmes start new companies or initiate corporate ventures at much greater rates than comparison groups of students without entrepreneurship courses or students with only a few courses as part of an MBA.
(McMullan and Gillin 1998, p.282)

Yet another aspect of the relative effectiveness of entrepreneurship education and training is considered by Monroe *et al.* (1995) who explored the venture propensity of displaced workers in the U.S.A. subsequent to them taking entrepreneurship training courses. One such programme in Kansas City, resulted in 70% of participants (n=34) starting business. Results of another group (n=28) indicated ten new businesses. One year on, eight of the new businesses were successful with combined gross sales increasing from \$408,000 to \$1, 298,000, an enormous increase of 218%. Full-time employment grew from 12 to 23 people, an increase of some 92%. Monroe (1995) puts forward the view that the entrepreneurs who were ultimately successful with their entrepreneurial ventures (1995) were the ones with comparatively more education, training and experience. He concludes that “it was obvious that displaced workers who, with significant prior education, training and experience...had a much higher success rate” (Monroe *et al.* 1995, p.9).

More impressive results are reported in a further study presented by Upton *et al.* (1995). A mail survey was conducted on 576 graduates who received a Bachelor of

Business Administration (BBA) in Entrepreneurship between 1981 and 1994. Their work, based on 150 respondents, indicates that about 40% of graduates had started their own firms. Furthermore, about 30% have joined their family business and the remaining 30% work for existing corporations. A somewhat similar study was conducted by Kolvereid and Moen (1997). They looked at the effectiveness of entrepreneurship education through a comprehensive examination of graduates of the Master of Science in Business programme within the Bodo Graduate School of Business, Norway. Acknowledging the absence of research within this area, their work explores two major questions. Firstly, whether graduates who have majored in entrepreneurship are more entrepreneurial than other business graduates and secondly, whether graduates who have majored in entrepreneurship hold stronger entrepreneurial intentions than other business graduates. They sent a mail questionnaire to all graduates who took the Masters programme between 1987 and 1994, a total of 720 alumni. They achieved a response rate of 51.8%.

Their work strongly suggests that exposure to entrepreneurship is positively associated with new business formation. They also establish a positive association between entrepreneurship education and entrepreneurial intentions. They suggest:

The results presented here give some justification to the emphasis placed on entrepreneurship education in many universities and business schools. The findings suggest that entrepreneurship, at least to some extent, is a function of factors which can be altered through education.

(Kolvereid and Moen 1997, p.159)

Further work by Chrisman (1997) studies the economic effectiveness of a venture development programme at the University of Calgary. An interesting aspect of this

programme is the active interaction of students on the Enterprise MBA with local client firms. Students conduct projects specific to the needs of these enterprises in areas such as opportunity analysis, market research, market or product feasibility, product design, and business and financial planning. The programme also offers client firms a range of workshops, forums and legal clinics. Of the 171 questionnaire respondents, almost 60% of firms contended the programme was either vital to success, had an important positive impact or positive impact on their businesses. After adjusting for the average growth rates of businesses in Alberta over the relevant period (1990-1994), this research estimates an incremental growth rate of 10.7% and 2.91 jobs per firm. After further adjusting this figure by the perceived impact of the programme, Chrisman (1997) contends approximately 1.23 new jobs per firm were created that might be directly attributable to the programme. However, like some of the other studies outlined above, the time period examined is somewhat short (4 years) and the sample chosen is from one institution.

Henry and Hill (1999) present findings on the effectiveness of three entrepreneurship training programmes; the TOP programme in the Netherlands, the SPINNO programme in Finland and the IDEAS programme in Spain. The methodology used combined programme literature and documentary reports with a questionnaire survey which was administered to one of the groups (TOP). The researchers observed that the literature indicates 42% of the participants on SPINNO and 12% of the IDEAS participants started ventures while an impressive 80% of participants on the TOP programme ventured subsequent to completing the programme. The number of jobs created included 96 by TOP, 100 by SPINNO and 72 by IDEAS on an annual basis. The survey administered to TOP participants revealed that the majority of participants

took the programme for finance, business support and access to university facilities. Interestingly, 93% of participants indicate that their original expectations had been met.

Similarly impressive findings are reported by Lopes (1999). She conducted a study of EMPRETEC, a training programme for aspiring and existing entrepreneurs in Sao Paulo, Brazil. Her work indicated that 33% of participants ventured or were in the advanced stages of venturing six to seven months after the programme. It seems that 50% also indicated a perceived change in their behaviour, while 62% of existing entrepreneurs reported increased gross sales despite declining economic indicators for the city and state of Sao Paulo.

Owuzu-Ansah and Fleming (2001) outline the results of their comprehensive work into the impact of entrepreneurship education on the business venturing of Irish graduates. This study represents the third wave of a longitudinal study which reports the effect of entrepreneurship education on graduates' career decisions. In 1990, a postal survey of 838 graduates of Irish third level institutions was conducted. That study included 419 graduates who had exposure to undergraduate entrepreneurship education (interest group) and 419 graduates who had no exposure to undergraduate entrepreneurship education (control group). The graduates from the interest group had participated in the Enterprise Ireland National Student Enterprise Award Scheme (1984-1988). The authors explain:

Though the overall percentage of graduate start-ups was low (5%), the graduate entrepreneurs in the interest group were starting businesses at a younger age than those in the control group and were employing a greater number of people, had substantially higher turnover and were involved in manufacturing as well as service industries. (Owuzu-Ansah and Fleming 2001, p.93)

The interest group was further studied in 1995 by which time the number of graduate entrepreneurs had increased significantly, from 5% to 14.5%. By 2000, this figure had risen to 28.4%. Interestingly, almost 90% of responding entrepreneurs regarded themselves as being very satisfied or satisfied with their career to date. Over 40% of graduate entrepreneurs suggested the entrepreneurship course had a very important effect on their career decision. Their ventures have an average of 16.5 employees and an annual turnover of over 2.4 million pounds. Owuzu-Ansah and Fleming (2001) conclude:

... it appears that an awareness of the entrepreneurship process and developing and transferring knowledge about business formation during higher education can indeed stimulate graduate entrepreneurship.

(Owuzu-Ansah and Fleming 2001, p.109)

A further study was conducted by Hindle and Cutting (2002). This questionnaire survey attempted to study two groups of pharmacy graduates, one (25 graduates) who had taken entrepreneurship as part of their undergraduate studies and the other (23 graduates) who had not. All participants had started pharmacy enterprises. Hindle and Cutting (2002) indicate that the group who had taken entrepreneurship exhibited a higher degree of job satisfaction, and performed better in terms of sales and profit performance.

A similarly robust study has been conducted by Menzies and Paradi (2003). Their work explores a 15 year cohort of graduates of an engineering degree programme at a major Canadian University. The study comprised of students who had undertaken either one or three elective entrepreneurship courses and a randomly stratified comparison group who had no exposure to entrepreneurship. The single course in

entrepreneurship has been offered since 1984, while the three course option has been available since 1994. Menzies and Paradi (2003) also attempted to document graduate feedback on teaching and course related matters. The results of this survey indicate that almost half (48%) of engineering graduates who have taken one course in entrepreneurship as an undergraduate start their own business. It seems that 36% of graduates with three courses ventured (option commenced 1994) while 26% of the control group ventured. The research reveals that engineering graduates venture at a rate of about one third within two years of graduation and a third from three to seven years after graduation. Furthermore, it seems that while engineering graduates who take entrepreneurship are more likely to start more businesses, the relative performance of these businesses does not significantly differ from the ventures of engineering graduates with no exposure to entrepreneurship education.

Finally, Jones *et al.* (2008) questionnaire surveyed a group of undergraduates in Poland before and after taking an entrepreneurship course. The graduates were surveyed before and after taking the course. On completion, the 59 respondent graduates reported a significant increase in their intent to start a business immediately (up 14%) while those intending to start a business at some stage in the future increased by a total of 5%.

While the studies outlined above indicate outcomes of entrepreneurship education and training, a limited number of other studies illustrate more disappointing findings. Chee (1985), for example, in a review of the impact of entrepreneurial training programmes in Malaysia, contends that they have not been very cost effective. It seems the Malaysian government spent \$100 million between 1975 and 1985 in

entrepreneurial training but, the author suggests, it is doubtful if expenditure produced more than 1000 new entrepreneurs. Chee (1985) believes this has resulted from a combination of poor quality participant selection, a shortage of experienced and qualified trainers and an absence of coordination among training agencies.

Adam and Wilson (1995) explore the impact of programmes to help the unemployed start businesses. Her survey results taken from nine member countries of the Organisation of Economic Cooperation and Development (OECD) and two transition countries, indicate that programmes create less new jobs than expected and only a small number of qualified unemployed participate. Furthermore, Wilson (1995) suggests assessing the effectiveness of these programmes is difficult since a number of participants would have started their venture without any formal assistance.

Similarly, Westhead and Storey (1996) cite work by two groups of researchers, Maung and Erens (1991) and Tremlett (1993), who conclude that the impact of two enterprise training schemes in the UK (Enterprise Allowance Scheme and the Business Start-up Scheme) reveal little evidence that businesses where the founder received training performed better than ventures where the founder received no training. Similarly, Westhead and Storey (1996) outline research by Smallbone (1989) who studied the survival rates of new businesses who had received business counseling from an Enterprise Agency (EA) within an outer London borough. He observes that during the 1980s, 42% of these ventures stopped trading within three years of starting up business and suggests:

...the presence of the EA cannot be said on this evidence to increase the chances of survival for clients who approach it. (Westhead and Storey 1996, p.17)

Likewise, a study by Fletcher (1999) of Stirling University's Graduate Enterprise Programme shows disappointing outcomes in terms of the numbers and quality of graduate start-ups. Furthermore, work by Rosa (2003) indicates that follow-up studies of the Graduate Enterprise Programme in the UK indicate that ventures created by participants are small in nature and not in "cutting edge" sectors. He contends:

The most successful businesses were not in biotechnology, computer software or other cutting edge knowledge businesses, but restaurants, retail stores and furniture manufacturers...

(Rosa 2003, p.450)

Finally, Noel (2001) explores the impact of entrepreneurship education on entrepreneurial intentions. He surveyed three groups of graduates from a mid-sized university in the U.S., entrepreneurship majors, non-entrepreneurship business majors, and non-business majors. A questionnaire survey was distributed to 84 graduates who had earned undergraduate entrepreneurship degrees within the last eight years. Comparison groups were randomly selected from graduates in the same time period. The major hypotheses of this work proposed that entrepreneurship graduates will own more businesses than either of the two groups. While the results of this study confirm the hypotheses, they are far from definitive. The researcher explains the hypothesis:

...was partially supported – entrepreneurship majors have opened more businesses than other business majors and non-business graduates, though the difference was statistically significant (marginally) only between entrepreneurship and non-business majors.

(Noel 2001, p.1)

It appears clear that the majority of the studies that have been conducted indicate a positive relationship between entrepreneurship education and student/participant propensity to venture. However, it is also apparent that the majority of the

aforementioned studies have three characteristics. One: they tend to examine the outcomes from one particular course, programme or institution. Two: most of the studies explore the immediate outcome of initiatives and ignore the long-term effects of entrepreneurship education and training. Three: the majority of studies do not use control groups of participants who have not been exposed to entrepreneurship interventions. These observations are confirmed by a number of contemporary theorists (Falkang and Alberti 2000; Matlay 2005; Chapman and Skinner 2006; Pittaway and Cope 2007; Souitaric et al. 2007; Gibb 2008; Hegarty and Jones 2008; Cooney and Murray 2008; Izquierdo and Buyens 2008; Jones *et al.* 2008). The present thesis attempts to address these issues through exploring the outcomes of entrepreneurship education in Ireland. The work utilises MBA graduates in Ireland (1992-2004) as its unit of analysis and compares graduates who have taken entrepreneurship with those who have not.

Before highlighting the conceptual framework for this thesis, Figure 2.1 offers a pictorial overview of the study. This outlines the three major elements to the work. To the left are the background forces, which the thesis intends to test. These are the unit of analysis, MBA graduates in Ireland (1992-2004), and the primary subject matter of analysis, exposure to Entrepreneurship as part of an MBA programme. Underlying both of these is the literature review from which the “research gap” of the present research (the outcomes of Entrepreneurship education) is identified. The research gap highlighted within the literature review leads to the five research objectives of the present work (outlined in Chapter 1 and further explored in Chapters 3 and 4). The research objectives are formulated to address the research gap and are interrelated because all have this common purpose.

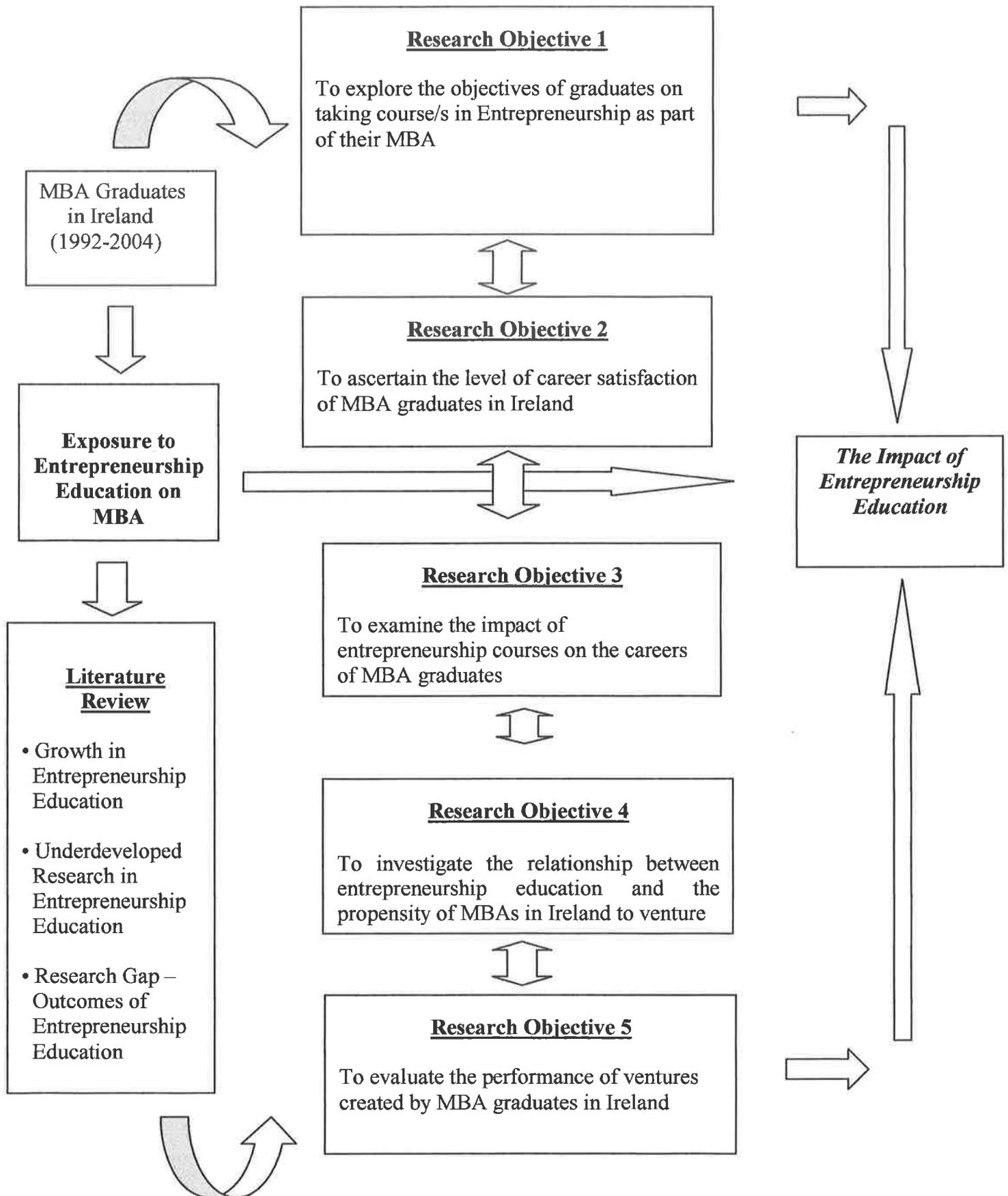


Figure 2.1 The research overview

The conceptual model for this thesis is outlined and explained within Figure 2.2 below:

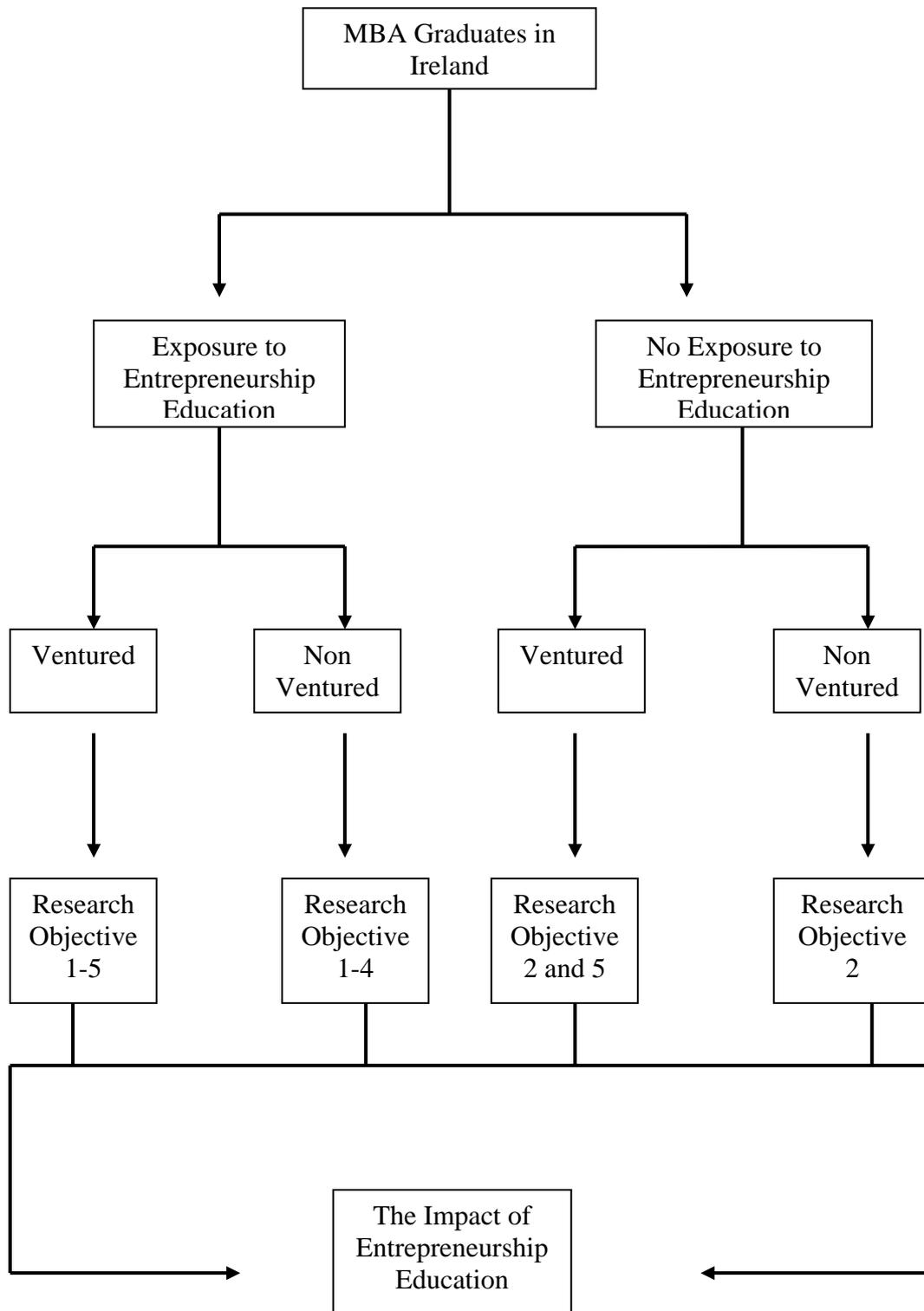


Fig. 2.2 The impact of graduate entrepreneurship education – A conceptual model

Figure 2.2 illustrates that the unit of analysis within the present thesis are MBA graduates in Ireland. The cohort is subsequently divided into those who took entrepreneurship on their MBA programme and those who did not. Figure 2.2 highlights that both these groups are further sub-divided into those who have ventured and those who have not. This results in a total of four constituent groups of MBA graduates, those who have taken entrepreneurship (including graduates who have ventured and non-ventured) and those who have not taken entrepreneurship as part of their programme (including graduates who have ventured and non-ventured). Furthermore, Figure 2.2 illustrates which of the study's five research objectives (already outlined in Figure 2.1) relate to the four groups of graduates. Collectively, each contributes to the core objective of the present thesis, that is, a study of the impact (influencing factors) entrepreneurship education has on MBAs propensity to venture.

A critical aspect of any research deliberation is the development and testing of research hypothesis. These, and how they relate to the current study, are discussed within Chapter 3.

2.6 Conclusion

This chapter explores some of the central issues within entrepreneurship education. It provides a theoretical background relating to the core topic of this thesis, that being entrepreneurship education and its outcomes. Firstly, the importance of developing a theoretical framework was highlighted. A theoretical frame of reference assists in supplementing researchers' knowledge base of a particular discipline, brings a degree

of focus and clarity to the study and ultimately helps in the selection of methodologies that address specific research problems. The literature review enables the development of a theoretical framework. This forms the basis of the conceptual framework that relates to the specific research problem of the study.

The difficulty of determining a precise definition of the “entrepreneur” and “entrepreneurship” is outlined and some of the approaches to understanding the term are explained. The definitions used for the purposes of this study are based around the key terms “opportunity” and “creation” and concur with the work of a number of contemporary scholars (Hisrich and Peters 1998; Brush 2003; Kuratko 2005; Hindle 2006; Tounes 2007; Bygrave and Zacharakis 2008).

The chapter further observes that entrepreneurship education is the process of providing individuals with the necessary insights and skills to identify recognise, evaluate and exploit opportunities. Furthermore, entrepreneurship education involves knowledge transfer in terms of resource allocation, risk and creating and managing the entrepreneurial proposition for survival and growth. It revolves around the three major aspects of entrepreneurship itself, opportunistic ideas, the resources to realise them and the creation of an appropriate managerial structure and organisation. The chapter outlines that reasons for the dramatic growth in entrepreneurship education include a high demand from students, and realisation of its importance by government, and the educational and business communities. The term entrepreneurship education can mean different things to different people. Consequently, a distinction is made between entrepreneurship education and small business management, entrepreneurship education and enterprise education.

Furthermore, the objectives of entrepreneurship education initiatives are discussed. It includes such things as the acquisition of knowledge and concepts germane to entrepreneurship, exposure to entrepreneurial techniques and skills, altering attitudes to change and developing empathy towards entrepreneurs and their circumstances.

The question still arises; can entrepreneurship be promoted, fostered and developed through education? There is a predominant view which supports growing evidence that indicates when people complete entrepreneurship education programmes, they tend to be more inclined to do entrepreneurial things and that every student has an element of enterprise which can be developed. Some theorists, however, observe that few studies address the effect of offerings and see this as the most fundamental issue relating to the field. A number of scholars indicate that some of the skills of entrepreneurship can be taught while others may be more difficult to teach. For example Jack and Anderson (2001) observe that entrepreneurship education is an amalgam of science and art. The science aspect is largely seen as a functional small business management while the art (imagination, innovation and creativity) are fundamentally experiential requiring different pedagogical approaches. But, there is a prominent view that the debate within entrepreneurship has moved on and currently focuses on what and how material should be taught.

The perceived need for evaluating entrepreneurship education and training is also explored and evaluated. Research within the field indicates “rather tenuous” (Hazlett *et al.* 2009) evidence associated with the outcomes of entrepreneurship education. Weaknesses of many research contributions to date include a focus on one particular programme or course and its immediate outcomes and the very limited use of control

groups. Despite the problems associated with the evaluation of entrepreneurship education, a number of evaluative studies exist, the vast majority of which indicate positive outcomes. On the other hand, the work of a small number of scholars indicates the contrary with some provisions yielding poor or disappointing results.

It does appear, however, that, from a literature review perspective, there is agreement that the relative effectiveness of entrepreneurship education interventions has not been satisfactorily probed, researched and debated, and, again, from the work done within the area, there appears to be a clear need to evaluate entrepreneurship education initiatives over time. Chapter 2 finishes with an outline of the conceptual model for this thesis. It highlights that the present thesis seeks to add to the current body of knowledge through exploring the outcomes of graduate entrepreneurship education in Ireland over a twelve year time period (1992-2004). It seeks to build on previous research contributions and investigate issues including the relationship between entrepreneurship education and the propensity of MBA graduates in Ireland to venture, the performance of their ventures, the impact of entrepreneurship education courses on their careers and their current levels of career satisfaction. This is done by comparing graduates who have taken entrepreneurship as part of their MBA programme and those who have not. These themes are further explored within Chapter 3.

Chapter Three

Research Methodology

3.1 Introduction

This chapter presents a review of research theory and outlines the research methodology used in the present study. The preceding literature review identified the key concepts and theories underlying this study. This chapter outlines the research hypotheses and the methodological approach taken in the empirical element of the work. Initially, a discussion of the various methodological approaches available to the researcher is presented and the study's research objectives and hypotheses are highlighted. There is an examination of the triangulated approach to research used by the author and consideration is given to both the quantitative and qualitative elements of the present work. The chapter finishes with a discussion on the reliability and validity of the methodologies chosen.

3.2 Understanding Research Methods

This section defines and classifies the various types of research available and explores the philosophical debates behind differing research methodologies. Robson (2005) contends that research can be classified according to the purposes of enquiry. He outlines four types of research orientation: exploratory, descriptive, explanatory and emancipatory. These and the circumstances in which their usage might be appropriate are explained in Table 3.1 below.

Table 3.1 Classification of the purpose of enquiry

1. Exploratory
• To find out what is happening, particularly in little-understood situations
• To seek new insights and ask questions
• To assess phenomena in a new light
• To generate ideas and hypotheses for future research
• Almost exclusively of flexible design
2. Descriptive
• To portray an accurate profile of persons, events or situations
• Requires previous knowledge of situation for appropriate information gathering
• May be flexible and/or fixed design
3. Explanatory
• Seeks explanations traditionally but not always in the form of causal relationships
• To explain patterns relating to the phenomenon being researched
• To identify relationships between aspects of the phenomenon
• May be flexible and/or fixed design
4. Emancipatory
• To create opportunities and the will to engage in social action
• Almost exclusively of flexible design

Robson (2005, p.60)

Robson (2005) suggests that clarifying the purpose of research helps greatly with the formulation of research problems and the pursuance of the research process.

Consequently, he observes:

A particular study may be concerned with more than one purpose, possibly all four, but often one will predominate. The purpose may also change as the study proceeds.

(Robson 2005, p.58)

The above classification is important as it assists in clarifying the classification pertaining to this thesis. The research problem for the present study, outlined in Chapter 1, is focused around whether there is indication that graduate entrepreneurship education is an influencing factor on MBA graduates propensity to venture. Consequently, the purpose of this enquiry is predominately exploratory in nature as it seeks to indicate and identify meaning within a little-understood situation (entrepreneurship education and graduate entrepreneurial behaviour). Furthermore, Table 3.1 advises that exploratory research is associated with work that seeks to address and explore new insights, questions and phenomena pertaining to a particular topic. It is also appropriate to a research agenda that seeks to generate ideas and hypotheses for future research (outlined within Chapter 5 of this thesis). Collectively, these represent characteristics of the current research and its core topic, entrepreneurship education. As is often the case with this type of investigation, the current study involves a “qualitative” or “flexible” design. However, on the subject of flexible methods, Robson (2005) outlines the advantage of using both qualitative and quantitative measures. He contends that:

.....there can be considerable advantage in using mixed-method designs, that is, designs which make use of two or more methods, and which may yield both quantitative and qualitative data.

(Robson 2005, p.5)

Consequently, this thesis uses mixed methods (both qualitative and quantitative measures). The research design of the present research is discussed in detail later in this chapter. Issues pertaining to the research objectives and hypotheses of the thesis are outlined below.

3.3 Research Objectives and Hypotheses

A research hypothesis is a tentative answer to a research problem. Domegan and Fleming (2007) observe it requires empirical research to support or refute the proposition and is an assertion as to the likely outcome of the work. They observe that research hypotheses are based upon and generated by experience, literature reviews or insights and are tentative statements about expected outcomes. Punch (2001) indicates that research hypotheses are the predicted answer to a particular research question. Furthermore, Kumar (2005) advises that research hypotheses become the basis of an inquiry and in most cases are based either on previous studies or observation. Jankowicz (1999) stresses that systematic research involves three important elements:

- An assertion that certain things might be true,
- Information relevant to the truth or otherwise of the assertion,
- Some method for bringing the first two elements together.

The assertion may, he explains, consist of a belief, a hunch based on past experience, or a hypothesis which suggests two things might be related. Similarly, Kumar (2005) advises that hypotheses primarily arise from a set of "hunches" that are tested through

a study and their importance lies in their ability to bring direction, specificity and focus to a research study. He advises there are four types of hypothesis. A null hypothesis stipulates that there are no differences between two situations, groups, outcomes, or the prevalence of a condition or phenomenon. A hypothesis of difference stipulates that there will be a difference between two factors. A hypothesis of point-prevalence arises where the researcher may have sufficient knowledge to speculate about the exact prevalence of a situation and, finally, a hypothesis of association tends to stipulate the extent of the relationship between variables. This study uses a null hypothesis and a hypothesis of difference as these conform to both the nature of the work and the conventions of scientific inquiry (Kumar 2005).

The research hypotheses of the present study are presented below. In accordance with Punch (2001), they relate to the overall research problem and associated research objectives of the present study. The overall research problem for the present work is:

What influence does entrepreneurship education have on MBA graduates propensity to venture?

The research objectives of this study, already introduced in Chapter 1, are restated below:

1. To explore the objectives of graduates on taking a course/s in entrepreneurship as part of their MBA.
2. To ascertain the level of career satisfaction of MBA graduates in Ireland.
3. To examine the impact of entrepreneurship courses on the careers of MBA graduates

4. To investigate the relationship between entrepreneurship education and the propensity of MBA graduates in Ireland to venture.
5. To evaluate the performance of ventures created by MBA graduates in Ireland.

In order to address these objectives, the following research hypothesis has been formulated:

Null Hypothesis =

Ho *Entrepreneurship Education is not an influencing factor in graduates' propensity to venture.*

Alternative Hypothesis =

Ha *Entrepreneurship Education is an influencing factor in graduates' propensity to venture.*

To enable the research hypothesis to be tested, five further sub-hypotheses have been developed. These sub-hypotheses relate directly to the study's research objectives which have been explained in Chapter 1, highlighted within Figure 2.1 and further presented above. They are outlined below.

Sub-Hypothesis 1

To explore the objectives of graduates on taking a course/s in entrepreneurship as part of their MBA.

Null Hypothesis =

Ho1 *There are no differences in the objectives of graduates who took entrepreneurship as a module and ventured, and the objectives of non-venturing graduates who took entrepreneurship as a module.*

Alternative Hypothesis =

Ha1 There are differences in the objectives of graduates who took entrepreneurship as a module and ventured, and the objectives of non-venturing graduates who took entrepreneurship as a module.

Sub-Hypothesis 2

To ascertain the level of career satisfaction of MBA graduates in Ireland.

Null Hypothesis =

Ho2 *Entrepreneurship courses have no impact on graduates' perceived career satisfaction.*

Alternative Hypothesis =

Ha2 *Entrepreneurship courses have an impact on graduates' perceived career satisfaction.*

Sub-Hypothesis 3

To examine the impact of entrepreneurship education on the careers of MBA graduates.

Null Hypothesis =

Ho3 *Entrepreneurship courses have no impact on the careers of MBA graduates.*

Alternative Hypothesis =

Ha3 *Entrepreneurship courses have an impact on the careers of MBA graduates.*

Sub-Hypothesis 4

To investigate the relationship between entrepreneurship education and the propensity of MBA graduates in Ireland to venture.

Null Hypothesis =

Ho4 *Entrepreneurship education has no impact on graduate propensity to venture.*

Alternative Hypothesis =

Ha4 *Entrepreneurship education has an impact on graduate propensity to venture.*

Sub-Hypothesis 5

To evaluate the performance of ventures created by MBA graduates in Ireland

Null Hypothesis =

H05 *Entrepreneurship education has no impact on the economic performance of business.*

Alternative Hypothesis =

Ha5 *Entrepreneurship education has an impact on the economic performance of business.*

3.4 Research Design

A research design is a “blueprint” or overall action plan for a research study. It is a master framework to guide data collection, measurement, analysis and conclusions (Domegan and Fleming 2007). Furthermore, Yin (2009) succinctly explains that:

...a research design is a logical plan for getting from here to there, where here may be defined as the initial set of questions to be answered and there is some set of conclusions (answers) about these questions.

(Yin 2009, p.26)

This section explores the research design used within the current investigation. Importantly, Kumar (2005) notes that research activity can be classified as qualitative or quantitative. The qualitative-quantitative classification is dependent on three criteria:

- the purpose of the study,
- how the variables are measured,
- how the information is analysed.

He explains that a study is classified as qualitative if the purpose of the study is primarily to describe a situation, problem or event and the information is gathered through the use of variables measured on nominal or ordinal scales (qualitative measurement scales). A study is classified as qualitative if analysis is done to establish variation without quantifying it. Alternatively, Kumar (2005) notes that a study is deemed quantitative if the researcher wishes to quantify variation, if the information gathered uses predominantly quantitative variables and the analysis is geared to ascertain the magnitude of variation. He advises that examples of qualitative research include the description of a situation or the account of individual's views on a particular issue. Alternatively, examples of quantitative aspects of a research study may involve examining the number of individuals with a particular problem or finding out how many people subscribe to a particular point of view.

Domegan and Fleming (2007) explain a classification of research design based on an understanding of exploratory, descriptive and causal research. They advise that qualitative studies are often referred to as exploratory research whereby the objective of the work is to understand an area better. Such research is relatively non-mathematical and non-statistical in form. In contrast descriptive research quantifies issues and measures the number and amount of a variable present. It details the percentage or proportion of a characteristic present and is heavily reliant on

mathematics, statistics and probability theory. Finally, causal research proves a cause and effect relationship between two or more variables. Domegan and Fleming (2007) contend that with this type of research:

...the investigator must know, first, the exact variables, and also the effect they have on each other. The researcher must be able to control outside factors and their influence on the variables being manipulated.

(Domegan and Fleming 2007, p.68)

Patton (1990) advises that considering research design alternatives leads to consideration of the relative strengths and weaknesses of qualitative and quantitative data. He contends that qualitative methods permit the evaluator to study selected issues in depth and detail, and observes:

Approaching fieldwork without being constrained by predetermined categories of analysis contributes to the depth, openness, and detail of qualitative inquiry.

(Patton 1990, p.13)

Quantitative methods, on the other hand, require the use of standardised measures so that the varying perspectives and experiences of people can fit into a limited number of predetermined response categories. Patton (1990) suggests that the advantage of a quantitative approach is that it is possible to measure the reactions of a great many people to a limited set of questions and thus enabling a comparison and statistical aggregation of the data. Alternatively, qualitative methods typically facilitate the production of a wealth of detailed information about a much smaller number of people and cases. This increases understanding of the cases and situations studied, but reduces generalisability.

Importantly, Adam and Healy (2000) observe that qualitatively oriented research is traditionally associated with the constructivist paradigm whereas quantitatively

oriented research is traditionally associated with the positivistic paradigm. This view is confirmed by Jankowicz (1999), who further differentiates between qualitative and quantitative research. Citing the work of Miles and Huberman (1994) he contends that a qualitative approach has the following features:

- It depends on a deep familiarization with a normal or typical real-life situation,
- It involves searching for significant themes running through disparate sources,
- It identifies less obvious issues as well as those that initially grab attention,
- It explores how people understand a situation and how this guides their actions,
- It develops knowledge through linking people's accounts to a body of theory.

In contrast, Jankowicz (1999) observes the positivistic underpinnings of quantitative research methods. He acknowledges:

A quantitative approach is complementary. Proceeding from the positivist assumption that if something exists, it exists in some degree, and can therefore be numerically measured.

(Jankowicz 1999, p.174)

He explains quantitative research is characterised by the following features:

- It involves concentrated attention on a limited number of variables and constants,
- A search for the significance of relative proportions to identify the more important,

- An attempt to understand how factors are structured or interrelated,
- Significance arises from aggregation or comparison and not individual data points.

Denzin and Lincoln (2003) develop some of these themes and suggest that qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is being studied and the situational constraints that shape inquiry. Qualitative researchers seek answers to questions that stress how social experience is created and given meaning. In contrast, Denzin and Lincoln (2003) observe that quantitative studies emphasise the measurement and analysis of causal relationships between variables, not processes. Proponents of such studies claim that their work is done within a value-free framework. However, a number of scholars observe that both qualitative and quantitative methods can be regarded as complementary and not competitors of each other (Patton 1990; Jankowicz 1999; Adam and Healy 2000; Robson, 2005). Adam and Healy (2000) conclude:

Though traditionally assumed to be so on grounds of rigor and scientific application, quantitative analysis is not always 'better' than qualitative. Statistics, for example, will only show if a given factor is significant; whether it is the most significant cannot be determined. Such analysis may also omit important variables and the social setting in which the research is situated is either ignored or assumed away.

(Adam and Healy 2000, p.57)

Patton (1990) notes that validity in quantitative research depends on careful instrument construction, administration and measurement. In qualitative research, the researcher is the instrument and validity hinges to a great extent on the skill, rigor and competence of the person doing the fieldwork. He suggests that both qualitative and

quantitative research methods constitute alternative, but not mutually exclusive strategies for research and can be collected successfully in the same study.

Furthermore, Robson (2005) advises that there is no rule that says that only one method must be used in an investigation and studies may combine methods producing quantitative data with others yielding qualitative data. He contends that an important benefit of using multiple methods is in the reduction of ‘inappropriate certainty’. Using a single method and finding a clear-cut result may delude researchers into believing they have found the ‘right’ answer. On the other hand, using multiple methods may point to other equally important answers which enrich the work and possibly future research agendas.

Finally, Robson (2005) explains that the main advantage of employing multiple methods is commonly cited as permitting triangulation, a method of finding out where something is by getting a ‘fix’ on it from two or more places. He suggests that within the social sciences this might be done through using multiple and different sources, methods, investigators or theories. Denzin (1978) proposes four ways in which research might be triangulated and these are outlined in Table 3.2 below:

Table 3.2 Different methods of triangulation

Triangulation Method	Explanation
Methodological Triangulation	<p>Using multiple different research techniques in order to maximise the strengths of each. This can take two forms:</p> <ul style="list-style-type: none"> • Between method triangulation: two different research techniques, usually one ‘quantitative’ and another ‘qualitative’ are combined together to exploit the strength of each. • Within Method triangulation: only a single basic technique may be employed, but different variations of the technique are employed.
Investigator Triangulation	<p>Several investigators work together on a single research project would produce more valid and reliable results than one person alone.</p>
Data Triangulation	<p>As well as different methods, one can have different ‘blocks’ of data taken from different times, different locations, different people. For example, researchers often replicate a study that was carried out before.</p>
Theoretical Triangulation	<p>Researchers employ more than one theoretical perspective with a single research project.</p>

Source Denzin (1978, p.327)

Introducing triangulation into a research design is one means whereby the evidence collected from one source is corroborated by evidence collected from another source (Adam and Healy 2000). Bryman (2001) contends that triangulation:

...implies that the results of an investigation employing a method associated with one research strategy are crossed-checked against the results of using a method associated with the other research strategy. It is an adaptation in the argument.....that confidence in the findings deriving from a study using a quantitative research strategy can be enhanced by using more than one way of measuring.

(Bryman 2001, p.447)

These themes are touched on by a number of other authors. Janesick (1999), for example, explains four basic types of triangulation and the uses to which they might be put:

- Data triangulation: the use of a variety of data sources in a study,
- Investigator triangulation: the use of several different researchers or evaluators,
- Theory triangulation: the use of multiple perspectives to interpret a single set of data,
- Methodological triangulation: the use of multiple methods to study a single problem.

The current investigation explores the impact of entrepreneurship courses on MBA graduates in Ireland. In doing this, it is important to establish quantitative measures of; the objectives of graduates on taking the course/s; the impact of these courses; the number of graduate start-ups; their economic contribution; and the career satisfaction levels of graduates. These issues are compared on the basis of those who have taken entrepreneurship as part of their MBA and those who have not. However, the current author also perceives the need to pursue a more qualitative methodology where graduate views are sought on a more individualistic and in-depth basis. The process of accommodating both perspectives (methodological triangulation) should increase the validity and reliability over a single methodological approach to the research problem (Guba, 1990). The form of methodological triangulation used in the current study is between method triangulation. With this, two different research techniques (usually one quantitative and one qualitative) are combined to maximise the merits of each. In

terms of selecting the most appropriate research strategy, Yin (2009) suggests the examination of three central conditions and how they relate the five core research strategies; experiments, surveys, archival analysis, histories and case studies. The three conditions are the type of research question posed, the extent of control an investigator has over actual behavioural events and the degree of focus on contemporary as opposed to historical events. These conditions and the appropriate research strategy to follow are illustrated in Table 3.3 below.

Table 3.3 Relevant situations for different research strategies

Strategy	Form of Research Question	Requires Control of Behavioural Events?	Focuses on Contemporary Events
Experiment	how, why?	Yes	Yes
Survey	who, what, where, how many how much?	No	Yes
Archival Analysis	who, what, where, how many how much?	No	Yes/No
History	how, why?	No	No
Case Study	how, why?	No	Yes

Source Yin (2009, p.8)

Yin (2009) suggests research questions that seek the appropriate answers to who, what, where, how much and how many, are suited to the quantitative survey type of positivistic research strategies where responses can be processed statistically and relatively large numbers of responses sought. This is in contrast to purely “how” and “why” type questions which are suited to the more in-depth qualitative and constructivist style provided in the use of case study methodology.

3.4.1 Research Strategy Adopted for this Study

As indicated earlier, the current research pursues a mixed methodology. The quantitative survey when complemented with qualitative face-to-face interviews is an example of methodological triangulation (Denzin 1978). The quantitative study uses a mail survey questionnaire. A questionnaire is a printed list of questions that respondents are asked to answer (Goddard and Melville 2005). This approach was chosen for the present research because it enabled a national study of MBA graduates in Ireland to be undertaken at a reasonable financial cost. Both of these methodological advantages are strongly endorsed by Domegan and Fleming (2007). They further advise that mail questionnaires eliminate interviewer bias and often suit busy respondents who have time to consider and formulate their answers. However, Denscombe (2003) cautions that questionnaires have a number of disadvantages. He indicates that these include a poor response rate (often 20% or less), limited and incomplete answering of questions and the researcher “cannot check the truth of answers” (Denscombe 2003). The qualitative element of this study utilized face-to-face interviews. The advantages and disadvantages of these are outlined within Table 3.4 below.

Table 3.4 The advantages and disadvantages of face-to-face interviews

Advantages	Disadvantages
Insights	Time Consuming
Depth of Information	Data Analysis
Informants' Priorities	Reliability/Interviewer Effect
Flexibility/Validity	Inhibitions
Response Rate	Cost

Adapted from Denscombe (2003, p.190)

Table 3.4 highlights that face-to-face interviews offer researchers the opportunity of gaining valuable insights based on the depth of information gathered. Furthermore, they enable informants expand on their ideas and views. Interviews are flexible in that adjustments can be made to lines of enquiry during the interview session and are a valid means of data collection as data they can be checked for accuracy while the interview progresses (Denscombe 2003). Finally, interviews are usually scheduled and prearranged which results in a high response rate. However face-to-face interviews have a number of disadvantages. They can be time-consuming and often involve travel and transcribing. Interviews can also present difficulties regarding data analysis as they often produce non-standard responses. Furthermore, Denscombe (2003) argues that the impact of the interviewer often means that consistency and objectivity are hard to achieve and this can have an adverse effect on reliability. Finally, interviews can be an invasion of privacy for some respondents and can also be an expensive means of data collection involving travel, time and transcription.

The decision to use both quantitative and qualitative approaches within the present research has also been influenced by the contributions of a number of existing scholars within the entrepreneurship education and training domain. A number of the theorists observe the fundamental procedural and methodological difficulties in attempting to measure the outcomes and impact of entrepreneurship education and training programmes (Storey 2000; Henry *et al.* 2003). Henry *et al.* (2003) advise that there is no universally accepted set of criteria for programme evaluation, and evaluations of entrepreneurship programmes have tended to use surveys of clients who are asked for their views. Henry *et al.* (2003), within the context of their study into the effectiveness of entrepreneurship training programmes, argue in support of

multi-method studies that focus on statistical analysis being integrated with qualitative data. Importantly, they cite work from Johnson and Sack (1996) who contend that the evaluation of entrepreneurship programmes through purely quantitative methods will fail to provide a true picture of their true worth. Furthermore, Henry *et al.* (2003) acknowledge that quantitative research focuses more on sampled populations rather than individual perspectives. Qualitative research is based on human action and social phenomena and allows the monitoring and assessment of what is happening ‘out there’. Accordingly, they observe:

...a key problem with quantitative studies based on large, statistically representative samples is that they tend to offer statements about populations rather than individuals or individual cases.

(Henry *et al.* 2003, p.13)

Similarly, Fleming (1999), in her analysis of undergraduate entrepreneurship programmes in Ireland, contended that:

As the investigation under study asks who, what, where, how many, and how much and also how and why questions, it was decided to use both a questionnaire based survey to focus on quantitative results and the case study method to gather qualitative data.

(Fleming 1999, p.125)

Fleming (1999) concludes that selection of these two research strategies facilitates a broader comprehension of the research topic through the analysis of the results of both methodologies. The next section of this chapter looks at both the quantitative and qualitative studies in more detail.

3.5 The Quantitative Study

The present research involves a survey of MBA graduates in Ireland. A detailed mail questionnaire was distributed to 550 graduates who took their MBA in Ireland. The survey instrument, and the sampling and analysis used are detailed below.

3.5.1 The Survey Instrument

The mail questionnaire used in this thesis (Appendix 1 provides a copy of the survey instrument) is composed of a total of 35 questions. These are sub-divided into five constituent parts (Section A, B, C, D and E). Section A, entitled Personal Profile, provides important background data on responding MBA graduates. Questions 1 to 3 questions the respondents on issues such as the year of completion of their MBA, and an indication of their age and gender. They were then asked a number questions pertaining to both their educational attainment and career development. Subsequently, participants were asked whether they held a third level qualification prior to commencing the MBA as well as the academic discipline of their pre MBA award. Furthermore, respondents were invited to provide details on their career to date. Included here were questions on whether they had changed jobs and/or career since completing their MBA and on their current work position. Survey participants were also asked to provide an indication of their level of satisfaction with regard to their career to date. Finally, Section A is completed with respondents confirming whether there were entrepreneurship modules on their MBA programme.

Section B of the research instrument attempts to focus specifically on those survey participants who took an entrepreneurship module/s as part of their MBA degree.

Having “filtered” graduates who did not take entrepreneurship as part of their MBA programme, Section B enquires as to the objectives of participating MBAs on taking entrepreneurship and whether these objectives were met. This part of the questionnaire further explores the impact of entrepreneurship module/s on respondents perception of the discipline, their subsequent career decisions and aspiration to pursue entrepreneurial activity. Section C of the survey instrument dwells on those responding graduates who have commenced ventures. It commences with examining participants rationale for start-up and explores their entrepreneurial behaviour to date. Issues here include an examination of when they started their most recent venture, whether they ventured more than once and the timing of this relative to MBA completion. Next, respondents were questioned on features of their particular entrepreneurial start-up (sector and type of organisation). Finally, responding MBA graduates were asked about their venture’s employment levels, sales, workforce and profitability trends, and geographical area of trading. Section D explored the extent to which responding graduates might consider venture start-up in the future. It examined the link between business ideas and their non-pursuance as well as the level of future entrepreneurial intent among participants. The research instrument concludes with Section E. This single “open question” invited MBA graduates to share any comments or suggestions which may add to the topic under investigation.

The present work used a combination of closed-ended and open-ended questions. Bryman (2004) explains that when asked open questions, respondents can reply however they wish. With closed questions, respondents are “presented with a set of fixed alternatives from which they have to choose an appropriate answer” (Bryman 2004). He further advises that one of the most significant considerations for

researchers is whether to ask questions in an open or closed format. Multiple-choice questions are generally easier for both respondent and researcher while open questions ensure survey participants are given the opportunity of elaborating on particularly poignant issues relevant to the research agenda (Domegan and Fleming, 2007). Kumar (2005) notes that closed-ended questions should be used for eliciting factual information while open-ended questions are used for seeking opinions, attitudes and perceptions. Accordingly, as factual information, opinions, attitudes and perceptions are all important to this investigation, both types of questions were used.

3.5.2 Sampling

Goddard and Melville (2005) observe that sampling involves the examination of a representative number of people or things (subset) from the total population being investigated. The purpose of sampling is to gain a level of understanding of the total population based on the characteristics of the sample. Accordingly, Robson (2005) stresses that it is unusual to be able to deal with the whole population in a survey and that a sample is a selection from the population. Before a survey can be conducted, it is necessary to determine the sampling frame for the study. Domegan and Fleming (2007) further advise that a sampling frame is a list of the total units within a defined population.

The sampling frame for the present work was the list of membership of the MBA Association of Ireland. This database was selected because it affords a representative sample of the total number of MBAs in the Republic of Ireland (the unit of study) and has member graduates from all the universities and Institutes of Technology in

Ireland. The sample providing the information required was of crucial importance to the representativeness of the research. Ideally the survey should have covered all MBA graduates of Irish third level institutions. Clearly this was not possible. Not only would the expense of such a survey have been prohibitive but, more importantly, to generate a list of MBA graduates of Irish Universities and Institutes of Technology was impossible due to the time span (1992-2004), the issue of confidentiality and data protection legislation. To overcome the problem of generating a suitable sample frame, the assistance of the MBA Association of Ireland (MBAAI) was sought and permission was granted to use their list of membership for the year 2005. This list, which included MBA graduates up to 2004, is available to all members of the association (available within their official diary) and includes such information as the graduates' name, institution and year of graduation, their job title and the organisation they currently work within. It does not include their postal address. However, with the information available, this researcher used the "Golden Pages" to establish a postal address for every member and thus a comprehensive database of 550 MBAs was created.

It was not possible to establish postal addresses for all members of the MBA Association of Ireland. In this instance, the accompanying contact phone number was used to establish, where possible, a relevant postal address. In a number of cases it was not possible to ascertain contact details and, accordingly, these individuals were discarded from the research database. The final database includes MBA graduates from 1992-2004. This study was augmented with personal interviews. These were conducted in Autumn 2008 and detailed later in this chapter.

3.5.3 The Pilot Survey

Robson (2005) advises that the first stage of any data gathering exercise should be, if at all possible, a pilot study which he terms a “dummy run”. This can help present any problems involved in the process of converting questionnaire design into research reality. Furthermore, Creswell (2003) proposes that pilot tests should be done under conditions that reflect in miniature the main survey. He contends that their primary advantages are in testing both the accuracy and reliability of sampling frames and the physical presentation of the survey. Importantly, Jankowicz (1999) suggests that pilot studies should include a “small number of people taken from the same population as the sample”.

The pilot study for the present study was conducted on November 1st 2005. In total 12 (approximately 2% of the total sample) questionnaires were posted to randomly chosen MBAs. Domegan and Fleming (2007) indicate that between 5 and 10 respondents are appropriate for such a pilot study. All questionnaires were returned within a two-week time period. Respondents were then contacted and views were sought on the survey instrument. Specifically, issues including the questionnaire format, instructions, and sequence and wording of questions were discussed. No changes resulted from this process and the final version of the questionnaire was printed and posted to the aforementioned database of MBA graduates on December 5th, 2005.

3.5.4 Administration of the Questionnaire

The survey instrument was professionally printed in an A5 booklet format and totaled 8 pages in length. This was done to ensure ease of completion for the respondent. It was accompanied by a one-page cover letter (see Appendix A). Adam and Healy (2000) advise that a cover letter should be brief and outline who you are and the overall purpose of the study. They also suggest printing the cover letter on official headed paper from the researcher's department or institution. The cover letter for the present research, dated November 25th, 2005, gave a brief personal introduction, outlined the overall objective of the research and explained the fact that respondents were assured of absolute anonymity. It was printed on University of Limerick headed paper. Both the questionnaire and covering letter were inserted into an A5 envelope (stamped addressed envelope enclosed) and mailed on December 5th, 2005.

3.5.5 Response and Non-Response Response Rate

In total, 550 envelopes were posted and 208 completed questionnaires were returned. This represents a response rate of 37.8%. Domegan and Fleming (2007) observe that mail surveys are often plagued by low rates of return and, typically, a 10% response rate is not unusual. Accordingly, 37.8% is regarded as being a very satisfactory participation rate for a mail survey.

While the survey response rate for the current study may be deemed acceptable, the author was keen to give some consideration to the non-respondents. Adam and Healy (2000) conclude that while it is unavoidable to have a non-response aspect to a

survey, researchers must ensure it has no side effect on the results of the study. They contend:

Bias can occur when respondents who would have differed markedly from the general case decide not to take part in the study.

(Adam and Healy 2000, p.79)

One way to test for such bias, they advise, is to use late respondents as surrogates for non-respondents and to compare their responses to a random sample of respondents. Significant differences between the two groups may indicate a non-response bias (Adam and Healy 2000). Accordingly, the author randomly selected the final 5% of completed questionnaires to be received in the survey. This amounted to a total of 11 documents. These responses were compared to a random sample (5%) of the remaining survey questionnaires from the present study. A statistical analysis was conducted and no perceivable differences were identified thus indicating a limited degree of non-response bias.

3.5.6 Statistical Analysis

Statistical analysis deals with the processing, interpretation and understanding of quantitative research data. Lucy (1997) suggests:

Statistical analysis is a scientific method of analyzing masses of numerical data so as to summarise the essential features and relationships of the data in order to generalise from the analysis to determine patterns of behaviour, particular outcomes or future tendencies. (Lucy 1997, p.45)

The Statistical Package for the Social Sciences (SPSS) was used for the statistical analysis of the quantitative data in the present research. SPSS is an integrated computer software system for statistical data analysis. Robson (2005) believes that for

a small amount of quantitative data it may be appropriate to carry out analysis “by hand” but that modern software packages such as SPSS have the advantages of power, speed and storage capacity and should be used for larger studies if at all possible. Similarly, Domegan and Fleming (2007) highlight the powerful data manipulation facilities of SPSS and its usefulness in the analysis and interpretation of large quantities of quantitative research data.

Punch (2001) explains that the analysis of quantitative research is based on assessing relationships between variables and many different ways have been developed to study these. The relationships to be tested are highlighted within the research hypothesis. In this regard, Creswell (2003) explains that hypotheses are predictions the researcher holds about the relationship among variables and are “estimates of population values” (Creswell 2003). Furthermore he suggests that the testing of hypotheses employs statistical procedures in which the investigator draws inferences about the population from a study sample. In total, there are five research hypotheses pertaining to this thesis and each of these are statistically tested in Chapter 4. One of the most popular statistical techniques within data analysis is the chi-square χ^2 test. This test is a formal statistical procedure that facilitates an assessment of association between two variables and is used widely within the current research. It highlights the discrepancy between observed and expected frequencies (i.e. those frequencies that might have been expected assuming the null hypothesis was true). Lucy (1997) advises that the χ^2 test is an important aspect of hypothesis testing and is best used when it is wished to compare an actual, observed distribution with a hypothesized or

expected distribution. He explains that the formula for the calculation of χ^2 is as follows:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Where:

O = the observed frequency of any value

E = the expected frequency of any value

The χ^2 value obtained from the above formula is compared with the value in the χ^2 distribution tables for a given significance level (p value) and the number of degrees of freedom (df). If the chi-square value is less than the test value ($\chi_s^2 < \chi_t^2$, p value $>$ 0.05) then there is no significant difference within the sample analysis and the null hypothesis not rejected. The opposite of this is also true. When the chi-square value is greater than the test value ($\chi_s^2 > \chi_t^2$, p value $<$ 0.05) it suggests a significant difference in the sample analysis and consequently, the null hypothesis is rejected in favour of the alternative hypothesis.

The second statistical test used in the present research analysis is Fisher's exact test. Robson (2005) stresses that statisticians warn against the use of chi-square in cross-tabulations when one or more expected frequencies fall below a particular value, usually taken as 5 in small tables. Fisher's exact test is a substitute calculation, which may be used in circumstances where the expected frequencies are too low for chi-square. It is used to analyse contingency tables that contain exactly two rows and two

columns, and that contain less than 50 cases. With this test an exact significance value (p value) is compared to a test value. If the exact significance value (p value) is greater than the test value, there is no significant difference in the sample analysis, which suggests the null hypothesis is not rejected. The opposite to this is also true. If the exact significance value (p value) is less than the test value, there is a significant difference in the sample analysis. This indicates a rejection of the null hypothesis in favour of the alternative hypothesis.

Furthermore, the present study uses a limited amount of bivariate analysis. This is done through the Pearson correlation test. Bivariate analysis attempts to measure the likelihood of a number of factors (more than one) affecting a decision (Lind *et al.*, 2002; Blumberg *et al.*, 2005). Bryman (2004, p.230) indicates that it is concerned with the analysis of two variables at a time “in order to discover whether the two variables are related”. A value of less than 50% ($< .5$) normally indicates a limited degree of association between variables.

3.6 The Qualitative Study

The face-to-face interview approach used in this thesis explores research questions that ask “how” and “why”. Yin (2009) advises that the use of interviews is suited to situations where the researcher has no control over behavioral events, and where the focus of the study is on contemporary events. Both of these are characteristics of the current investigation. Furthermore, Birdthistle (2004) advises that results of a quantitative study can be checked with the outcomes of qualitative research. She concludes:

Through combining the methods, the outcome can be the establishment of a relationship between variables and an explanation of that outcome through the use of quantitative research being supported by the qualitative method.

(Birdthistle 2004, p.178)

Creswell (2003) advises that face-to-face interviews allow the researcher “control” over the line of questioning while, at the same time, permitting the interviewee to provide historical type information. Furthermore, Denscombe (2003) considers that while a face-to-face interview can be expensive (compared to mail or telephone), researchers might expect the data obtained to be more detailed and rich. It also allows the researcher an immediate means of validating data and an opportunity to “sell” the research concept to respondents in a way that questionnaires do not. The current investigation includes six face-to-face interviews with graduates who have taken their MBA in Ireland. Three of the six interviewed graduates have ventured whilst three have not ventured. Four interviewees have taken entrepreneurship as part of their MBA whilst two have not. The choice of this sample, the interview structure and issues of reliability are discussed later in the chapter.

The type of interview used in the present research is known as a focused interview (Yin 2009). This is used when the “the main purpose of an interview might be to corroborate certain facts that you already think have been established” (Yin 2009). Accordingly, the current study intends to test its research hypotheses through the aforementioned quantitative survey and corroborate these findings with face-to-face interviews. The interviewees selected for the present study were chosen randomly from completed and returned questionnaires. The quantitative survey instrument was confidential and anonymous. However, a very small number of respondents did

provide contact details with returned questionnaires. A total of 13 in total or 6.2% provided contact information with their responses and this was the sample used. To attempt to overcome possible bias, this sample of 13 respondent questionnaires were statistically compared to a random sample of 13 questionnaires from total responses. The results of this statistical analysis indicated that there appeared to be no perceivable difference between both groups. The author believed it important to interview both graduates who had started ventures and those who had not. Furthermore, due to the wide geographic area involved, costs and timing, it was deemed appropriate to interview a maximum of six respondents. Consequently, six interviewees were randomly selected (3 who had started businesses and 3 who had not) and the fact-to-face interviews took place in October 2008. A further random sample of two graduates was selected and pre-test interviews were conducted with each in September 2008. Robson (2005) identifies that a small number is appropriate for pre-testing such qualitative work. No changes were made to the original interview schedule. The interview schedule developed for the qualitative aspect of this thesis is discussed below.

A number of contemporary theorists advise that in-depth face-to-face interviews often tend to be unstructured in nature (Domegan and Fleming 2007). However, Yin (2009) stresses that a focused interview tends to be somewhat “open-ended” but, at the same time, is likely to follow schedule of questions. This perspective is supported by Denscombe (2003) who differentiates between the concepts of semi-structured and unstructured interviews. He explains that semi-structured interviews have a clear interview schedule but are often somewhat flexible in facilitating the interviewee should they wish to speak more widely on issues raised. Unstructured interviews go

further in the extent to which emphasis is placed on the interviewee's thoughts and tend to focus on the interviewee pursuing their own train of thought. Denscombe (2003) concludes:

Semi-structured and unstructured interviews are really on a continuum and, in practice, it is likely that any interview will slide back and forth along the scale.

(Denscombe 2003, p.167)

The interviews conducted for the purposes of this thesis followed an interview schedule (Appendix B provides a copy of the interview schedule), but interviewees were encouraged to develop concepts and speak openly and freely on the issues raised. They were also at liberty to raise any other issues deemed by them to be important to the topic under investigation. From this perspective, the interviews were semi-structured in nature. The vast majority of questions asked were "open-ended" and based on each of the research hypotheses posed in the current study. For this reason, the interviews included questions aimed at graduates who had and had not ventured and at those who had and had not taken entrepreneurship. Each of the interviews was between one and two hours in duration. Adam and Healy (2000) note that this is typical for research interviews.

Finally, all the interviews conducted were audio-taped and this was done with prior permission of each interviewee. Furthermore, interview notes were taken both during and after each interview. Robson (2005) advises that when analyzing the interview data, taping is desirable as it enables a permanent and complete record to be kept and allows the interviewee to revisit the material as required. He also concludes that it may not be possible or necessary to transcribe interviews but stresses the importance of selecting and transcribing relevant passages and quotes from the interview, which

can be used within the main research report or thesis. Likewise, Denscombe (2003) indicates that direct quotes and extracts from interviews can be used to good effect in social research. These, he observes:

...can be interesting in their own right, giving the reader a flavour of the data and letting the reader 'hear' the points as stated by the informants. For another, they can be used as a piece of evidence supporting the argument that is being constructed...

(Denscombe 2003, p.188)

In this way, the present study uses the qualitative data presented to corroborate the findings established through the quantitative survey. Importantly, Robson (2005) underlines that qualitative data may be useful in supplementing and illustrating the quantitative data obtained from a survey. This is the case with the current investigation. In such circumstances, he advises that:

Small amounts of qualitative data used as an adjunct within a largely quantitative fixed design study will not justify detailed and complex analysis. Often the need is simply to help the account 'live' and communicate to the reader through the telling quotation or apt example".

(Robson 2005, p.456)

Accordingly, notes and quotes based on the taped interviews were compiled by this author and used to support the data presented from the quantitative study. Issues relating to reliability and validity are discussed below.

3.7 Reliability and Validity

Reliability refers to the extent to which stability or consistency is achieved when measuring something and Robson (2005) stresses the importance of researchers making an attempt to address reliability. Furthermore, Punch (2001) refers to the concept of consistency over time and expresses it in the following terms:

....if the same instrument were given to the same people, under the same circumstances, but at a different time, to what extent would they get the same scores?

(Punch 2001, p.99)

He observes that if results remain the same then the measuring instrument is deemed reliable. The opposite is also true and to the extent that differing scores are obtained, the instrument is deemed unreliable. Therefore, stability over time can be directly assessed through administrations of the same instrument at two points in time. This is termed test-retest approach. However, reliability can also be checked through two further means, the equivalent-form approach and the split-half approach. In the equivalent-form approach, each question on an original research instrument is rephrased and “researchers wind up with two tests that look different but ask the same questions” (Goddard and Melville 2005). If there is a high correlation between people’s responses to the original questions and the rephrased questions, this indicates that the test is reliable. Goddard and Melville (2005) advise that the split-half approach is a modified version of the aforementioned equivalent-form method but the two tests (original and equivalent) are combined into one. They further explain:

The fact that question 14 and question 87 are differently worded versions of the same question will escape most respondent’s notice, and this allows the test to be given at a single sitting rather than being spread over two sessions.

(Goddard and Melville 2005, p.46)

Furthermore Robson (2005) argues that unreliability may have a number of causes. For example, participant error may result from sending out a questionnaire to respondents at a particularly bad or unrepresentative time of year. The affect may be to skew results in a particular way. Secondly, he refers to participant bias as a potential source of unreliability. This may come about as a result of, for example,

respondents giving answers to particular questions that they believe the researcher wants to hear.

The present research has attempted to maximise the reliability of the work. For entirely practical reasons, it was not possible to conduct a test-retest reliability estimate with all respondents. Requesting 208 respondents to complete the survey instrument for a second time is not reasonable and, in any case, would have been impossible due to the anonymous nature of the survey instrument. However, the questionnaire was administered to the major sample (550 MBAs) and two further samples. Firstly, a pilot study was conducted before the questionnaire was posted to the sample and while feedback from this process resulted in some minor alterations to the document, it essentially remained the same. The questionnaires from the pilot study (12 in total) were compared to a random sample of 12 completed documents from the main survey and no perceivable differences were found between the two data sets. Secondly, within the qualitative element of the present research, responses from the 13 graduates who provided personal contact details with completed survey instruments were compared to a random sample of 13 completed questionnaires from the main study. Again, there was no perceivable difference between the two groups of respondents. While the approach used here is not a test-retest reliability evaluation, it represents a realistic approach to addressing reliability given the restrictions of the current research. Furthermore, Cronbach's alpha testing could not be utilized because of the lack of multi-item constructs within the research instrument.

The concept of validity suggests that a measuring instrument is valid when it succeeds in measuring what it is supposed to measure. Domegan and Fleming (2007) propose that the instrument is valid to the extent that its measures are free from systematic error (bias). Therefore, a researcher must be concerned with “whether we are measuring what we wish to measure and whether our measurement is accurate” (Domegan and Fleming 2007). Yin (2009) contends that valid research is trustworthy, credible, confirmable and dependable. Furthermore, Punch (2001) outlines that among the various approaches to the validation of instruments, three of the main ones are content validity, criterion-related validity, and construct validity. Each of these is now discussed in relation to the present study.

Content validity (also called face validity) refers to the extent to which test items offer the full range of what the test is attempting to measure. It focuses on whether the entire content of a conceptual description is represented in a measure. Punch (2001) advises that a conceptual description is made of ideas and concepts and that indicators in a measure should include all ideas within the description. Therefore he suggests that the steps involved in content validation are to specify the content of a description and to develop indicators that measure all areas of content in the description. This approach is similar to that taken by Birdthistle (2004) who outlines that it is not a quantitative measure but rather is “a qualitative expert opinion”. Furthermore, Bryman (2004) suggests that content validity can be established by “asking other people whether the measure seems to be getting at the concept that is the focus of attention”. He further advises:

..people, possibly those with experience or expertise in a field, might be asked to act as judges to determine whether on the face of it the measure seems to reflect the concept concerned.

(Bryman 2004, p.73)

The current study followed the approach suggested by Bryman (2004) through an extensive examination of existing literature and from this ideas and concepts were identified and specified. The conceptual description was subsequently divided into major areas of importance and previously used measurements were chosen to appropriately accommodate each of these. Finally, the developed measurement instrument was pre-tested with a sample taken from the same population as the overall sample. For the quantitative study 12 MBA graduates (approximately 2% of the total sample) were randomly selected from the overall sample. Domegan and Fleming (2007) contend that “five to ten respondents” are sufficient for a pre-test. There was a 100% response rate and no changes were made to the survey instrument. As outlined earlier, there were also pre-test interviews conducted. These involved two randomly selected MBA graduates and resulted in no changes being made to the interview schedule.

Criterion-related validity measures whether an instrument accurately predicts or diagnoses some particular variable (Goddard and Melville 2005). Black (2003) explains that to check this type of validity requires comparing a new instrument to an existing one by calculating the correlation of scores on both instruments. There are two types of criterion-related validity. Firstly, concurrent validity involves correlating two different research measures of the same phenomena, which have been administered at the same time (Domegan and Fleming 2007). The findings of the two measurement techniques can then be compared. The second type of criterion-related validity is predictive validity. This refers to the ability of a measuring instrument to predict some future event. Punch (2001) suggests an example of this would be asking

a group of individuals about planned future behaviour and at some point in the future correlating this with their actual behaviour.

However, Black (2003) advises that depending on other survey instruments, as a means for justifying the validity of a new instrument may be limited in value “since this is passing the responsibility for ensuring validity to another researcher” (Black 2003). Furthermore, the use of criterion-related validity has been limited in surveys because of an absence of empirical criteria on which to assess the validity (Birdthistle 2004). This was the case with the current investigation, which would require the future entrepreneurial behaviour of graduates to be correlated with the intent indicated within the original survey. This data was not available.

The final type of validity is construct validity. Punch (2001) advises that this tends to focus on how well a measure conforms to theoretical expectations and is present when a logical argument can be advanced to defend a particular measure. He states:

Any measure exists in some theoretical context, and should therefore show a relationship with other constructs which can be predicted and interpreted within that context. (Punch 2001, p.101)

Futhermore, Tashakkori and Teddlie (2003) advise that construct validity is the degree to which the data collection procedure shows similarity between groups that are theoretically expected to be similar on the construct or attribute under investigation. It is sometimes divided into convergent validity and discriminant validity (Domegan and Fleming 2007). Convergent validity suggests that the use of two or more independent measuring techniques should produce a common

measurement value. It exists if, for example, two very similarly worded questions in a survey to a particular population should, all things being equal, yield similar responses. Discriminant validity is explained in the following terms:

While construct validity is the degree of correlation among different measures that purport to measure the same construct, discriminant validity is the lack of or low correlation among constructs that are supposed to be different.

(Domegan and Fleming 2007, p.346)

Essentially, it involves demonstrating a lack of correlation among different constructs where questions that measure different objects yield different results. Tashakkori and Teddlie (2003) also refer to the concepts of internal validity and external validity. Internal validity concerns an examination of the relative quality of hypothesised relationships between variables. They contend that internal validity is:

The approximate validity with which we infer that a relationship between two variables is causal or that the absence of a relationship implies the absence of cause.

(Tashakkori and Teddlie 2003, p.710)

Furthermore, they advise that external validity concerns the “generalisability” of hypothesised relationships and whether these can be transferred to other settings and contexts. In line with the work of Birdthistle (2004), the current investigation has sought to address construct validity through exploring the correlations between variables and where possible, has attempted to define constructs utilizing previously validated measurement items. Bryman (2004) stresses that in estimating construct validity, researchers are encouraged to deduce and test hypotheses relevant to the concept. The hypothesised relationships within the current study are reported in Chapter 4.

3.8 Conclusion

This chapter details and explains the research methodology used within the current study. The chapter explores differing research methodologies and examines the methodology selected to address the research gap of the present enquiry. Firstly, research can be divided into four types according to its purpose. These are exploratory, descriptive, explanatory and emancipatory research. The present study is predominately exploratory in nature and the research design deployed accommodates both quantitative and qualitative measures (methodological triangulation). This seeks to increase the validity and reliability over a single method approach to a research problem.

The quantitative dimension of the study comprised of a detailed questionnaire being administered to a comprehensive database of 550 members of the MBA Association of Ireland (MBAAI). There was a satisfactory response rate of 208 graduates (37.8%). These completed survey instruments were processed using SPSS and the statistical tests chi-square, Fisher's exact test and the Pearson correlation test. The qualitative face-to-face interviews were conducted with a random sample of MBAs who participated in the quantitative work. There were six interviews conducted. Three interviewees had started a business and, in total, four had taken entrepreneurship as part of their MBA programme. The interviews conducted were audio-taped and semi-structured in nature and, while an interview schedule was adhered to, interviewees were encouraged to speak openly and freely. The majority of questions were "open-ended" and related to each of the research hypotheses posed. Finally, issues pertaining to the reliability and validity of the current investigation are discussed. The reliability

of this investigation was checked through the original pilot study and a further comparison of another sample of 13 respondents with a random sample from the total number of completed questionnaires. In both tests, no perceivable differences were found. Furthermore, the content validity and construct validity of the work were verified and checked through appropriate means.

This chapter has outlined the pertinent methodological considerations of the current thesis. It has (along with Chapters 1 and 2) laid a theoretical foundation for the present enquiry and helps put the subject matter into context. Chapter 4 outlines the research findings and collectively all four chapters form the basis of the concluding discussion presented in Chapter 5.

Chapter Four

Research Findings

4.1 Introduction

This chapter presents findings of the quantitative and qualitative research as described in Chapter 3. The aim of the thesis is to explore the long-term impact of graduate entrepreneurship education in Ireland in terms of their propensity to venture. The study presented utilised MBA graduates in Ireland as its unit of analysis. Specifically, it seeks to explore the underlying research question addressed within the current research, i.e., *what influence does entrepreneurship education have on MBA graduates propensity to venture?* It is motivated by a desire to contribute to the critically important field of entrepreneurship education and its impact and seeks to establish whether there is a relationship between entrepreneurship education and graduate propensity to venture (see conceptual model, page 83). The research objectives of this study, already introduced in Chapters 1 and 4, are restated below:

1. To explore the objectives of graduates on taking a course/s in entrepreneurship as part of their MBA.
2. To ascertain the level of career satisfaction of MBA graduates in Ireland.
3. To examine the impact of entrepreneurship courses on the careers of MBA graduates
4. To investigate the relationship between entrepreneurship education and the propensity of MBA graduates in Ireland to venture.
5. To evaluate the performance of ventures created by MBA graduates in Ireland.

The chapter commences by outlining the profile of the respondents. This is followed with some introductory background to the research findings relating to those who have studied entrepreneurship on their MBA and those who did not. It subsequently

presents the findings for the hypotheses and sub-hypotheses set out in Chapter 3. Finally, the chapter concludes with a summary of the findings and a concluding discussion.

4.2 Profile of the Respondents

The national Master of Business Administration (MBA) survey was conducted in December 2005 and 208 completed questionnaires were returned (n=208). This represents an overall response rate of 37.8%. The various response rates that are evident in the findings are highlighted in Table 4.1 below.

Table 4.1 Response rates from quantitative survey

Total Respondents	208
Ventured	56
Did not venture	152
Took entrepreneurship	120
Did not take entrepreneurship	88
Ventured and took module	36
Did not venture and took module	84

Table 4.1 confirms that 208 graduates participated in the study and of these a total of 56 graduates had started their own ventures. Furthermore, 152 graduates did not start businesses. The survey also revealed that 120 graduates had taken either one or two modules of entrepreneurship on their MBA programme while 88 participants had no exposure to entrepreneurship while undertaking their MBA studies. Finally, Table 4.1 indicates that 36 of the venturing graduates had taken entrepreneurship on the MBA programme while the remaining cohort of 84 had not started a business enterprise. Further detail on participating MBA graduates is provided below.

The study included a national sample of graduates who took their MBA degrees in the Republic of Ireland over a twelve year time period, 1992 to 2004. This section outlines the results of Section A of the survey instrument and highlights the personal profile of respondents. A breakdown of the response rate and year of graduation of each respondent is highlighted in Figure 4.1 below.

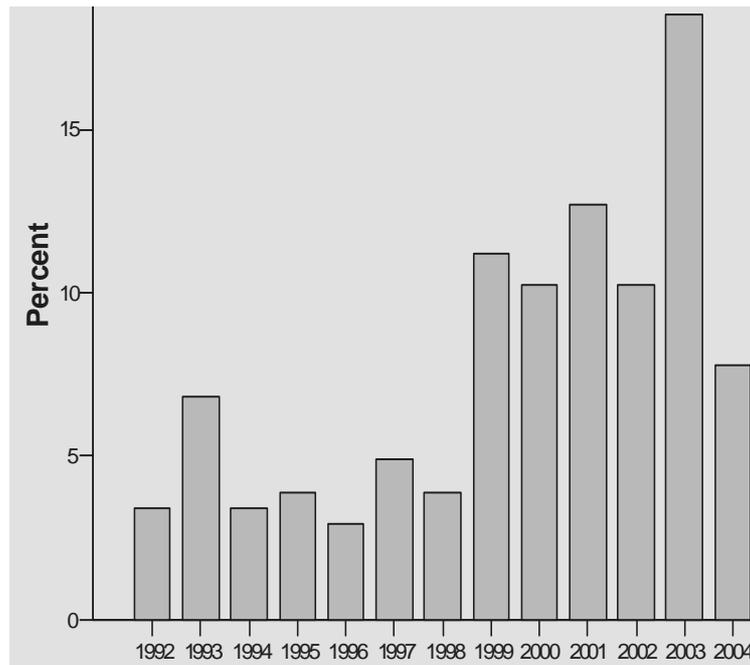


Figure 4.1 Year of completion of MBA programme (n=208)

Almost 60% of responding graduates obtained their MBA between 2000 and 2004 while the remainder graduated between 1992 and 1999. Some 18% (38 graduates) of those who responded obtained their qualification in 2003 while 3% (7 graduates) graduated in 1992. An overwhelming 92% of responding graduates were between the ages of thirty and forty nine (47% were thirty to thirty nine while 45% were forty to forty nine). A further 7% were over the age of fifty on completing the survey. This fact is hardly surprising since a major reason for graduates completing an MBA programme is career advancement and one would expect respondents in these age categories to be wanting to advance their career. What is perhaps more surprising

though is the gender balance of those who took part in the survey. The majority of respondents were male (85%) whilst 15% were female (31 graduates). Furthermore, 97% of respondents held a third level qualification prior to commencing their MBA. The academic areas of pre-MBA qualifications are highlighted in Figure 4.2 below. It indicates that 44% of responding graduates held a Business qualification prior to commencing their MBA while one-third had an Engineering or Science degree.

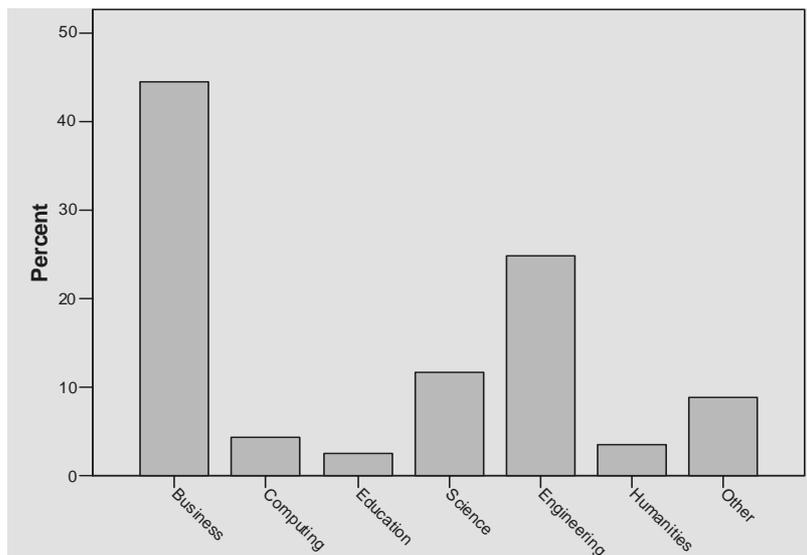


Figure 4.2 General area of pre-MBA qualifications

Computing, Humanities and Education amount to 9% of respondents' educational background while a further 9% is made up of the "Other" classification. This group of survey participants (totaling 18 graduates) included those with educational backgrounds within diverse disciplines such as Agriculture, Economics, Health, Law and Town Planning. Furthermore, a total of 66% of participating graduates had changed jobs since completing their MBA. The predominant job description of survey participants was at director, managerial and senior managerial levels (over 80% of respondents). Whether or not graduates had in fact changed jobs and/or careers, the

overall level of career satisfaction enjoyed by respondents appears extremely high.

This point is very clearly illustrated by Figure 4.3 below.

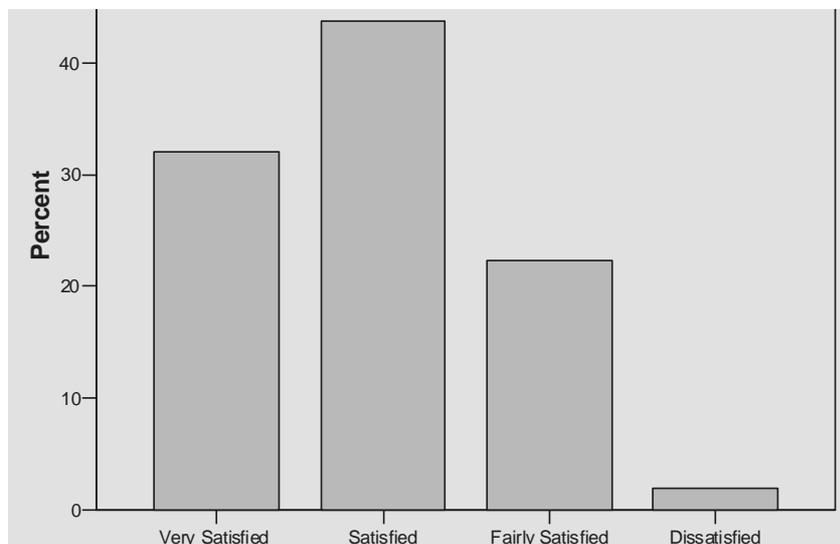


Figure 4.3 The level of career satisfaction of all MBA graduates

An impressive 75% of respondents indicated they were either “very satisfied” or “satisfied” with their career to date. A further 22% (46 graduates) highlighted that they were “fairly satisfied” with their career to date, while 2% (4 graduates) claimed to be “dissatisfied”. None of the respondents to the present study were “very dissatisfied” with their career. Finally, all graduates were asked whether there were entrepreneurship modules offered on their MBA (Figure 4.4 below).

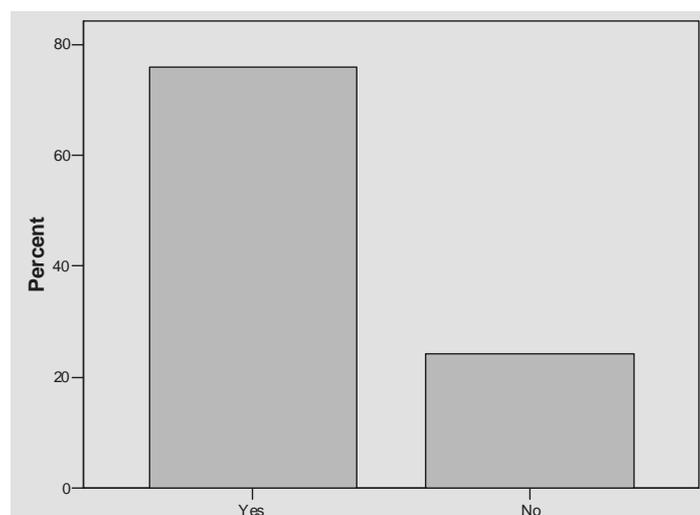


Figure 4.4 Entrepreneurship modules offered on the MBA course

Figure 4.4 highlights that over 75% (157 graduates) of respondents indicated that the University or Institute of Technology where they completed their MBA degree did offer an entrepreneurship module as part of the programme. This high propensity of entrepreneurship education offered on MBA curricula is hardly surprising given the enormous international growth and popularity attributed to the discipline in recent years (Menzies and Paradi 2003; Hytti and O’Gorman 2004; Kuratko, 2005; Hindle, 2006, Fayolle and Gailly, 2007; Vijay and Ball, 2007; Cooney and Murray 2008). Of those who had the opportunity of taking entrepreneurship on their MBA (n=158), over 76% (120 graduates) did so. Reasons for this decision are explored below.

4.3 Motivations and Experiences of Graduates who Studied Entrepreneurship

Section B of the survey instrument explored the motivations, views and experiences of those graduates who took entrepreneurship as part of their MBA (n=120). Participants were asked to explain their reasons for taking entrepreneurship and the results are illustrated in Figure 4.5 below.

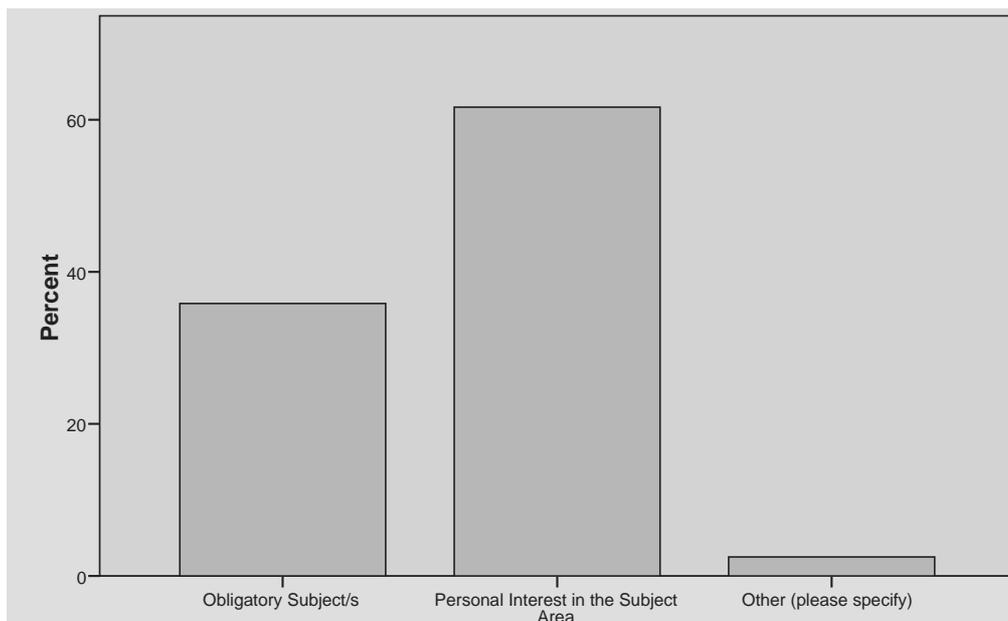


Figure 4.5 Motivations for taking entrepreneurship as a module (n=120)

Over 63% of participating graduates indicated they chose entrepreneurship on their MBA because of a personal interest in the subject. A similar finding was reported by Hill *et al.* (2003) in their study of Irish and USA based MBA graduates who also found that over 50% took entrepreneurship due to a personal interest in the subject area. Figure 5.5 also outlines that 36.8 % (43 graduates) stated they took the module because it was offered on an obligatory basis. A further 3 graduates answered “other” to explain their motivation for taking entrepreneurship. Their rationale varied from a desire avoid the alternative optional subjects (which they deemed to be unattractive) to a wish to pursue “something different” and partake in a class with an individual who had a reputation as a “good lecturer”. The main objectives expressed by graduates on taking the entrepreneurship module were many and varied. The “first ranked” (most important) objectives of survey participants are outlined in Figure 4.6 below.

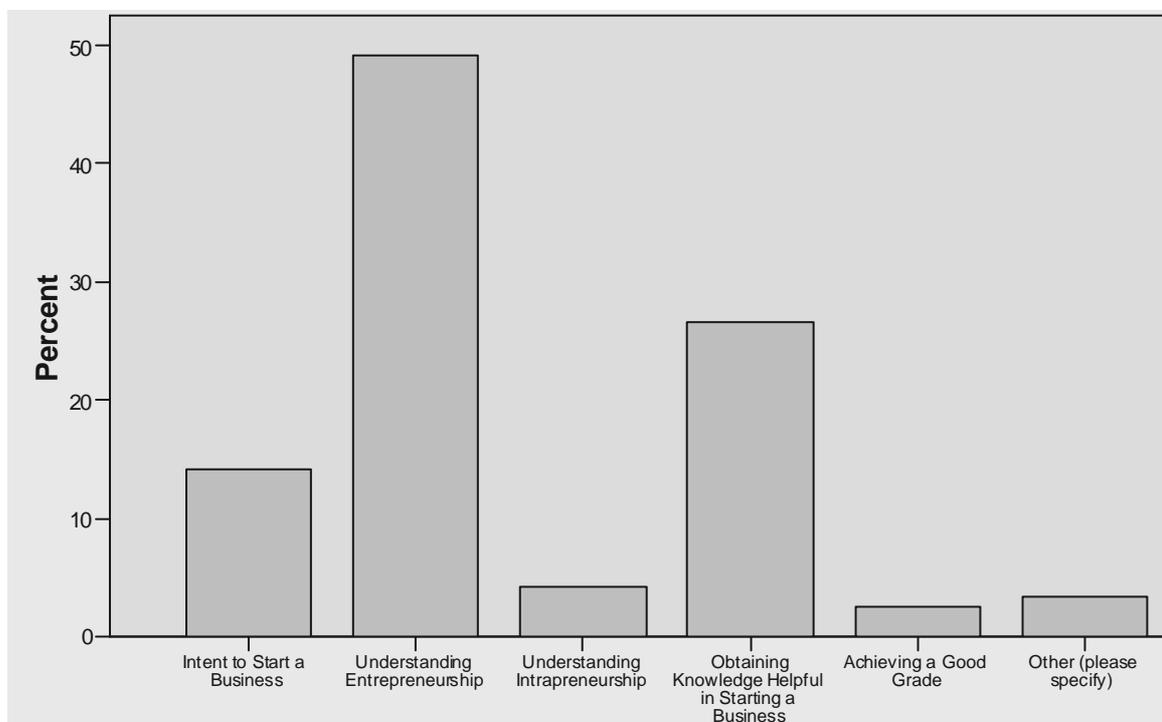


Figure 4.6 First ranked objective for taking entrepreneurship as part of MBA

Almost half (59 graduates) of respondents indicated their “first ranked” (most important) objective on taking entrepreneurship was to further their understanding of the subject. This perspective is typified by the response of one graduate outlined below.

I did the entrepreneurship course more as a knowledge build/mind broadening step than as a spring board to start my own business.

A further 41% of respondents indicated their rationale for taking the subject was either obtaining knowledge helpful for starting a business or an already existing intent to pursue entrepreneurship as a career option. One graduate entrepreneur observed:

I always wanted to start my own business and, accordingly, entrepreneurship on my MBA programme was an obvious choice for me.

Almost 7% of respondents highlighted that they took entrepreneurship to achieve a “good” grade or to further their understanding of the intrapreneurial process. When asked whether these objectives were realised subsequent to taking the module/s, an impressive 86% (102 graduates) answered in the positive. Some 85% of those who studied entrepreneurship took one module while the remaining 15% were exposed to two modules. An overwhelming 92% of survey participants believed the module/s resulted in them having a better understanding of entrepreneurship. One graduate succinctly noted:

The module offered a nice balance of theory and practice. I found both aspects very useful and important from a personal and professional perspective. I was highly satisfied with this aspect of the MBA.

The impact it had on their career decisions is outlined in Figure 4.7

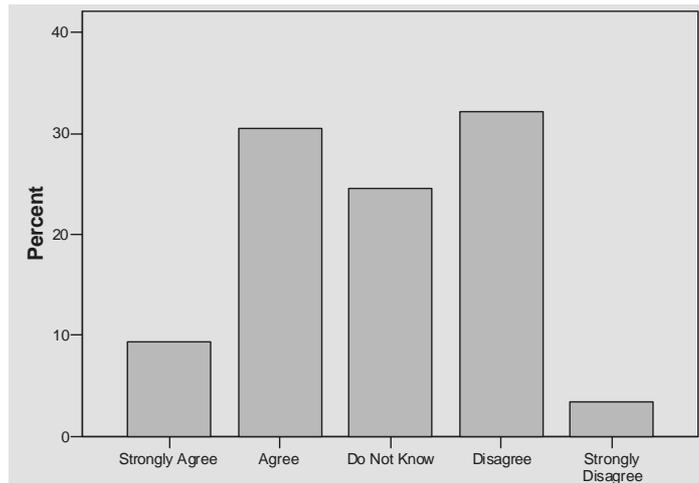


Figure 4.7 Impact of entrepreneurship module(s) on their career decision

Figure 4.7 indicates that almost 40% of responding MBA graduates either agree or strongly agree that studying entrepreneurship has had an important impact on subsequent career decisions (the current researcher notes that this percentage increases to 54% when looking exclusively at graduates who took entrepreneurship and subsequently ventured, n=35). One graduate respondent confided that:

Doing the Entrepreneurship course had a huge impact on my career. It developed an interest already there and crystallized my thoughts.....

Figure 4.7 also illustrates that while almost one-third of respondents disagreed that the entrepreneurship module/s on their MBA programme had an important impact on subsequent career decisions; a relatively high number of graduates did not know.

Accordingly, one interviewee confided:

It was the overall MBA experience (not just entrepreneurship) and all the modules taken, the projects, assignments, presentations and friendships that impacted on my subsequent career decisions.

Participants were also asked whether the entrepreneurship modules on their MBA programme were significant in terms of their aspiration to become an entrepreneur or continue entrepreneurial activity if already an entrepreneur (Figure 4.8 below).

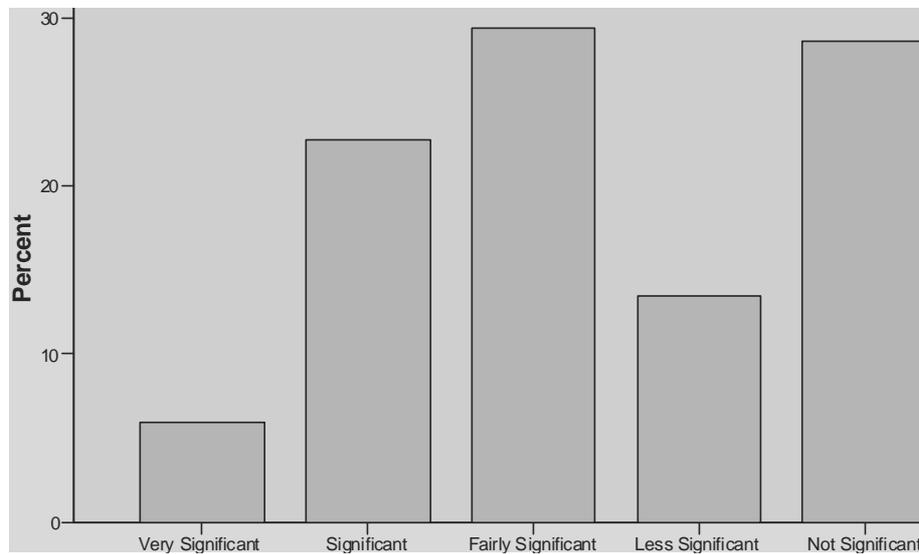


Figure 4.8 Significance of entrepreneurship module(s) in terms of entrepreneurial aspiration

While 28% believed the modules to be “not significant” in this regard, a total of 58% of respondents highlighted that entrepreneurship on the MBA programme had a “very significant”, “significant” or “fairly significant” impact. This perspective was typified by the comments of one respondent who stated:

It (the entrepreneurship module) was inspirational and showed that with hard work it is possible to do it.

Another interviewee (Interviewee D) concluded:

The entrepreneurship module on my MBA developed what was already there inside me, i.e., a deep desire to start my own business venture.

4.3.1 Respondents who had started a business

Section C of the survey instrument focused on those respondents who had started businesses. By way of background, it is interesting to report that 26.9% (n=56) of the total respondents (208 graduates) to the present survey had started their own business and the vast majority did so after completing their MBA programme. This is illustrated in Figure 4.9 below.

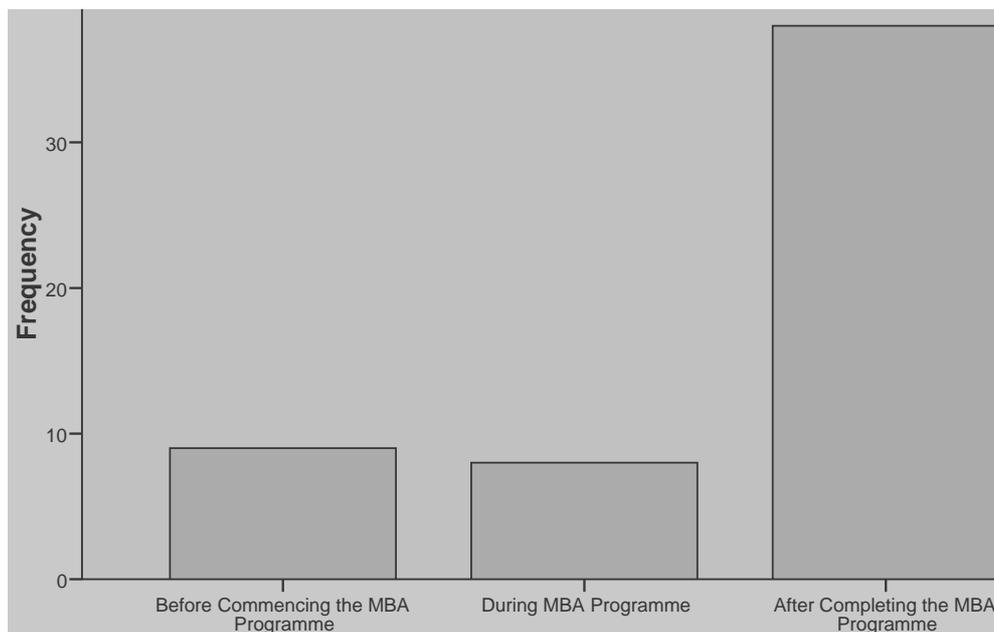


Figure 4.9 When MBA graduate's businesses were started

The total valid responses (n=55 as the question was not answered by one respondent even though the respondent had ventured) revealed an impressive 38 of respondents ventures were established subsequent to graduates completing their MBA. A further 9 enterprises had been created prior to entrepreneurs commencing their MBA while the remaining 8 of ventures were established while graduates were undertaking the programme. One respondent who ventured after completing his MBA stressed enthusiastically:

The MBA gave me the knowledge and confidence to succeed with my business. It enabled me to focus on my business as an entity and be outward looking, strategic, and more proactive and energetic with change.

Of those who took a module(s) of entrepreneurship as part of their MBA, the total number of ventures started was 35. In total, 66% (n=23) founded their venture after completing their MBA while a further 20% (n=7) did so during their MBA studies. Over a quarter are consultancy based, 14.5% compete within the food industry, 20% in construction and engineering and the remainder are information technology, retail, tourism, training and healthcare based. One MBA graduate entrepreneur contended that the timing of his business start-up relative to MBA completion was a key issue.

Accordingly, he notes:

I started my first business without any entrepreneurship (education) and while it was beneficial to learn on the job as I went along, I feel that the business would have grown more quickly and I would have made fewer mistakes if I had an entrepreneurship course beforehand.

The present research was keen to establish the primary reasons for respondents establishing their own businesses. Almost one-third (n=18) of those who ventured expressed that their primary start-up motivation (first ranked) was the identification of a business opportunity. This was typified by one participant, (Interviewee A), who noted:

My business start-up came about as a direct consequence of coming on a venture opportunity totally by chance. The opportunity was closely associated with the job I held at that particular time.

A further 23.6% indicated that experience from previous employment was their main reason for pursuing entrepreneurship as a career. Unemployment or displacement was cited by 14.5% of respondents while just over 7% stressed their family background as their key stimulus to starting-up an enterprise. A relatively low percentage (8%) of

graduates highlighted “other” reasons as their primary motivation for venturing. These included such diverse rationals as personal ambition, challenge, independence, lifestyle and wanting to be one's own boss. Many of the above themes are confirmed in the literature as “triggering factors” to entrepreneurship as a career option (Hisrich and Peters 1998; Carson *et al.* 1998; Fleming 1999; Wickham, 2001 Hill 2002). Interestingly, entrepreneurship education did not feature prominently with graduate entrepreneurs in terms of their “first ranked” motivation for start-up. Only one sole participant entrepreneur cited entrepreneurship education and training as the most important reason for establishing their business concern. However, this changes somewhat when the “second ranked” and “third ranked” reasons of graduate entrepreneurs are explored. Almost 8% of graduate entrepreneurs suggest that entrepreneurship education and training was their “second ranked” most important reason to establish a business while approximately 10% cited it as their “third ranked” motivator. One MBA graduate entrepreneur who did not list entrepreneurship education/training as a reason for start-up advised that:

No module or course can ever replace hands on experience but can be a useful reference and information source.

This preliminary data appears to place entrepreneurship education and training as being of somewhat lesser importance in the start-up process than other studies which have looked at undergraduate propensity to venture (Fleming 1999; Menzies and Parodi 2003). These relationships will be examined statistically later in this chapter. Of the graduates who have established their own ventures (n=56) 50% indicated they have started more than one business. Their current (most recent) business was established in the years outlined in Figure 4.10 below.

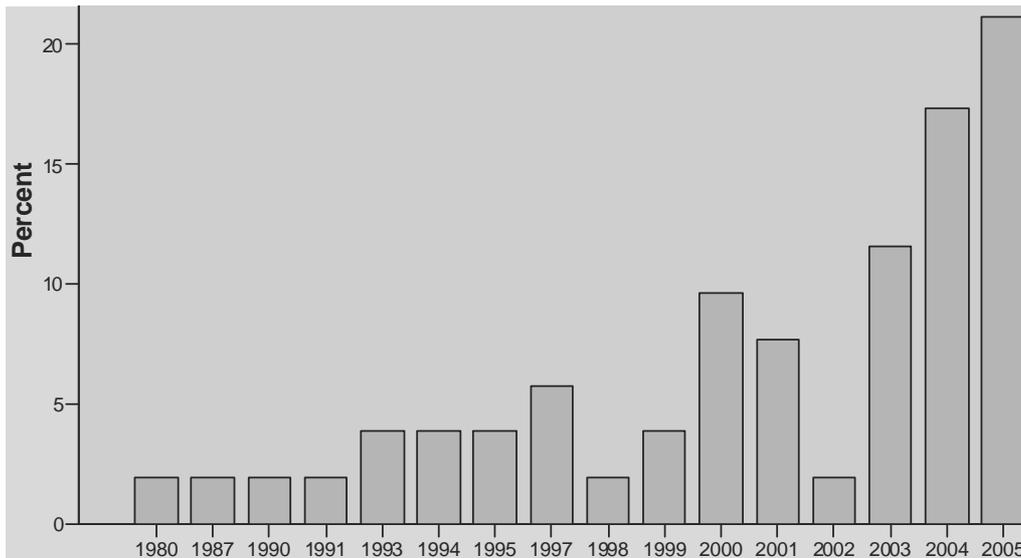


Figure 4.10 When graduates started their current business

Figure 4.10 illustrates that just over 21% of graduates established their ventures in 2005 while a further 29% started in either 2003 or 2004. In total, almost 70% of the businesses founded by survey respondents have been established since the year 2000. This can be compared to Figure 4.11, which identifies the year in which these graduates completed their MBA degree. It confirms that the majority of venturing respondents obtained their award subsequent to 1999.

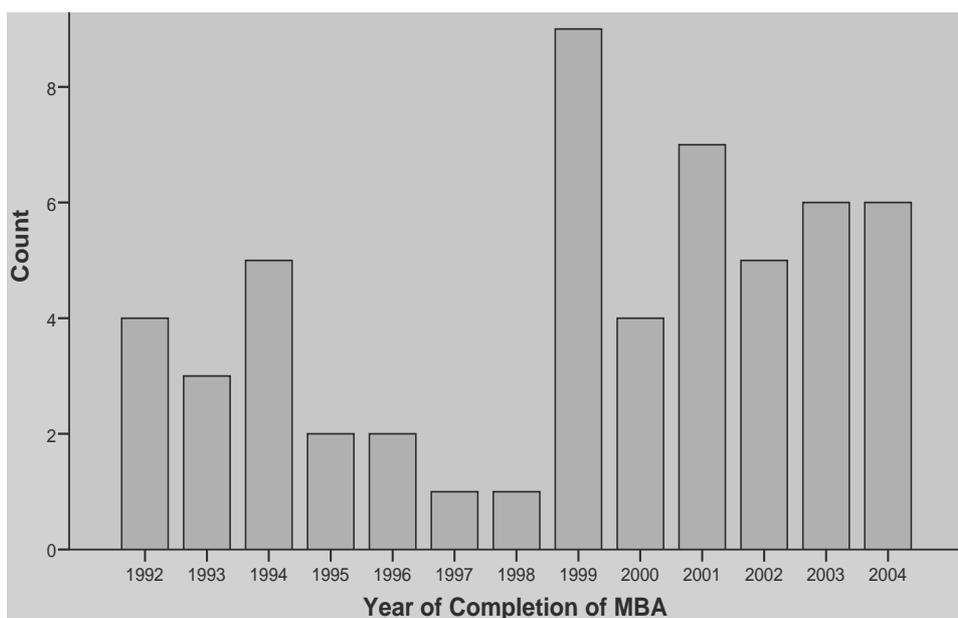


Figure 4.11 When venturing graduates completed their MBA

Figure 4.11 illustrates that of all respondents who ventured (n=55 as one graduate did not answer the question) 37 graduates (67.2%) completed their MBA degree between 1999 and 2004. The remaining 18 graduates (32.8%) did so between 1992 and 1998.

Furthermore, Figure 4.12 highlights employment levels within these enterprises. Respondents' ventures seemed to be small in size and growth lead in nature. Figure 4.12 illustrates that over 64% of responding entrepreneurs (35 graduates) report that they employ less than ten people. A further 30% of survey participants employ ten to forty nine people while the remaining ventures (6%) employ fifty to two hundred and forty nine staff.

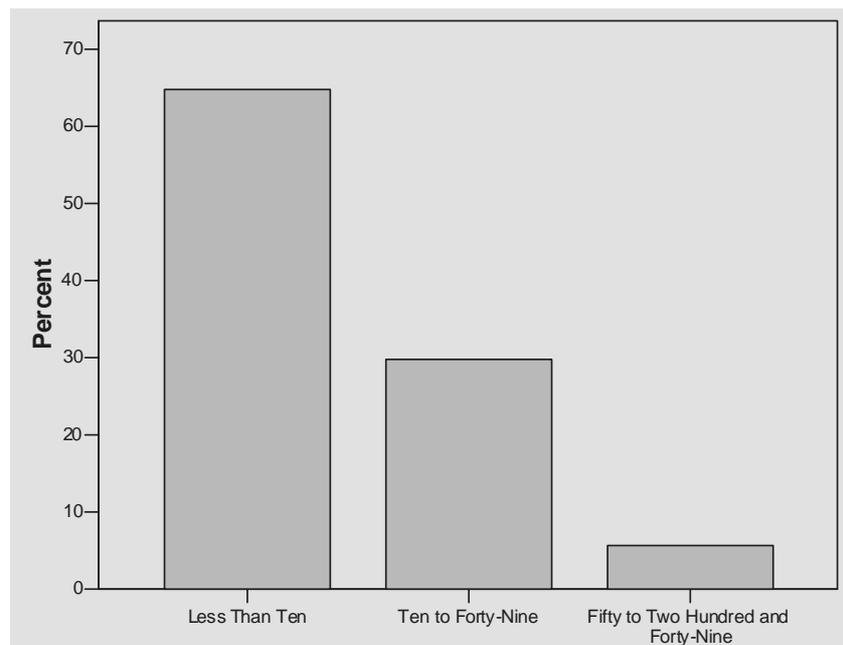


Figure 4.12 Employment levels within businesses

An impressive 72% of all responding entrepreneurs indicated that their annual sales had increased over the last three years. Furthermore, 56% of participating entrepreneurs report that their workforce has increased in the same time period. With

regard to profitability, 72% (36 graduates) outline increases over the last three years. In total, 49% of graduate entrepreneurs currently trade nationally, approximately one-third operate within regional catchments, while a further 17.6% conduct their business within an international context.

4.3.2 Respondents who did not start a business

The present research also attempted to explore the entrepreneurial intent among non-venturing graduates (n=152). Almost 58% of non-venturing graduates (89 graduates) indicated they were currently working in an organization that actively supported entrepreneurial skills development among employees, while 49.6% claimed to have been involved in an entrepreneurial project in their capacity as an employee. Figure 4.13 below examines the extent to which survey respondents believe their MBA modules were useful in fulfilling this type of role.

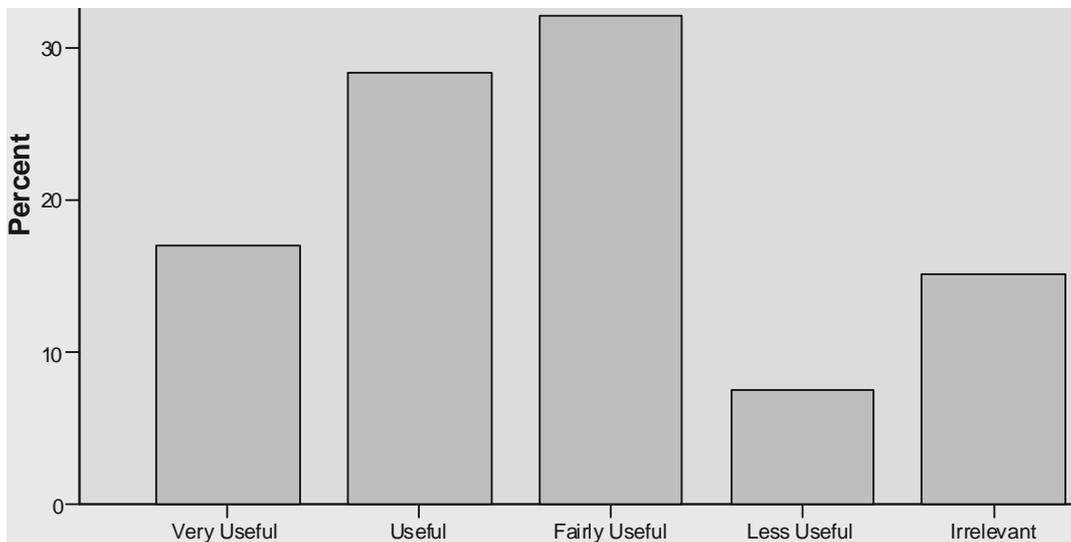


Figure 4.13 Extent to which entrepreneurship modules on the MBA were useful in employment

Figure 4.13 highlights survey respondents' views of the usefulness of MBA entrepreneurship modules when it comes to entrepreneurial activity by employees. A total of 45.2% of graduates suggested the modules were either very useful or useful in

this regard. Furthermore, almost one-third claimed they were fairly useful. The remaining 22.6% of participants deemed the entrepreneurship modules to be either less useful or irrelevant to them. One graduate respondent to the survey instrument highlighted:

Even though I have not started a business, I find I use the business plan approach in my everyday work in terms of putting forward projects which require capital funding. I am a public servant employee and these skills are now highly valued...

The current study also looked at the degree of entrepreneurial intent among those who have not started their own businesses. Of those who did not start a business (n=152), 71% claimed they have had an idea for a start-up venture. However the most important reason (“first ranked”) for not pursuing this business opportunity (48.5%) was contentment with their present career (52 graduates). In this regard, Interviewee C advised:

While I am interested in the concept of entrepreneurship as a possible career, I am currently very satisfied with my professional life and promotional opportunities therein.

A further 20% of participants highlighted a lack of capital as their most important reason for not pursuing their idea and 11% cited fear of failure. Fear of failure was rated the single most important issue in terms of “second ranked” and “third ranked” reasons and were 29.5% and 21% respectively.

Furthermore, graduates who had not started their own ventures were asked to indicate the degree of likelihood of doing so in the future (n=151). This is illustrated in Figure 4.14 below.

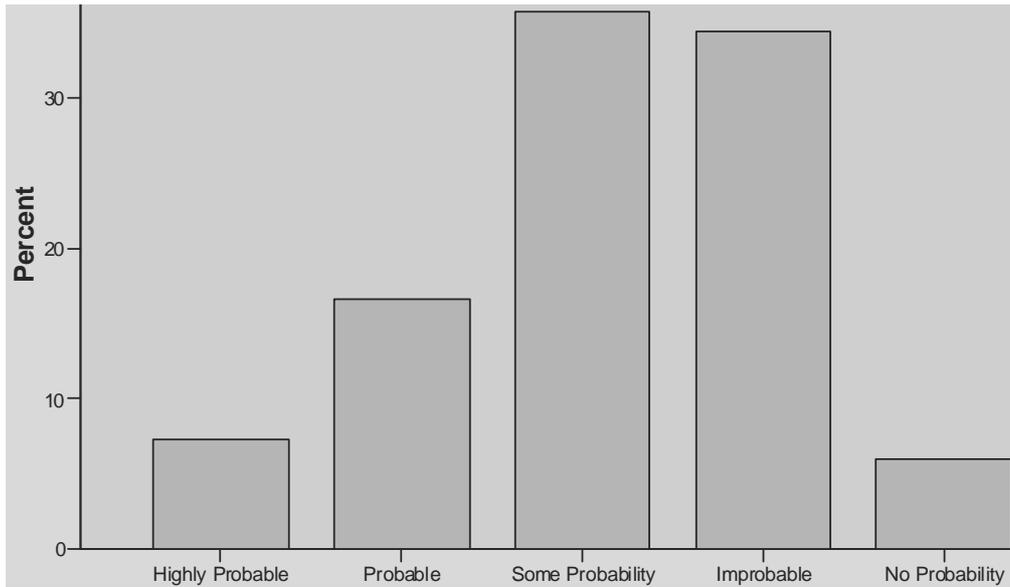


Figure 4.14 Intent to start a business in the future

Almost 24% of graduates indicated it was, in their view, either probable or highly probable they would start a business in the future. Some 35.7% believed there was some probability while just over 40% of participants claimed starting a business was improbable (or no probability). When asked to explain the extent to which they were actively seeking an idea for a new enterprise, only 13.2% of graduates indicated they were looking “to a large extent”. This indicates that while participants may be interested in starting a venture at some stage in the future, many of them believe it is not an immediate prospect. Likewise, almost 60% were actively seeking an idea for a new business “to some extent” or “to a very limited extent” while 27% were not looking at all. Of those responding graduates who took Entrepreneurship on their MBA (n=85), 26.5% contended it was either “highly probable” or “probable” they would start a venture. Similarly, almost 17% suggested they were seeing an idea for a new enterprise “to a large extent”. One participant confided:

Its what I have always wanted and the drive to start my own business remains as strong as ever. Entrepreneurship on my MBA degree was helpful in this regard.

The above data are highlighted to introduce some background information on the survey participants (n=208). Section 4.4 below explores the hypotheses and sub-hypotheses that underline the current research.

4.4 Statistical Analysis of Survey Findings

This section attempts to empirically address the overall research problem and hypotheses for the present research. The research problem explored in this study is as follows:

What influence does entrepreneurship education have on MBA graduates propensity to venture?

The research hypothesis formulated for the purposes of the present research is outlined below:

Null Hypothesis =

Ho *Entrepreneurship education is not an influencing factor in graduates' propensity to venture.*

Alternative Hypothesis =

Ha *Entrepreneurship education is an influencing factor in graduates' propensity to venture.*

The research hypothesis is further broken down into five sub-hypotheses which are directly linked to the research objectives for the study. These objectives are detailed below:

1. To explore the objectives of graduates on taking a course/s in entrepreneurship as part of their MBA.
2. To ascertain the level of career satisfaction of MBA graduates in Ireland.
3. To examine the impact of entrepreneurship courses on the careers of MBA graduates
4. To investigate the relationship between entrepreneurship education and the propensity of MBA graduates in Ireland to venture.
5. To evaluate the performance of ventures created by MBA graduates in Ireland.

The five sub-hypotheses, already outlined in Chapter 4, are re-stated below:

Sub-Hypothesis 1

To explore the objectives of graduates on taking a course/s in entrepreneurship as part of their MBA.

This sub-hypothesis examines whether graduates have differing objectives on taking entrepreneurship on their MBA. It emanates from work by Block and Stumpf (1992) who propose that graduates who take entrepreneurship and venture, have objectives on taking the module(s) that are different to those with no such entrepreneurial aspiration. This research proposition is tested below. The null-hypothesis (H_{01}) indicates that there is no such linkage whereas the alternative hypothesis (H_{a1}) articulates the Block and Stumpf (1992) perspective that there are indeed differences in the aforementioned objectives of graduates.

Null Hypothesis =

H₀₁ *There are no differences in the objectives of graduates who took entrepreneurship as a module and ventured, and the objectives of non-venturing graduates who took entrepreneurship as a module.*

Alternative Hypothesis =

H_{a1} *There are differences in the objectives of graduates who took entrepreneurship as a module and ventured, and the objectives of non-venturing graduates who took entrepreneurship as a module.*

Sub-Hypothesis 2

To ascertain the level of career satisfaction of MBA graduates in Ireland.

The second sub-hypothesis of this thesis explores the career satisfaction levels of MBA graduates in Ireland. Only one study in Ireland (Owusu-Ansah and Fleming 2001) has surveyed the career satisfaction levels of graduate entrepreneurs and this work indicated high satisfaction levels. Similar research is proposed by Block and Stumpf (1992) who stress the importance of empirically testing the degree of career satisfaction of MBAs who have had formal entrepreneurship education as part of their programme and those who have not. They suggest that graduates with such exposure will experience higher satisfaction levels. The present null-hypothesis (H₀₂) states that there is no such linkage whereas the alternative hypothesis (H₀₂) indicates that there is.

Null Hypothesis =

H₀₂ *Entrepreneurship courses have no impact on graduates' perceived career satisfaction.*

Alternative Hypothesis =

Ha2 Entrepreneurship courses have an impact on graduates' perceived career satisfaction.

Sub-Hypothesis 3

To examine the impact of entrepreneurship education on the careers of MBA graduates.

This sub-hypothesis explores the impact of entrepreneurship education on participants' careers to date. Give that raising graduates' awareness of entrepreneurship as a career is often cited as an objective of entrepreneurship education (McMullan and Vesper 2000), it is surprising that little work has been conducted in this area. An exception to this is the study conducted by Owuzu-Ansah and Fleming (2001). This indicated that there was a link between the career choices of graduates and entrepreneurship education. Consequently, Sub-Hypothesis 3 tests this. The null-hypothesis (H_{03}) suggests that there is no link between entrepreneurship education and the careers of MBA graduates and conversely, the alternative hypothesis (H_{a3}) states that such a relationship does exist.

Null Hypothesis =

H₀₃ Entrepreneurship courses have no impact on the careers of MBA graduates.

Alternative Hypothesis =

Ha3 Entrepreneurship courses have an impact on the careers of MBA graduates.

Sub-Hypothesis 4

To investigate the relationship between entrepreneurship education and the propensity of MBA graduates in Ireland to venture.

While the widespread growth in entrepreneurship education is extensively documented within the literature (Hindle 2007; Gibb 2008; Katz 2008; Shinnar et al. 2009), there has been limited research consideration into the outcomes of such provisions and specifically graduates' propensity to venture. Sub- Hypothesis 4 builds on the small number of studies that have been conducted. Some of this previous work has established a link between entrepreneurship education and the propensity of graduates to venture (Menzies and Paradi 2003) while other have not (Hindle 2002). Consequently, this sub-hypothesis tests this proposition. The null-hypothesis (Ho4) proposes that there is no such relationship and the alternative hypothesis (Ha4) suggest that the aforementioned relationship does exist.

Null Hypothesis =

Ho4 Entrepreneurship education has no impact on graduate propensity to venture.

Alternative Hypothesis =

Ha4 Entrepreneurship education has an impact on graduate propensity to venture.

Sub-Hypothesis 5

To evaluate the performance of ventures created by MBA graduates in Ireland.

As already alluded to in Chapter 1, this sub-hypothesis has been identified within the literature as an important area worthy of research consideration. It suggests that graduate entrepreneurs with entrepreneurship education will perform better (size of enterprise, employment levels, profitability) than their entrepreneurial peers who have not been exposed to entrepreneurship education. Sub-hypothesis 5 tests this relationship as the null-hypothesis (H₀₅) indicates there is no such link while the alternative hypothesis (H_{a5}) suggests there is.

Null Hypothesis =

H₀₅ *Entrepreneurship education has no impact on the economic performance of business.*

Alternative Hypothesis =

H_{a5} *Entrepreneurship education has an impact on the economic performance of business.*

Each of the research sub-hypotheses are linked to a research objective. These are statistically explored in the remainder of this section. The statistical methods used are Fisher's exact test and Pearson chi-square analysis. Fisher's exact test is a statistical aid, which tests the strength of associations between variables. It is primarily used when table cells are less than five (< 5) in value. Likewise, the chi-square test is a formal statistical procedure that facilitates assessment of the strength of association between variables. It is used when table cells have a value greater than five (> 5). Cooper and Schindler (2003) advise that it is particularly useful in tests involving nominal data and when the persons, events or objects being measured are grouped in two or more nominal categories. They explain:

Using this technique, we test for significant differences between the observed distribution of data among categories and the expected distribution based on the null hypothesis. Chi-square is useful in cases of one sample analysis, two independent samples. It must be calculated with actual counts rather than percentages.

(Cooper and Schindler 2003, p.536)

Chapter 3 further alludes to the fact that in a small number of cases, bivariate analysis is used within the present chapter. This is done through the Pearson correlation test. Bivariate analysis attempts to measure the likelihood of a number of factors (more than one) affecting a decision (Lind *et al.*, 2002; Blumberg *et al.*, 2005). A value of less than 50% ($< .5$) normally indicates a limited degree of association between variables.

The current chapter also details results of the face-to-face interviews conducted as part of the present work. These face-to-face interviews were conducted in Autumn 2008 and involved six randomly selected MBA survey participants (five males and one female). Four of these graduates had taken entrepreneurship as part of their MBA programme and two had not. Furthermore, a total of three participants started businesses subsequent to completing their MBA while the remaining three hold managerial positions within the private (one) and public sectors. Table 4.2 below summarises data on each of the interviewees.

Table 4.2 Introductory data on each of the face-to-face interviewees

Interviewee I.D	Year of Completion MBA	Studied Entrepreneurship?	Gender	Started Business?
Interviewee A	1993	Yes	Male	Yes
Interviewee B	1997	No	Male	Yes
Interviewee C	1993	Yes	Male	No
Interviewee D	2003	Yes	Female	Yes
Interviewee E	2004	Yes	Male	No
Interviewee F	1992	No	Male	No

4.4.1 Sub-Hypothesis 1

Sub-hypothesis 1 seeks to explore the objectives of graduates, venturing and those who have not ventured, on taking a course/s in entrepreneurship as part of their MBA.

Null Hypothesis =

H_{01} *There are no differences in the objectives of graduates who took entrepreneurship as a module and ventured and the objectives of non-venturing graduates who took an entrepreneurship as a module.*

Alternative Hypothesis =

H_{a1} *There are differences in the objectives of graduates who took entrepreneurship as a module and ventured and the objectives of non-venturing graduates who took an entrepreneurship as a module.*

Sub-Hypothesis 1 will be statistically examined using a number of different data sets from the present survey. The first of these, Table 4.3, is highlighted below.

Table 4.3 Reasons for taking entrepreneurship and whether a business was started

			Have you started your own business?		Total
			Yes	No	
Why did you take the Entrepreneurship as part of your MBA programme?	Obligatory Subject/s	Count	12	31	43
		% within Have you started your own business?	33.3%	38.3%	36.8%
		% of Total	10.3%	26.5%	36.8%
	Personal Interest in the Subject Area	Count	24	50	74
		% within Have you started your own business?	66.7%	61.7%	63.2%
		% of Total	20.5%	42.7%	63.2%
Total	Count	36	81	117	
	% within Have you started your own business?	100.0%	100.0%	100.0%	
	% of Total	30.8%	69.2%	100.0%	

Table 4.3 outlines those respondents who have (and have not) started a venture. A total of 36 venturing graduates are included (a further 12 entrepreneurs were not offered entrepreneurship and a further 8 did not take it as a subject). This is compared to the objectives graduates had in undertaking their entrepreneurship module/s on the MBA programme (n=117). It can be seen that the two reasons given for taking entrepreneurship were “obligatory subject” and a “personal interest in the subject area”. In the original survey instrument there was a third option open to students, “other”. This was not included for statistical reasons as only three graduates selected it and gave very limited detail. In total 36.8% (n=43) of participants claimed the reason they took entrepreneurship was because it was obligatory while 63.2% suggested they had an interest in the subject. Of those who started a business venture, twice as many took entrepreneurship because of a personal interest in the subject. In this regard, Interviewee D confided:

Entrepreneurship was a major reason for taking the MBA in the first instance. I knew that this module would be of great importance to me, and my future career aspirations.

This figure is not as high for those who have not ventured with 38.3% taking entrepreneurship because it was obligatory and 61.7% choosing it because of personal interest. The relationship is tested in Table 4.4 below.

Table 4.4 Pearson chi-square test for reasons for taking entrepreneurship and whether a business was started

Chi-square	Degrees of Freedom	Asymp. Sig
.261	1	.609

The Pearson chi-square test is presented in Table 4.4 above with a critical value of $\chi^2 = 3.84$. It identifies that there is no significant difference ($\chi^2 = .261$ $p = .609$) between the reasons for graduates taking entrepreneurship and whether a business was started, at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis (H_0) is not rejected. This finding was further confirmed through the face-to-face interviews. Of the four who had taken entrepreneurship, all indicated that they chose to do so because of a “personal interest” in the subject area. For example, Interviewee C, a recently retired executive with an enterprise support agency, stated:

I had a personal and professional interest in entrepreneurship and taking it on the MBA programme enabled me to increase my knowledge and skills within the area.

Likewise, Interviewee A talked of his long-standing and deep personal interest in entrepreneurship and that he had already started a business before commencing his MBA. He started a second venture after graduating and further suggested:

I was always interested in entrepreneurship and, having already started one business, studying it on my MBA enabled me to increase my level of awareness of small business and the generating of ideas for new businesses.

It is interesting to examine these relationships with regard to differing objectives among those who started ventures. This is outlined in Table 4.5 below.

Table 4.5 Reasons for taking entrepreneurship and when the business was started

			Please indicate when you started your business.		Total
			Before Commencing the MBA Programme	During/After Completing MBA Programme	
Why did you take the Entrepreneurship as part of your MBA programme?	Obligatory Subject/s	Count	3	9	12
		% within Please indicate when you started your business.	60.0%	30.0%	34.3%
	Personal Interest in the Subject Area	Count	2	21	23
		% within Please indicate when you started your business.	40.0%	70.0%	65.7%
		% of Total	8.6%	25.7%	34.3%
		% of Total	5.7%	60.0%	65.7%
Total	Count		5	30	35
	% within Please indicate when you started your business.		100.0%	100.0%	100.0%
	% of Total		14.3%	85.7%	100.0%

Even though 56 respondents identified they started a business, for this particular question only 35 valid responses were received. Consequently, Table 4.5 identifies that 70% of responding graduates who started ventures during or subsequent to completing the MBA, undertook the entrepreneurship module/s because of a personal interest in the subject area while the remainder (9 graduates) took the subject because it was obligatory. This is further explored through Fisher's exact test in Table 4.6 below.

Table 4.6 Was starting a business a result of taking entrepreneurship?

Fisher's Exact Test	Exact Sig. (2-sided)
	.313

Table 4.6 outlines an exact significance value of $p = .313$. There is a critical value of 0.05. This indicates an exact significance value greater than the test value (p value >

0.05). Accordingly, there is no significant difference in the sample analysis and no link between reasons for taking entrepreneurship on the MBA and when businesses were started. Therefore the null hypothesis is not rejected. This is confirmed in the face-to-face interviews conducted as part of the current research. Interviewee D explains:

I studied entrepreneurship on my MBA because of my personal interest in the subject. I enjoyed the module and started my business during the MBA. I ventured because an opportunity presented itself...I always knew I would start a business and would have done so had I not studied entrepreneurship on the MBA.

Likewise, Table 4.7 explores the same proposition using the Pearson Correlation test.

Table 4.7 Was starting a business a result of taking entrepreneurship?

Pearson Correlation Value .425

Table 4.7 highlights that within the comparison outlined above, the Pearson correlation test suggests a moderate linkage between the variables (42.5%). The “first ranked objective” on taking entrepreneurship and whether a business was started is highlighted within Table 4.8 below

Table 4.8 First ranked objective on taking entrepreneurship and whether a business has been started

			Have you started your own business?		Total
			Yes	No	
q12 Intent to start a business	No	Count	15	59	74
		% within Have you started your own business?	41.7%	70.2%	61.7%
		% of Total	12.5%	49.2%	61.7%
	Yes	Count	21	25	46
		% within Have you started your own business?	58.3%	29.8%	38.3%
		% of Total	17.5%	20.8%	38.3%
Total	Count	36	84	120	
	% within Have you started your own business?	100.0%	100.0%	100.0%	
	% of Total	30.0%	70.0%	100.0%	

Table 4.8 illustrates that 21 of those graduates who listed “intent to start a business” as their main objective in taking entrepreneurship on the MBA programme (n=46), subsequently ventured. Table 4.9 examines this statistically.

Table 4.9 Pearson chi-square test for “First Ranked” reason for taking entrepreneurship and whether a business was started

Chi-square	Degrees of Freedom	Asymp. Sig
8.702	1	.003

The Pearson chi-square test is highlighted in Table 4.9 above. It identifies that at the 95% confidence level ($p < 0.05$), there is a significant difference ($\chi_s^2 = 8.702$ $p = .003$) between graduates’ “first ranked” reason for taking entrepreneurship and whether a business was started. Therefore the null hypothesis is rejected in favour of the alternative hypothesis. Interviewee A affirmed this result by indicating:

It was the only subject on the MBA that related to small business and one of the most important ones. I took it because of my interest in the subject area and because I knew I wanted to start a business.

The present research also attempted to study whether the objectives of graduates on taking entrepreneurship were in fact met. This is detailed below (Table 4.10) for those who have and have not established a venture.

Table 4.10 The realisation of objectives for those who have taken entrepreneurship and venturing rates

			Have you started your own business?		Total
			Yes	No	
Were these objectives realised on taking the Entrepreneurship module/s?	Yes	Count	29	73	102
		% within Have you started your own business?	82.9%	88.0%	86.4%
		% of Total	24.6%	61.9%	86.4%
	No	Count	6	10	16
		% within Have you started your own business?	17.1%	12.0%	13.6%
		% of Total	5.1%	8.5%	13.6%
Total	Count	35	83	118	
	% within Have you started your own business?	100.0%	100.0%	100.0%	
	% of Total	29.7%	70.3%	100.0%	

Table 4.10 clearly illustrates that an overwhelming number of participating MBA graduates who established a business (n=35), and did not establish new ventures (n=83), indicated that their objectives on doing entrepreneurship were met. In this regard, Interviewee D advised:

Without question, the entrepreneurship module studied on the programme (MBA) was one of the most relevant for me and, in fact, exceeded the expectations of me, and many others in my class.

This relationship is tested statistically in Table 4.11 below.

Table 4.11 Pearson chi-square test for the realisation of objectives for those who have taken entrepreneurship and venturing rates

Chi-square	Degrees of Freedom	Asymp. Sig
.545	1	.460

The Pearson chi-square test is presented in Table 4.11 above with a critical value of $\chi^2 = 3.84$. It highlights that there is no significant difference ($\chi^2 = .545$ $p = .460$) between the realisation of objectives for those who have taken entrepreneurship and venturing rates, at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected. This relationship can be further explored specifically for those who have started ventures subsequent to completing their MBA programme (n=23). In total, almost 80% viewed that their original objectives on taking entrepreneurship had been met (n=18). The remaining graduates who started businesses subsequent to graduation (21.7%) expressed that these objectives were not met. This is expressed statistically in Table 4.12.

Table 4.12 Pearson chi-square test for the realisation of objectives for those who ventured subsequent to MBA graduation

Chi-square	Degrees of Freedom	Asymp. Sig
1.392	1	.238

The Pearson chi-square test is presented in Table 4.12 above with a critical value of $\chi^2 = 3.84$. It identifies that at the 95% confidence level ($p > 0.05$), there is no significant difference ($\chi^2 = 1.392$ $p = .238$) in the realisation of objectives for those who ventured subsequent to their MBA graduation. Consequently, the null hypothesis is not rejected.

Statistically, the clear and dominant trend with Sub-Hypothesis 1 indicates that the null hypothesis is not rejected. This is further supported by the face-to-face interviews and summarised through the thoughts of interviewee E, an executive within the banking sector:

I studied entrepreneurship on the MBA because of my strong interest in the area and I believe that the majority of my peers (entrepreneurs and non-entrepreneurs) were the same.

4.4.2 Sub-Hypothesis 2

Sub-hypothesis 2 attempts to ascertain the level of career satisfaction of MBA graduates in Ireland.

Null Hypothesis =

H₀₂ Entrepreneurship courses have no impact on graduates' perceived career satisfaction.

Alternative Hypothesis =

H_{a2} Entrepreneurship courses have an impact on graduates' perceived career satisfaction.

Firstly, the present research attempted to contrast the career satisfaction levels of those exposed to entrepreneurship education and those who were not (Table 4.13).

Table 4.13 Exposure to entrepreneurship and extent of career satisfaction

			How satisfied are you with your career to date?		Total
			Very Satisfied/ Satisfied	Fairly Satisfied/ Dissatisfied	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	93	26	119
		% within How satisfied are you with your career to date?	78.8%	66.7%	75.8%
		% of Total	59.2%	16.6%	75.8%
	No	Count	25	13	38
		% within How satisfied are you with your career to date?	21.2%	33.3%	24.2%
		% of Total	15.9%	8.3%	24.2%
Total		Count	118	39	157
		% within How satisfied are you with your career to date?	100.0%	100.0%	100.0%
		% of Total	75.2%	24.8%	100.0%

Table 4.13 indicates that of all participating graduates (n=157), a total of 75.8% (n=119) took entrepreneurship. Of those who took an entrepreneurship module(s), 78.1% were either “very satisfied” or “satisfied” with their career to date. A further 21.8 % who had exposure to entrepreneurship on their MBA programme believed themselves to be “fairly satisfied” or “dissatisfied”. Furthermore, of the 38 graduates with no exposure to entrepreneurship on their MBA, 65.7% indicated that they were “very satisfied” or “satisfied” with their careers to date while the remaining 34.2 suggested that they were either “fairly satisfied” or “dissatisfied”. It seems that a higher proportion of graduates with entrepreneurship expressed that they were either “very satisfied” or “satisfied” with their career to date (78.1%). Conversely, a lower percentage indicated that they were either “very satisfied” or “satisfied” (21.8%). This is explored statistically in Table 4.14 below.

Table 4.14 Pearson chi-Square test for exposure to entrepreneurship and extent of career satisfaction

Chi-square	Degrees of Freedom	Asymp. Sig
4.290	3	.232

The Pearson chi-square test outlined in Table 4.14 above (with a critical value of $\chi^2_t = 7.81$) identifies that there is no significant difference ($\chi^2_s = 4.290$ $p = .232$) between exposure to entrepreneurship and the extent of career satisfaction. This was at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected. Evidence from the interviews also supports the statistical findings mentioned above. Interviewee C was of the opinion that even though he gained credibility among his peers, it was the overall MBA programme rather than the entrepreneurship module on its own that resulted in gaining credibility. He further explains:

I believe all of this (perceived benefits of the MBA programme) increased my job satisfaction levels. Did the Entrepreneurship module on the MBA increase my job satisfaction? I believe not that much. It was the overall MBA experience.

This is further confirmed by Interviewee B, an entrepreneur who did not study entrepreneurship as part of his MBA programme. He confided that he has a high degree of career satisfaction. This, he believes, emanates from the success enjoyed with his business venture (retail grocery sector), much of which he attributes to the broad strategic perspective included on his MBA programme. He expanded on this by saying:

While I would have liked to take an Entrepreneurship module as part of my MBA, I am not convinced it would have impacted significantly on my business model, business success and my subsequent career satisfaction.

Likewise, Interviewee F, a senior public servant who did not take an entrepreneurship on his MBA concurred with the above:

I did not take an entrepreneurship module on my MBA programme but am very satisfied with my career. I do not think taking entrepreneurship on the MBA would have impacted on this.

Another theme explored within Sub-Hypothesis 2 is the relationship between the career satisfaction levels of MBA graduates and the number of entrepreneurship modules they took on their programme. This can be seen in Table 4.15 below (n=119). In total, 84.9% took one entrepreneurship module while the remaining 15.1% were exposed to two modules. Of those respondents who studied one entrepreneurship module 79.3% claimed to be “very satisfied” or “satisfied” with their career to date. The remaining 20.7% regarded themselves as being either “fairly satisfied” or “dissatisfied”.

Table 4.15 Differing exposure to entrepreneurship and extent of career satisfaction

			How satisfied are you with your career to date?		Total
			Very Satisfied/ Satisfied	Fairly Satisfied/ Dissatisfied	
How many Entrepreneurship module/s did you study on your MBA programme?	One Module	Count	80	21	101
		% within How satisfied are you with your career to date?	86.0%	80.8%	84.9%
		% of Total	67.2%	17.6%	84.9%
	Two Modules	Count	13	5	18
		% within How satisfied are you with your career to date?	14.0%	19.2%	15.1%
		% of Total	10.9%	4.2%	15.1%
Total	Count	93	26	119	
	% within How satisfied are you with your career to date?	100.0%	100.0%	100.0%	
	% of Total	78.2%	21.8%	100.0%	

Conversely, of those graduates with two entrepreneurship modules (n=18), 72.2% regarded themselves as “very satisfied” or “satisfied” with their career to date and the remaining 27.7% contended they were either “fairly satisfied” or “dissatisfied”. These relationships are further explored in Table 4.16 using the Pearson chi-square test.

Table 4.16 Pearson chi-square test for differing graduate exposure to entrepreneurship education and extent of career satisfaction

Chi-square	Degrees of Freedom	Asymp. Sig
2.049	3	.562

The Pearson chi-square test is presented in Table 4.16 above with a critical value of $\chi^2 = 7.81$. It identifies that there is no significant difference ($\chi^2 = 2.049$ $p = .562$) relating to differing exposure to entrepreneurship education and the extent of career satisfaction, at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected.

The current research also attempted to examine the career satisfaction levels of those graduates who have ventured and those who have not. This is included in Table 4.17 below.

Table 4.17 Graduate business start-ups and career satisfaction levels

			How satisfied are you with your career to date?		Total
			Very Satisfied/ Satisfied	Fairly Satisfied/ Dissatisfied	
Have you started your own business?	Yes	Count	43	13	56
		% within How satisfied are you with your career to date?	27.6%	26.0%	27.2%
		% of Total	20.9%	6.3%	27.2%
	No	Count	113	37	150
		% within How satisfied are you with your career to date?	72.4%	74.0%	72.8%
		% of Total	54.9%	18.0%	72.8%
Total	Count	156	50	206	
	% within How satisfied are you with your career to date?	100.0%	100.0%	100.0%	
	% of Total	75.7%	24.3%	100.0%	

Table 4.17 includes responses from those graduates who have and have not started ventures (n=206). Of those graduates who started their own businesses (n=56), a total of 76.7% indicated they were “very satisfied” or “satisfied” with their career to date.

The remaining 23.2% claimed they were “fairly satisfied” or “dissatisfied”. Interestingly, of those graduates who did not start a business (n=150), 75.3% indicated they were “very satisfied” or “satisfied” with their career to date. Furthermore, 24.6% suggested they were “fairly satisfied” or “dissatisfied”. Table 4.18 further explores this.

Table 4.18 Pearson chi-square test for business start-ups and graduate career satisfaction levels

Chi-square	Degrees of Freedom	Asymp. Sig
1.746	3	.627

The Pearson chi-square test outlined in Table 4.18 above (with a critical value of $\chi^2 = 7.81$) identifies that there is no significant difference ($\chi^2 = 1.746$ $p = .627$) between business start-ups and graduate career satisfaction levels, at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected. This result is confirmed by Interviewee F, a senior public servant who did not take entrepreneurship on his MBA. He advises:

I have not started my own business but am very satisfied with my career to date. I find my current job very challenging but I enjoy this aspect of the role. I have no regrets and am glad I took the career opportunities I did.

Furthermore, Interviewee B who started businesses both before and after completing his MBA, observed that:

I have always had a high degree of personal career satisfaction but also know lots of people, both personally and professionally, who have not started business ventures and who are the same.

Likewise, Interviewee A indicated:

I have always be very happy in my work and while I am delighted I have started my businesses, I am sure that I would be also be satisfied had I taken the other career options that were open to me.

Again, the overwhelming trend within Sub-Hypothesis 2 is that the null hypothesis is not rejected.

4.4.3 Sub-Hypothesis 3

The objective of sub-hypothesis 3 is to explore the extent to which Entrepreneurship courses have an impact on the careers of MBA graduates.

Null Hypothesis =

H₀₃ Entrepreneurship courses have no impact on the careers of MBA graduates.

Alternative Hypothesis =

H_{a3} Entrepreneurship courses have an impact on the careers of MBA graduates.

The first area to explore is to compare graduates who have changed jobs since completing their MBA (n=158). This is highlighted in Table 4.19 below. In total, of those who changed jobs since completing the MBA, 72.6% took entrepreneurship while 27.4% were not exposed to the subject.

Table 4.19 Exposure to entrepreneurship and extent of changing jobs on MBA completion

			Changed Jobs since Completing MBA.		Total
			Yes	No	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	77	43	120
		% within Changed Jobs since Completing MBA.	72.6%	82.7%	75.9%
		% of Total	48.7%	27.2%	75.9%
	No	Count	29	9	38
		% within Changed Jobs since Completing MBA.	27.4%	17.3%	24.1%
		% of Total	18.4%	5.7%	24.1%
Total	Count	106	52	158	
	% within Changed Jobs since Completing MBA.	100.0%	100.0%	100.0%	
	% of Total	67.1%	32.9%	100.0%	

Graduates who did not change jobs amounted to 32.9% (n=52), 82.7% had studied entrepreneurship on their MBA programme. The remaining 17.3% (9 graduates) did not have any exposure to entrepreneurship. The chi-square analysis of this relationship is noted in Table 4.20.

Table 4.20 Pearson chi-square test for exposure to entrepreneurship and extent of changing jobs on MBA completion

Chi-square	Degrees of Freedom	Asymp. Sig
1.929	1	.165

The Pearson chi-square test presented in Table 4.20 (with a critical value of $\chi^2 = 3.84$) identifies that there is no significant difference ($\chi^2 = 1.929$ $p = .165$) relating to exposure to entrepreneurship education and the extent of job changing since MBA completion, at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected. This result is confirmed by Interviewee A who advised:

I changed jobs because of an opportunity that came about totally by chance. While entrepreneurship on the MBA was important to me, it did not feature in this regard.

This view was further stressed by Interviewee E who claims that:

I changed jobs because of an opportunity and an element of luck. It was not because of taking the entrepreneurship module on the MBA.

The present research was interested in examining graduate career change on completing the MBA, and exposure to entrepreneurship education. This is highlighted in Table 4.21 below.

Table 4.21 outlines that of all responding graduates (n=156), 39.1% changed careers since MBA completion.

Table 4.21 Exposure to entrepreneurship and extent of career change since completing the MBA

			Changed Careers since Completing the MBA.		Total
			Yes	No	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	49	70	119
		% within Changed Careers since Completing the MBA.	80.3%	73.7%	76.3%
	No	% of Total	31.4%	44.9%	76.3%
		Count	12	25	37
Total		% within Changed Careers since Completing the MBA.	19.7%	26.3%	23.7%
		% of Total	7.7%	16.0%	23.7%
		Count	61	95	156
		% within Changed Careers since Completing the MBA.	100.0%	100.0%	100.0%
		% of Total	39.1%	60.9%	100.0%

Of these, 80.3% took entrepreneurship on their MBA while 19.7% of graduates did not. With regard to graduates who did not change careers, 73.7% studied entrepreneurship while 26.3% did not. It seems that a high proportion of both graduate groups (those who changed careers and those who did not) did take entrepreneurship on their MBA programme. Table 4.22 further examines this.

Table 4.22 Pearson chi-square test for exposure to entrepreneurship and extent of career change

Chi-square	Degrees of Freedom	Asymp. Sig
.906	1	.341

The Pearson chi-square test is outlined in Table 4.22 above with a critical value of $\chi^2 = 3.84$. It infers that there is no significant difference ($\chi^2 = .906$ $p = .341$) regarding exposure to entrepreneurship education and the extent of career change subsequent to MBA completion. This test was conducted at the 95% confidence level

($p > 0.05$). Accordingly, the null hypothesis is not rejected. This is evidenced by the comments of Interviewee D who changed careers (started a business in the retail sector) during her MBA. She explained:

I would have pursued my new business idea (and changed careers) anyway. However, studying entrepreneurship was very useful in terms of idea generation and subsequently planning and growing my business.

Furthermore, Interviewee D advises that for her, there was no link between changing career and taking entrepreneurship on the MBA. Similarly, Interviewee C advised:

I took a career break after completing my MBA and worked in venture capital for seven years. While the entrepreneurship module on the MBA was useful in this regard, the decision to change careers would have happened anyway as an opportunity presented itself and I was ready for a new challenge.

The present research also examined the number of entrepreneurship modules taken by participating graduates and this is outlined in Table 4.23 below.

Table 4.23 Exposure to more than one entrepreneurship module and extent of job change

			Changed Jobs since Completing MBA.		Total
			Yes	No	
How many Entrepreneurship module/s did you study on your MBA programme?	One Module	Count	64	38	102
		% within Changed Jobs since Completing MBA.	83.1%	88.4%	85.0%
		% of Total	53.3%	31.7%	85.0%
	Two Modules	Count	13	5	18
		% within Changed Jobs since Completing MBA.	16.9%	11.6%	15.0%
		% of Total	10.8%	4.2%	15.0%
Total	Count	77	43	120	
	% within Changed Jobs since Completing MBA.	100.0%	100.0%	100.0%	
	% of Total	64.2%	35.8%	100.0%	

Table 4.23 suggests that 83.1 % of those graduates with one entrepreneurship module on their programme changed jobs while the remaining 16.9% were respondents who took two entrepreneurship modules and changed jobs subsequent to MBA graduation. Furthermore, with a critical value of $\chi^2 = 3.84$, a Pearson chi-square test identifies that there is no significant difference ($\chi^2 = .598$ $p = .439$) relating to exposure to more than one entrepreneurship module and the extent of job changing by graduates, at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected.

Respondents to the present research were also asked to indicate the extent entrepreneurship on their MBA impacted on their job change. The comparative results on this are tabulated within Table 4.24.

Table 4.24 Exposure to entrepreneurship and impact on respondents decision to change jobs

			Changed Jobs since Completing MBA.		Total
			Yes	No	
Do you believe studying Entrepreneurship as part of an MBA programme has had an important impact on your subsequent career decision?	Strongly Agree	Count	5	6	11
		% within Changed Jobs since Completing MBA.	6.7%	14.0%	9.3%
		% of Total	4.2%	5.1%	9.3%
	Agree	Count	25	11	36
		% within Changed Jobs since Completing MBA.	33.3%	25.6%	30.5%
		% of Total	21.2%	9.3%	30.5%
	Do Not Know	Count	18	11	29
		% within Changed Jobs since Completing MBA.	24.0%	25.6%	24.6%
		% of Total	15.3%	9.3%	24.6%
	Disagree/Strongly Disagree	Count	27	15	42
		% within Changed Jobs since Completing MBA.	36.0%	34.9%	35.6%
		% of Total	22.9%	12.7%	35.6%
Total	Count	75	43	118	
	% within Changed Jobs since Completing MBA.	100.0%	100.0%	100.0%	
	% of Total	63.6%	36.4%	100.0%	

Table 4.24 contends that of all those participating graduates who changed jobs since completing their MBA (n=75), 40% either “agree” (33.3%) or “strongly agree” (6.7%) that studying entrepreneurship had an important impact on their decision. A further 24% of those who changed jobs claimed they did not know the impact of entrepreneurship while the remaining 36% indicated they “disagree” or “strongly disagree”. Of those who were exposed to entrepreneurship but who did not change jobs (n=43), almost exactly the same percentage as above, 39.6%, either “agree” (25.6%) or “strongly agree” (14%) that studying entrepreneurship had an important impact on their decision. Just over one-quarter did not know, while those remaining signalled they “disagree” or “strongly disagree” that taking entrepreneurship on their MBA had an impact on their subsequent career decision. Table 4.25 explores this through chi-square analysis.

Table 4.25 Pearson chi-square test for exposure to entrepreneurship and impact on decision to change jobs

Chi-square	Degrees of Freedom	Asymp. Sig
2.132	3	.545

The Pearson chi-square test presented in Table 4.25 above (with a critical value of $\chi^2 = 3.84$) identifies that there is no significant difference ($\chi^2 = 2.132$ $p = .545$) between exposure to entrepreneurship education and the subsequent decision to change job. This is at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis not rejected.

Similarly, Table 4.26 describes the statistical impact entrepreneurship had on those who changed careers since completing their MBA.

Table 4.26 Pearson chi-square test for exposure to entrepreneurship and impacted on career change

Chi-square	Degrees of Freedom	Asymp. Sig
1.684	4	.794

The Pearson chi-square presented in Table 4.26 above (with a critical value of $\chi^2 = 9.49$) outlines that there is no significant difference ($\chi^2 = 1.684$ $p = .794$) relating to the exposure of entrepreneurship and its subsequent impact on graduates' career change, at the 95% confidence level ($p > 0.05$). Consequently, the null hypothesis is not rejected. This perspective is endorsed by Interviewee A who contends that his decision to change career and start a business was:

...more to do with an opportunity presenting itself. However studying entrepreneurship on the MBA reinforced this decision and helped with an increased sense of credibility and confidence.

In a similar way, Interviewee E advised:

The decision (to change career) was based on financial, family and career considerations and this was bigger than one module on my MBA programme.

The present sub-hypothesis explores the impact of entrepreneurship education on the careers of MBA graduates. Part of this is future intention to change career and the extent to which survey participants are proactively seeking out opportunistic ideas for new ventures. This is done for those who have taken one and two modules of entrepreneurship on their MBA programme and is highlighted in Table 4.27 below.

Table 4.27 Differing exposure to entrepreneurship and extent of seeking opportunistic idea for new venture

			To what extent are you actively seeking out an opportunistic idea for a new enterprise?		Total
			To a Large/Some Extent	To a Very Limited Extent/Not at all	
How many Entrepreneurship module/s did you study on your MBA programme?	One Module	Count	30	40	70
		% within To what extent are you actively seeking out an opportunistic idea for a new enterprise?	78.9%	88.9%	84.3%
		% of Total	36.1%	48.2%	84.3%
	Two Modules	Count	8	5	13
		% within To what extent are you actively seeking out an opportunistic idea for a new enterprise?	21.1%	11.1%	15.7%
		% of Total	9.6%	6.0%	15.7%
Total	Count	38	45	83	
	% within To what extent are you actively seeking out an opportunistic idea for a new enterprise?	100.0%	100.0%	100.0%	
	% of Total	45.8%	54.2%	100.0%	

Table 4.27 demonstrates that of those respondents who took one or two entrepreneurship modules (n=83), 45.7% indicated they were seeking out opportunistic new ideas “to a large extent” or to “some extent”. However, Table 4.27 indicates that 78.9% were exposed to one entrepreneurship module while the remaining 21.1% were exposed to two. A similar pattern is exhibited for those seeking ideas “to a very limited extent”, and “not at all”. This further examined in Table 4.28.

Table 4.28 Pearson chi-square test for exposure to entrepreneurship and extent of seeking opportunistic idea for new venture

Chi-square	Degrees of Freedom	Asymp. Sig
3.374	3	.338

The Pearson chi-square test presented in Table 4.28 (with a critical value of $\chi^2 = 7.81$) suggests that there is no significant difference ($\chi^2 = 3.374$ $p = .338$) in exposure to entrepreneurship education and the extent to which graduates are seeking new business ideas. This is at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected. This statistical result is confirmed by Interviewee E:

I am actively seeking out a new business idea at present. The primary reason for this is that my current employer is undergoing a significant rationalising process in Ireland, and it is very probable that redundancy will be part of this (for me). I always wanted to start my own business and this is my big chance. While I learned a lot on the entrepreneurship modules (two) on my MBA, they are not the reason I am exploring new business ideas.

The clear and dominant trend within Sub-Hypothesis 3 highlights that the null hypothesis is not rejected.

4.4.4 Sub-Hypothesis 4

The objective of sub-hypothesis 4 is to examine the relationship between entrepreneurship education and the propensity of MBA graduates in Ireland to venture.

Null Hypothesis =

Ho4 Entrepreneurship education has no impact on graduate propensity to venture.

Alternative Hypothesis =

Ha4 Entrepreneurship education has an impact on graduate propensity to venture.

This section commences with an examination of all participants who took entrepreneurship on the MBA (n=120). This can be seen in Table 4.29 below.

Table 4.29 Start-up rates and whether entrepreneurship was taken on MBA

			Have you started your own business?		Total
			Yes	No	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	36	84	120
		% within Have you started your own business?	81.8%	73.7%	75.9%
		% of Total	22.8%	53.2%	75.9%
	No	Count	8	30	38
		% within Have you started your own business?	18.2%	26.3%	24.1%
		% of Total	5.1%	19.0%	24.1%
Total	Count	44	114	158	
	% within Have you started your own business?	100.0%	100.0%	100.0%	
	% of Total	27.8%	72.2%	100.0%	

Table 4.29 highlights a total of 158 respondents. For 47 graduates the question was not applicable (they did not have the opportunity of taking entrepreneurship) and a further 3 did not answer the question. It indicates that 75.9% of responding graduates took entrepreneurship while the remaining 24.1% did not. Over 80% of those who started businesses studied entrepreneurship while the subject was taken by just over 73% of those who have not ventured. The statistical relationship between exposure to entrepreneurship on the MBA and venture start-up is tested in Table 4.30.

Table 4.30 Pearson chi-square test for exposure to entrepreneurship education and venture propensity among MBA graduates

Chi-square	Degrees of Freedom	Asymp. Sig
1.150	1	.284

The Pearson chi-square test is presented in Table 4.30 above with a critical value of $\chi^2 = 3.84$. It suggests that there is no significant difference ($\chi^2 = 1.150$ $p = .284$) between the exposure to entrepreneurship education and venture rates among graduates, at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected. Interviewee B endorses this result. He started a business without taking an

entrepreneurship module on his MBA. While he claims he would have started his venture “with or without” entrepreneurship, he does however suspect it may have been “useful” in the area of business planning and as a contrast to the “big business” perspective of other MBA modules. Interviewee A, who comes from a family business background and started a successful tourism venture subsequent to completing the MBA, supports this by saying;

I already had the strong desire to start a business. However the entrepreneurship module did support me in a number of important areas including business planning and new idea generation.

This study was also interested in establishing whether the number of entrepreneurship modules taken by survey participants had a statistical impact on graduates propensity to venture. This is highlighted in Table 4.31 below.

Table 4.31 Exposure to more than one entrepreneurship module and venture propensity among MBA graduates

			Have you started your own business?		Total
			Yes	No	
How many Entrepreneurship module/s did you study on your MBA programme?	One Module	Count	32	70	102
		% within Have you started your own business?	88.9%	83.3%	85.0%
		% of Total	26.7%	58.3%	85.0%
	Two Modules	Count	4	14	18
		% within Have you started your own business?	11.1%	16.7%	15.0%
		% of Total	3.3%	11.7%	15.0%
Total	Count	36	84	120	
	% within Have you started your own business?	100.0%	100.0%	100.0%	
	% of Total	30.0%	70.0%	100.0%	

Of the total number of respondents that took entrepreneurship (n=120), only 15% (n=18) indicated they studied two modules. This seems to confirm the work of Anderson (2004) who suggests entrepreneurship, in many cases, seems to be restricted to a single module within a programme. Some 11% (n=4) of start-up graduates in the present survey, and 16.7% (n=14) of those who did not start

businesses, were exposed to two modules of entrepreneurship. A chi-square test of this relationship is outlined in Table 4.32.

Table 4.32 Pearson chi-square test for exposure to more than one entrepreneurship module and venture propensity among MBA graduates

Chi-square	Degrees of Freedom	Asymp. Sig
.610	1	.435

Table 4.32 presents the Pearson chi-square test with a critical value of $\chi^2 = 3.84$. It identifies that there is no significant difference ($\chi^2 = .610$ $p = .435$) in the exposure by graduates to more than one entrepreneurship module and venture propensity, at the 95% confidence level ($p > 0.05$). Consequently, the null hypothesis is not rejected. Likewise, Table 4.33 explores the same proposition (exposure to more than one entrepreneurship module and venture propensity among MBA graduates) using the Pearson correlation test.

Table 4.33 Pearson correlation test for exposure to more than one entrepreneurship module and venture propensity among MBA graduates

Pearson Correlation Value	.071
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Table 4.33 highlights that within the comparison outlined above, the Pearson correlation test suggests very little linkage between the variables (7.1%).

Another proposition relevant to the current sub-hypothesis is whether exposure to entrepreneurship has an impact on the number of businesses MBA graduates start. This relationship is explored in Table 4.34.

Table 4.34 Exposure to entrepreneurship education and number of businesses started by graduates

			Have you started more than one business?		Total
			Yes	No	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	13	22	35
		% within Have you started more than one business?	72.2%	88.0%	81.4%
		% of Total	30.2%	51.2%	81.4%
	No	Count	5	3	8
		% within Have you started more than one business?	27.8%	12.0%	18.6%
		% of Total	11.6%	7.0%	18.6%
Total	Count	18	25	43	
	% within Have you started more than one business?	100.0%	100.0%	100.0%	
	% of Total	41.9%	58.1%	100.0%	

Table 4.34 indicates that over 40% of all graduates who started ventures (n=43) have, in fact, started more than one business. Of those that have started more than one business (n=18), 72.2% have taken entrepreneurship as part of their MBA programme. This corresponds with the 88% of those who have taken entrepreneurship but have started one venture. Table 4.35 looks at the extent of this relationship in more detail.

Table 4.35 Pearson chi-square test for exposure to entrepreneurship education and the number of businesses started by graduates

Chi-square	Degrees of Freedom	Asymp. Sig
1.720	1	.190

The Pearson chi-square test is presented in Table 4.35 above with a critical value of $\chi^2 = 3.84$. It identifies that there is no significant difference ($\chi^2 = 1.720$ $p = .190$) regarding exposure to entrepreneurship education and the number of businesses started by graduates. This test was conducted at the 95% confidence level ($p > 0.05$). As a result, the null hypothesis is not rejected.

On examining the relationship between entrepreneurship education and graduate propensity to venture, whether graduates started before, during or after the MBA programme is of great interest in terms of trying to assess the impact of the entrepreneurship module/s. The timing of venture start-up is examined in Table 4.36.

Table 4.36 Exposure to entrepreneurship education and timing of start-up

			Please indicate when you started your business.		Total
			Before Commencing the MBA Programme	During /After Completing MBA Programme	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	5	30	35
		% within Please indicate when you started your business.	83.3%	81.1%	81.4%
		% of Total	11.6%	69.8%	81.4%
	No	Count	1	7	8
	% within Please indicate when you started your business.	16.7%	18.9%	18.6%	
	% of Total	2.3%	16.3%	18.6%	
Total		Count	6	37	43
		% within Please indicate when you started your business.	100.0%	100.0%	100.0%
		% of Total	14.0%	86.0%	100.0%

Table 4.36 indicates a total of 43 valid responses received. The remaining 13 respondents who started a business either choose not applicable or decided not to answer the question. Within Table 4.36, responding graduates clearly illustrate that of the total number of start-ups (n=43), over 86% (n=37) happened either during or subsequent to graduates completing their MBA studies. Of these, 81.1% were started by graduates who were exposed to entrepreneurship module/s on their programme. The number of start-ups founded before graduates took the MBA is relatively low (18.6%) and it is interesting to note that entrepreneurship was taken by five out of six

these students. This relationship is further explored through Fisher’s exact test in Table 4.37 below.

Table 4.37 Fisher’s exact test for exposure to entrepreneurship education and timing of start-up

Fisher’s Exact Test	Exact Sig. (2-sided)
	1.00

Table 4.37 identifies an exact significance value of $p = 1.00$. There is a critical value of 0.05. This suggests an exact significance value greater than the test value (p value > 0.05). Accordingly, there is no significant difference between reasons for taking entrepreneurship on the MBA and when businesses were started. Therefore the null hypothesis is not rejected. This result is confirmed by interviewee D who advised:

While I started my business during the MBA, I did so as a result of experience, timing, ambition, an opportunity presenting itself and an element of luck. The fact that I was doing my MBA and taking the entrepreneurship module at the time was not central in my decision.

Likewise Interviewee A, a successful entrepreneur with two business start-ups, articulated that starting his second business was:

More to do with opportunity, timing and finance rather than factors associated with completing my MBA.

Another theme relevant to the present sub-hypothesis is the relationship between entrepreneurship education and the degree to which graduate respondents are entrepreneurial in their capacity as employees (intrapreneurship). This is highlighted within Table 4.38 below.

Table 4.38 Exposure to entrepreneurship education and whether graduates have been involved in intrapreneurship

			Have you been involved in Intrapreneurship in your career to date?		Total
			Yes	No	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	51	33	84
		% within Have you been involved in Intrapreneurship in your career to date?	78.5%	68.8%	74.3%
		% of Total	45.1%	29.2%	74.3%
	No	Count	14	15	29
		% within Have you been involved in Intrapreneurship in your career to date?	21.5%	31.3%	25.7%
		% of Total	12.4%	13.3%	25.7%
Total	Count	65	48	113	
	% within Have you been involved in Intrapreneurship in your career to date?	100.0%	100.0%	100.0%	
	% of Total	57.5%	42.5%	100.0%	

Of all responding graduates (n=113), 57.5% have been involved in intrapreneurship in their career to date. The vast majority of these, 78.5% (51 graduates), took entrepreneurship on the MBA. This relationship is further outlined in Table 4.39.

Table 4.39 Pearson chi-square test for exposure to entrepreneurship education and whether graduates have been involved in intrapreneurship

Chi-square	Degrees of Freedom	Asymp. Sig
1.365	1	.243

The Pearson chi-square test is presented in Table 4.39 above with a critical value of $\chi^2 = 3.84$. It identifies that there is no significant difference ($\chi^2 = 1.365$ $p = .243$) between exposure to entrepreneurship education and whether graduates have been involved in intrapreneurship. This test was undertaken at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected. Furthermore, graduates

indicated the extent to which entrepreneurship on the MBA assisted them in their intrapreneurial endeavours. This is highlighted in Table 4.40.

Table 4.40 Involvement with intrapreneurship and the usefulness of entrepreneurship on the MBA

			Please indicate the extent to which these module/s were useful in undertaking intrapreneurial activity within an organisation.		Total
			Very Useful/Useful	Fairly Useful/Less Useful/Irrelevant	
Have you been involved in Intrapreneurship in your career to date?	Yes	Count	23	28	51
		% within Please indicate the extent to which these module/s were useful in undertaking intrapreneurial activity within an organisation.	95.8%	96.6%	96.2%
		% of Total	43.4%	52.8%	96.2%
	No	Count	1	1	2
	% within Please indicate the extent to which these module/s were useful in undertaking intrapreneurial activity within an organisation.	4.2%	3.4%	3.8%	
	% of Total	1.9%	1.9%	3.8%	
Total		Count	24	29	53
		% within Please indicate the extent to which these module/s were useful in undertaking intrapreneurial activity within an organisation.	100.0%	100.0%	100.0%
		% of Total	45.3%	54.7%	100.0%

Table 4.40 suggests that over 45% of surveyed intrapreneurs regarded entrepreneurship on the MBA programme as either “useful” or “very useful”. However, the remaining 54.7% found entrepreneurship “fairly useful”, “less useful” or “irrelevant” in this regard. This relationship is further explored through Fisher’s exact test in Table 4.41 below.

Table 4.41 Fisher’s exact test for involvement with intrapreneurship and the usefulness of entrepreneurship on the MBA

Fisher’s Exact Test	Exact Sig. (2-sided)
	1.00

Table 4.41 details an exact significance value of $p = 1.00$. There is a test value of 0.05. This suggests an exact significance value greater than the test value (p value > 0.05) and no significant difference regarding involvement with intrapreneurship and the usefulness of entrepreneurship on the MBA. Therefore the null hypothesis is not rejected. This is supported by Interviewees E and C . Interviewee E stressed that:

I work in a global corporation where new idea generation, business planning and intrapreneurship are the norm. This has been the nature of my job and studying entrepreneurship modules on my MBA did not change this.

Likewise, Interviewee C explained:

Intreneurship has always been central to my professional thinking and the entrepreneurship module simply confirmed this to me.

A business idea is seen within entrepreneurship literature as a key component of the entrepreneurship process (Hisrich and Peters 1998; Hill 2002). Accordingly, it is reasonable to expect new ventures to emanate from opportunistic business ideas. For this reason, an examination of graduate propensity to venture and its association with entrepreneurship education, should also include propensity for business ideas. This is outlined in Table 4.42.

Table 4.42 Exposure to entrepreneurship on the MBA and propensity of new business ideas

			Have you ever had a business idea for a new start-up venture?		Total
			Yes	No	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	67	17	84
		% within Have you ever had a business idea for a new start-up venture?	76.1%	65.4%	73.7%
		% of Total	58.8%	14.9%	73.7%
	No	Count	21	9	30
		% within Have you ever had a business idea for a new start-up venture?	23.9%	34.6%	26.3%
		% of Total	18.4%	7.9%	26.3%
Total	Count	88	26	114	
	% within Have you ever had a business idea for a new start-up venture?	100.0%	100.0%	100.0%	
	% of Total	77.2%	22.8%	100.0%	

While 120 graduate respondents took entrepreneurship as part of their MBA programme, 84 responded to this question. This is because there was one non-respondent and a further 35 graduates for whom the question was “not applicable”. Table 4.42 identifies that of those 84 graduates who took entrepreneurship as part of their MBA programme, 79.8% have had an idea for a new business venture.

Furthermore, of the 30 respondents who had no exposure to entrepreneurship, 70% have had a business idea. Table 4.43 explains this statistically. The Pearson chi-square test (with a critical value of $\chi^2 = 3.84$) indicates that there is no significant difference ($\chi^2 = 1.197$ $p = .274$) between exposure to entrepreneurship education and the propensity of new business ideas, at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected.

Table 4.43 Pearson chi-square test for exposure to entrepreneurship education and propensity of new business ideas

Chi-square	Degrees of Freedom	Asymp. Sig
1.197	1	.274

The result outlined above is further confirmed by Interviewee D who runs a highly successful business, within the retail sector. She advises that:

I always have had business ideas before, during and subsequent to taking the MBA. My entrepreneur friends seem to be the same. Doing entrepreneurship on the MBA did not change this.

Another theme of relevance to the present sub-hypothesis is the degree of entrepreneurial intent among graduates. This is studied in Table 4.44.

Table 4.44 Exposure to entrepreneurship education and future entrepreneurial intent

			Do you intend to start a business in the future?			Total
			Highly Probable/ Probable	Some Probability	Improbable/ No Probability	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	22	34	27	83
		% within Do you intend to start a business in the future?	73.3%	75.6%	71.1%	73.5%
		% of Total	19.5%	30.1%	23.9%	73.5%
	No	Count	8	11	11	30
		% within Do you intend to start a business in the future?	26.7%	24.4%	28.9%	26.5%
		% of Total	7.1%	9.7%	9.7%	26.5%
Total	Count	30	45	38	113	
	% within Do you intend to start a business in the future?	100.0%	100.0%	100.0%	100.0%	
	% of Total	26.5%	39.8%	33.6%	100.0%	

Before discussing the contents of Table 4.44, it is important to explain the source of its content. Firstly, the 83 participating graduates who studied entrepreneurship, when added to the 35 graduates for whom the question was “not applicable” and a further 2 who did not answer this question, this results in 120 graduates. Secondly, of those 30 graduates who did not take entrepreneurship, the question was “not applicable” to a further 8 respondents.

Table 4.44 illustrates that of those responding graduates who studied entrepreneurship on their MBA (n=83), a total 26.5% deemed it “highly probable” or “probable” they will start a venture in the future. The number for those who were not exposed to entrepreneurship (n=30) and regarded it “highly probable” or “probable” they would venture was 26.7%. Interestingly, for “some probability”, this percentage increased to 41% for those who had taken entrepreneurship and 36.3% for those graduates who had not.

The Pearson chi-square for this (with a critical value of $\chi^2 = 9.49$) identifies that there is no significant difference ($\chi^2 = .543$ $p = .969$) between exposure to entrepreneurship education and future entrepreneurial intent, at the 95% confidence level ($p > 0.05$). Consequently, the null hypothesis is not rejected. This result was further confirmed by Interviewee C who indicated:

I did not take the entrepreneurship module on the MBA because I wanted to start a business. While the module provided me with valuable insight and knowledge into the process of entrepreneurship and the mindset of the entrepreneur, the drive and spark to pursue it must already be there.

Likewise, Interviewee A explained:

I have always had a high degree of entrepreneurial intent (and have started two businesses in my career to date) and the entrepreneurship module on the MBA did not change this.

Survey respondents' future entrepreneurial intent was further explored through seeking to ascertain the extent to which they were actively seeking an opportunistic idea for a new enterprise. This relationship is highlighted in Table 4.45.

Table 4.45 Exposure to entrepreneurship education and seeking new business ideas

			To what extent are you actively seeking out an opportunistic idea for a new enterprise?			Total
			To a Large/Some Extent	To a Very Limited Extent	Not at All	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	38	28	17	83
		% within To what extent are you actively seeking out an opportunistic idea for a new enterprise?	76.0%	68.3%	77.3%	73.5%
		% of Total	33.6%	24.8%	15.0%	73.5%
	No	Count	12	13	5	30
		% within To what extent are you actively seeking out an opportunistic idea for a new enterprise?	24.0%	31.7%	22.7%	26.5%
		% of Total	10.6%	11.5%	4.4%	26.5%
Total	Count	50	41	22	113	
	% within To what extent are you actively seeking out an opportunistic idea for a new enterprise?	100.0%	100.0%	100.0%	100.0%	
	% of Total	44.2%	36.3%	19.5%	100.0%	

Table 4.45 shows that of the 83 respondents who took entrepreneurship on their MBA, a total of 38 (45.7%) graduates were either actively seeking an idea “to a large extent” or “to some extent”. Conversely, of the 30 individual graduates who did not take entrepreneurship, 12 (40%) were seeking an idea “to a large extent” or “to some extent”. Furthermore, 17 respondents (over 20%) who took entrepreneurship were not seeking an idea at all. This figure compares to 5 graduates (16.7%) with no entrepreneurship exposure. The relationship outlined above is further explored in Table 4.46 below.

Table 4.46 Pearson chi-square test for exposure to entrepreneurship and seeking new business ideas

Chi-square	Degrees of Freedom	Asymp. Sig
2.487	3	.478

The Pearson chi-square test presented in Table 4.46 includes a critical value of $\chi^2 = 7.81$. It identifies that there is no significant difference ($\chi^2 = 2.487$ $p = .478$) between exposure to entrepreneurship education and the seeking out of new business ideas, at the 95% confidence level ($p > 0.05$). Therefore the null hypothesis is not rejected. Interviewee E concurred with this result by indicating that new business idea generation was not something he learned on the entrepreneurship module. He expanded on this by saying:

I have always had business ideas and have always been open to the prospect to starting my own business. The spark was already there.

The clear trend with Sub-Hypothesis 4 indicates the null hypothesis is not rejected.

4.4.5 Sub-Hypothesis 5

The final Sub-Hypothesis seeks to assess the performance of ventures created by the respondents to this study (n=56).

Null Hypothesis =

H₀ Entrepreneurship education has no impact on the economic performance of business.

Alternative Hypothesis =

H_a Entrepreneurship education has an impact on the economic performance of business.

The primary motivation of this objective is to examine the economic performance of the ventures created by graduates exposed to entrepreneurship, and graduate entrepreneurs with no such exposure on their MBA. Block and Stumpf (1992) suggest that this is a research proposition warranting investigation and advise:

Graduates with MBAs who have had entrepreneurship courses and who follow an entrepreneurial career will build significantly larger, more profitable businesses, and will employ more workers.....They will start more businesses, and survive better than MBAs who have not had such courses.

(Block and Stumpf 1992, p.39)

The economic performance criteria used in Sub-Hypothesis 5 are based on those proposed by Block and Stumpf (1992), current employment levels, annual sales growth over the last three years, workforce growth over the last three years, profitability levels over the last three years and the geographical area in which the enterprise is trading (regional, national, international). The first of these, current employment levels, is outlined in Table 4.47.

Of the total number of enterprises created by respondents to this study (n=56), 70% were established since 2000, and 83% are service related businesses. Around 10% of graduates' ventures are manufacturing concerns.

Table 4.47 Exposure to entrepreneurship and current employment levels

			How many people do you currently employ?		Total
			Less Than Ten	Ten to Two Hundred and Forty-Nine	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	23	11	34
		% within How many people do you currently employ?	85.2%	73.3%	81.0%
		% of Total	54.8%	26.2%	81.0%
	No	Count	4	4	8
		% within How many people do you currently employ?	14.8%	26.7%	19.0%
		% of Total	9.5%	9.5%	19.0%
Total	Count	27	15	42	
	% within How many people do you currently employ?	100.0%	100.0%	100.0%	
	% of Total	64.3%	35.7%	100.0%	

While 56 responding graduates had started businesses, only 42 responded to this question. Table 4.47 indicates that of responding entrepreneurs (n=42), 81% took entrepreneurship on their MBA while the remaining 19% did not. Of those who have taken entrepreneurship on their MBA, 67.6% employ less than ten people while the remaining 32.4% have ten to two hundred and forty nine employees. Of those with no exposure to entrepreneurship on their MBA programme, 50% employ less than ten people while the remaining 50% have 10 to 249 employees. The relationship between exposure to entrepreneurship education and the employment levels of ventures created by graduates is further explored in Table 4.48. Fisher's exact test is being used because some of the cells in Table 4.47 have values less than 5 and the overall N value is less than 50.

Table 4.48 Fisher’s exact test for exposure to entrepreneurship and current employment levels

Fisher’s Exact Test	Exact Sig. (2-sided)
	.425

Table 4.48 details an exact significance value of $p = .425$. There is a critical value of 0.05. This suggests a Fisher test value greater than the test value (p value > 0.05) and consequently there is no significant difference between exposure to entrepreneurship on the MBA and current employment levels. Accordingly, the null hypothesis is not rejected. This result is confirmed by Interviewee A who suggests that:

I have grown staff numbers consistently over the last number of years. This has been as a result of favourable market demand and good fortune.

Exposure to entrepreneurship on the MBA programme and annual sales (over the last three years) of ventures created by graduates is included in Table 4.49 below.

Table 4.49 Exposure to entrepreneurship and annual sales levels

			Has your annual sales (over the last three years)?		Total
			Increased	Remained the Same/ Decreased	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	23	9	32
		% within Has your annual sales (over the last three years)?	82.1%	75.0%	80.0%
		% of Total	57.5%	22.5%	80.0%
	No	Count	5	3	8
		% within Has your annual sales (over the last three years)?	17.9%	25.0%	20.0%
		% of Total	12.5%	7.5%	20.0%
Total	Count	28	12	40	
	% within Has your annual sales (over the last three years)?	100.0%	100.0%	100.0%	
	% of Total	70.0%	30.0%	100.0%	

Of the 56 participating graduates who started their own business, 40 responded. Table 5.49 suggests that of all responding graduates (n=40), 80% took entrepreneurship on their MBA while the remaining 20% did not. Some 32 graduates were exposed to entrepreneurship education and of these 71.8% reported an annual increase in sales over the last three years. The remaining 28.1 % suggested this figure had remained the same or decreased. Of the graduates with no exposure to entrepreneurship on their MBA programme (n=8), 62.5% indicated an increase in sales while the remaining 37.5% claimed static or decreasing sales levels respectfully. Table 4.50 explores this in more statistical detail.

Table 4.50 Fisher’s exact test for exposure to entrepreneurship and annual sales levels

Fisher’s Exact Test	Exact Sig. (2-sided)
	.677

Table 4.50 outlines an exact significance value of $p = .677$. There is a critical value of 0.05. This indicates a Fisher test value greater than the test value (p value > 0.05). Accordingly, there is no significant difference in the sample analysis and the null hypothesis is not rejected. The theme of workforce size is detailed within Table 4.51

Table 4.51 Exposure to entrepreneurship and workforce size

			Has the size of your workforce (over the last three years)?		Total
			Increased	Remained the Same/ Decreased	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	18	14	32
		% within Has the size of your workforce (over the last three years)?	81.8%	77.8%	80.0%
		% of Total	45.0%	35.0%	80.0%
	No	Count	4	4	8
		% within Has the size of your workforce (over the last three years)?	18.2%	22.2%	20.0%
		% of Total	10.0%	10.0%	20.0%
Total	Count	22	18	40	
	% within Has the size of your workforce (over the last three years)?	100.0%	100.0%	100.0%	
	% of Total	55.0%	45.0%	100.0%	

Well over half the former group of entrepreneurs (56.2%) indicated that they had increased the size of their workforce over the last three years, while the remaining respondents (43.8%) highlighted that their workforce size had either remained static or decreased over the time period. Of those entrepreneurs with no exposure to entrepreneurship education on their MBA (n=8), 50% suggested that they had increased their workforce size while the remainder had a static workforce size over the preceding three years. These figures are further explored in Table 4.52 below.

Table 4.52 Fisher’s exact test for exposure to entrepreneurship and workforce size (over the last three years)

Fisher’s Exact Test	Exact Sig. (2-sided)
	1.00

Table 4.52 includes an exact significance value of $p = 1.00$. There is a critical value of 0.05. It follows that the Fisher test value is greater than the test value (p value > 0.05). Subsequently, it can be deduced that there is no significant difference in the sample analysis and no link between exposure to entrepreneurship on the MBA and workforce size (over the last three years). This highlights that the null hypothesis is not rejected.

Similarly, Table 4.53 examines exposure to entrepreneurship on their MBA and the profitability levels of the ventures created by graduates.

Table 4.53 Exposure to entrepreneurship and profitability levels

			Has your profitability (over the last three years)?		Total
			Increased	Remained the Same/ Decreased	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	22	10	32
		% within Has your profitability (over the last three years)?	78.6%	83.3%	80.0%
		% of Total	55.0%	25.0%	80.0%
	No	Count	6	2	8
		% within Has your profitability (over the last three years)?	21.4%	16.7%	20.0%
		% of Total	15.0%	5.0%	20.0%
Total		Count	28	12	40
		% within Has your profitability (over the last three years)?	100.0%	100.0%	100.0%
		% of Total	70.0%	30.0%	100.0%

Table 4.53 indicates that 80% of respondents took entrepreneurship on their MBA. A total of 68.75% indicated an increase in venture profitability over the last three years while the remaining 31.25% stressed that their profitability either remained the same or decreased over the same time period. Conversely, of those MBA graduates who were not exposed to entrepreneurship, 75% (6 graduates) indicated an increase in profitability over the last three years. This is further explained within Table 4.54 below.

Table 4.54 Fisher’s exact test for exposure to entrepreneurship and profitability levels (over the last three years)

Fisher’s Exact Test	Exact Sig. (2-sided)
	1.00

Table 4.54 details an exact significance value of $p = 1.00$ and a test value of 0.05. As the Fisher test value is greater than the test value (p value > 0.05) it can be inferred that there is no significant difference in the sample analysis. Accordingly, there is no

relationship between exposure to entrepreneurship on the MBA and profitability levels (over the last three years) and the null hypothesis is not rejected. This is confirmed by Interviewee D who states:

Our profits have grown over the last three years because of hard work, high levels of customer satisfaction and retention and a degree of chance. I do not think you can equate this with exposure to entrepreneurship on an MBA programme.

Furthermore, the geographical trading areas (regional, national, international) in which graduate's ventures operate were also examined in the present research. This is outlined in Table 4.55 below.

Table 4.55 Exposure to entrepreneurship and geographical trading area

			Is your business currently trading:?		Total
			Regionally	Nationally/ Internationally	
Did you take the Entrepreneurship Module/s offered on your MBA programme?	Yes	Count	12	20	32
		% within Is your business currently trading:?	80.0%	80.0%	80.0%
		% of Total	30.0%	50.0%	80.0%
	No	Count	3	5	8
		% within Is your business currently trading:?	20.0%	20.0%	20.0%
		% of Total	7.5%	12.5%	20.0%
Total	Count	15	25	40	
	% within Is your business currently trading:?	100.0%	100.0%	100.0%	
	% of Total	37.5%	62.5%	100.0%	

Table 4.55 indicates that of all responding MBA graduates who undertook entrepreneurship as part of their MBA programme, 37.5% suggested they traded regionally and a further 62.5% indicated that they were trading on a national or international basis. Over half of those graduates (n=5) with no exposure to entrepreneurship on their MBA reported that they trade either nationally or internationally. This is further explained in Table 4.56.

Table 4.56 Fisher’s exact test for exposure to entrepreneurship and geographical trading area of ventures

Fisher’s Exact Test	Exact Sig. (2-sided)
	1.00

Table 4.56 includes an exact significance value of $p = 1.00$. There is a critical value of 0.05. The Fisher test value is greater than the test value (p value > 0.05), which indicates that there is no significant difference in the sample analysis and that there is no link between exposure to entrepreneurship on the MBA and geographical trading areas of ventures. Accordingly, this indicates that the null hypothesis is not rejected.

Sub-hypothesis 5 seeks to establish whether there is a link between venture performance and entrepreneurship education. Part of this is exploring whether the amount of entrepreneurship education (one or two modules) studied by graduates has had an impact on the performance of ventures. This is outlined within Table 4.57 below.

Table 4.57 Exposure to entrepreneurship modules and employment levels

			How many people do you currently employ?		Total
			Less Than Ten	Ten to Two Hundred and Forty-Nine	
How many Entrepreneurship module/s did you study on your MBA programme?	One Module	Count	21	9	30
		% within How many people do you currently employ?	91.3%	81.8%	88.2%
		% of Total	61.8%	26.5%	88.2%
	Two Modules	Count	2	2	4
		% within How many people do you currently employ?	8.7%	18.2%	11.8%
		% of Total	5.9%	5.9%	11.8%
Total	Count	23	11	34	
	% within How many people do you currently employ?	100.0%	100.0%	100.0%	
	% of Total	67.6%	32.4%	100.0%	

Table 4.57 highlights a response rate of 34 valid responses and of these individuals 88.2% took one module of entrepreneurship on their MBA. Of these graduates 70% currently employ less than ten people. The remaining 30% employ 10 to 249 people. Surveyed entrepreneurs with two modules of entrepreneurship (n=4) were equally distributed between employing less than ten and between ten to two hundred and forty-nine individuals. Table 4.58 explores this.

Table 4.58 Fisher’s exact test for exposure to entrepreneurship modules and current employment levels

Fisher’s Exact Test	Exact Sig. (2-sided)
	.580

Table 4.58 includes an exact significance value of $p = .580$ and a critical value of 0.05. As the Fisher test value is greater than the test value (p value > 0.05) there is no significant difference in the sample analysis and consequently, there is no link between exposure to entrepreneurship modules on the MBA and current employment levels. This suggests that the null hypothesis is not rejected.

Table 4.59 Exposure to entrepreneurship modules and annual sales levels

			Has your annual sales (over the last three years)?		Total
			Increased	Remained the Same/ Decreased	
How many Entrepreneurship module/s did you study on your MBA programme?	One Module	Count	22	7	29
		% within Has your annual sales (over the last three years)?	95.7%	77.8%	90.6%
		% of Total	68.8%	21.9%	90.6%
	Two Modules	Count	1	2	3
		% within Has your annual sales (over the last three years)?	4.3%	22.2%	9.4%
		% of Total	3.1%	6.3%	9.4%
Total	Count	23	9	32	
	% within Has your annual sales (over the last three years)?	100.0%	100.0%	100.0%	
	% of Total	71.9%	28.1%	100.0%	

Table 4.59 highlights that of 32 participating graduates, 90.6% took one module of entrepreneurship on their MBA. Of these respondents, 75.8% indicated an increase in annual sales within their venture over the last three years. The remaining 24.1% of respondents suggested sales either remained the same or decreased in volume over the last three years. Only 3 responding graduates (9.4%) had two modules of entrepreneurship on their MBA. 66% noted sales that remained the same or decreased over the last three years while the remaining entrepreneur outlined an increase in sales over the same time period. This is further explored in Table 4.60.

Table 4.60 Fisher’s exact test for exposure to entrepreneurship modules and annual sales levels

Fisher’s Exact Test	Exact Sig. (2-sided)
	.184

Table 4.60 shows an exact significance value of $p = .184$. There is a critical value of 0.05. As the Fisher test value is greater than the test value (p value > 0.05) there is no significant difference in the sample analysis. This suggests that there is no link between exposure to entrepreneurship modules on the MBA and annual sales levels (over the last three years). Accordingly, that the null hypothesis is not rejected.

This result is affirmed by Interviewee D who advises that:

I took two entrepreneurship modules on my MBA but I do not believe this impacted on my sales performance to date. To put it another way, I do not think I would sell less had I one module of entrepreneurship.

Table 4.61 explores the number of entrepreneurship modules taken by graduates and the workforce size of their ventures.

Table 4.61 Exposure to entrepreneurship modules and workforce size

			Has the size of your workforce (over the last three years)?		Total
			Increased	Remained the Same/ Decreased	
How many Entrepreneurship module/s did you study on your MBA programme?	One Module	Count	17	12	29
		% within Has the size of your workforce (over the last three years)?	94.4%	85.7%	90.6%
		% of Total	53.1%	37.5%	90.6%
	Two Modules	Count	1	2	3
		% within Has the size of your workforce (over the last three years)?	5.6%	14.3%	9.4%
		% of Total	3.1%	6.3%	9.4%
Total	Count	18	14	32	
	% within Has the size of your workforce (over the last three years)?	100.0%	100.0%	100.0%	
	% of Total	56.3%	43.8%	100.0%	

As Table 4.61 indicates, of the 32 respondents who took entrepreneurship modules, 90.6% took one module of entrepreneurship while the remaining 9.4% took two. Of those who were exposed to one entrepreneurship module, 58.6% indicated they had an increase in workforce size over the last three years. A further 41.3% suggested their workforce remained the same or decreased in size over the last three years. Of those 3 graduates with exposure to two entrepreneurship modules on their MBA, one observed an increase in workforce size (over the last three years) while the remaining two noted that workforce size either remained the same or decreased over the same time duration. This is further explained in Table 4.62 below.

Table 4.62 Fisher’s exact test for exposure to entrepreneurship modules and workforce

Fisher’s Exact Test	Exact Sig. (2-sided)
	.568

Table 4.62 includes an exact significance value of $p = .568$. There is a critical value of 0.05. The Fisher test value is greater than the test value (p value > 0.05), which

indicates that there is no significant difference in the sample analysis and there is no relationship between exposure to entrepreneurship modules on the MBA and workforce size (over the last three years). Accordingly, this indicates that the null hypothesis is not rejected.

Another theme explored (Table 4.63) is profitability levels of ventures and exposure to entrepreneurship modules on the MBA (Block and Stumpf 1992, p.39). Of those graduates exposed to entrepreneurship (n=29), a total 68.9% reported an increase in profitability over the last three years. The remaining graduates in this category outlined either static or decreasing profit levels over the last three years.

Table 4.63 Exposure to entrepreneurship modules and profitability

			Has your profitability (over the last three years)?		Total
			Increased	Remained the Same/ Decreased	
How many Entrepreneurship module/s did you study on your MBA programme?	One Module	Count	20	9	29
		% within Has your profitability (over the last three years)?	90.9%	90.0%	90.6%
		% of Total	62.5%	28.1%	90.6%
	Two Modules	Count	2	1	3
		% within Has your profitability (over the last three years)?	9.1%	10.0%	9.4%
		% of Total	6.3%	3.1%	9.4%
Total	Count	22	10	32	
	% within Has your profitability (over the last three years)?	100.0%	100.0%	100.0%	
	% of Total	68.8%	31.3%	100.0%	

With regard to responding entrepreneurs who had exposure to two modules of entrepreneurship (n=3), 66% of respondents indicated an increase in profitability over the last three years, while the remaining 33% stressed a static or decreasing scenario. The Fisher Test for the above is outlined within Table 4.64 below.

Table 4.64 Fisher’s exact test for exposure to entrepreneurship modules and profitability (over the last three years)

Fisher’s Exact Test	Exact Sig. (2-sided)
	1.000

Table 4.64 includes an exact significance value of $p = 1.000$. There is a critical value of 0.05. As the Fisher test value is greater than the test value (p value > 0.05) there is no significant difference in the sample analysis. This indicates that there is no link between exposure to entrepreneurship modules on the MBA and profitability levels (over the last three years). Therefore, the null hypothesis is not rejected. This is confirmed by Interviewee D who observes that:

Profitability within a modern business venture is a great deal more complex than the degree of exposure to particular modules on an MBA programme.

Finally, Table 4.65 below examines exposure to entrepreneurship modules and the geographical area in which ventures are trading.

Table 4.65 Exposure to entrepreneurship modules and geographical area of trading

			Is your business currently trading:?		Total
			Regionally	Nationally/ Internationally	
How many Entrepreneurship module/s did you study on your MBA programme?	One Module	Count	11	18	29
		% within Is your business currently trading:?	91.7%	90.0%	90.6%
		% of Total	34.4%	56.3%	90.6%
	Two Modules	Count	1	2	3
		% within Is your business currently trading:?	8.3%	10.0%	9.4%
		% of Total	3.1%	6.3%	9.4%
Total	Count	12	20	32	
	% within Is your business currently trading:?	100.0%	100.0%	100.0%	
	% of Total	37.5%	62.5%	100.0%	

Table 4.65 outlines that of all responding graduates (n=32), 90.6% indicated that they took one entrepreneurship module on their MBA programme. Furthermore, 37.9% indicated that their ventures were operating regionally while the remaining 63% suggested their ventures do business on a national or international basis. Conversely, participating respondents who took two modules of entrepreneurship on their MBA (n=3), reported 33% of them were trading on a regional basis while the remaining 66% suggested their enterprises traded nationally or internationally. This is examined further, through Fisher Test analysis, in Table 4.66 below.

Table 4.66 Fisher’s exact test for exposure to entrepreneurship modules and geographical area of trading

Fisher’s Exact Test	Exact Sig. (2-sided)
	1.000

Table 4.66 includes an exact significance value of $p = 1.000$. There is a test value of 0.05. The Fisher test value is greater than the test value (p value > 0.05), which suggests that there is no significant difference in the sample analysis. Consequently, there is no link between exposure to entrepreneurship modules on the MBA and geographical trading area. Accordingly, this highlights that the null hypothesis is not rejected. Statistically, the dominant trend within Sub-Hypothesis 5 indicates that the null hypothesis is not rejected. This is confirmed by interviewee A:

My business has grown over the last 3 years in terms of sales, employment levels and profitability. I took one entrepreneurship module on the MBA but think it may have been the entire MBA experience (and not the one module) that contributed to this growth. I do not think one (or two) modules can be singled out like this.

4.5 Conclusion

This chapter has statistically outlined the survey results of the present research. It commenced by providing background data on the MBA graduates (1992-2004) who participated in the study (n=208). The vast majority of respondents (almost 60%) graduated between 2000 and 2004 and a total of 47% were between 30 and 39 years of age. Graduates indicated that the predominant academic areas of their pre-MBA qualifications were Business Studies (44%) and Engineering or Science (33%). A total of 97% of respondents held a third level qualification prior to commencing their MBA programme. Two-thirds of those surveyed had changed jobs subsequent to completing their MBA while a further 38% had embarked on a new career. Over 80% of graduates had job descriptions at director, managerial or senior managerial levels. When further probed on their career to date, 75% of respondents explained they were either “satisfied” or “very satisfied” with it.

The present research indicates that 75% of graduates were offered entrepreneurship on their MBA and of these, 76% (120 graduates) took up this opportunity. Nearly two-thirds studied entrepreneurship because of a personal interest in the area while a further 35% did so because it was an obligatory subject. Of respondents who indicated they took entrepreneurship as part of their MBA, a total of 41% did so with an already existing intention of starting a business or gaining knowledge that may be helpful in doing so. Some 86% of graduates who studied entrepreneurship believed their objectives on taking the subject were met. A further 40% of respondents suggested that exposure to MBA entrepreneurship had an important impact on their subsequent career decisions while 58% revealed it had an impact on their aspiration to pursue entrepreneurship as a future career option. In this regard, 26.9% (n=56) of participants

had started their own businesses and an impressive 69% of these ventures were founded subsequent to graduates completing their MBA. Almost one-third of responding entrepreneurs believed their most important reason for starting a venture was the identification of an opportunistic business idea while a further 23.6% cited previous work related experience as their primary reason for start-up. Interestingly, entrepreneurship education did not feature prominently as a core reason for pursuing entrepreneurship. Almost 8% cited it as a “second ranked” reason while approximately 10% of graduates cited it as their “third ranked” most important reason for establishing a business.

Of the total number of ventures created by respondents (n=56), 70% have been established since 2000, 83% are service related businesses and one-quarter consultancy based. Around 10% of graduates’ ventures are manufacturing concerns. The vast majority of participating entrepreneurs employ less than ten people (64%) and report that their annual sales, workforce size and profitability levels had increased over the last three years. While the majority of participating entrepreneurs indicated their businesses operate regionally and nationally, a total of 17.6% of ventures operate on an international basis. Non-venturing graduates (n=152) indicated (58%) that they have been involved in intrapreneurial projects in their careers to date and 45.2% of these proposed entrepreneurship on their MBA was either “very useful” or “useful” in this regard. While over 70% of these graduates claim to have had an entrepreneurial idea, this had not been pursued due to a number of reasons including contentment with present career (48.5%), and a lack of capital (20%). Interestingly, 24% of responding graduates contended that it was either “probable” or “highly probable” they would start a business in the future, and furthermore, 13.2% indicated they were

actively seeking an idea for a new enterprise “to a large extent”. This chapter posed the following research hypothesis:

Null Hypothesis =

Ho Entrepreneurship Education is not an influencing factor in graduates’ propensity to venture.

Alternative Hypothesis =

Ha Entrepreneurship Education is an influencing factor in graduates’ propensity to venture.

In exploring the research hypothesis, five further sub-hypotheses were articulated. These were based on the research objectives already detailed in Chapter 1 and outlined at the beginning of this chapter. The results of each individual sub-hypothesis are outlined in Table 4.67.

Table 4.67 Summary results of hypotheses testing

<i>H01</i>	<i>There are no differences in the objectives of graduates who took entrepreneurship as a module and ventured and the objectives of non- venturing graduates who took an entrepreneurship as a module</i>	Do Not Reject <i>H01</i>
<i>H02</i>	<i>Entrepreneurship courses have no impact on graduates’ perceived career satisfaction</i>	Do Not Reject <i>H02</i>
<i>H03</i>	<i>Entrepreneurship courses have no impact on the careers of MBA graduates</i>	Do Not Reject <i>H03</i>
<i>H04</i>	<i>Entrepreneurship education has no impact on graduate propensity to venture</i>	Do Not Reject <i>H04</i>
<i>H05</i>	<i>Entrepreneurship education has no impact on the economic performance of business</i>	Do Not Reject <i>H05</i>

The first of these sub-hypothesis (H_{01}), suggested that there were no differences in the objectives of graduates who take entrepreneurship and start ventures, and the objectives of non-venturing graduates. The alternative hypothesis (H_{a1}), proposed the opposite perspective to this, i.e., there are differences in the objectives of graduates who take entrepreneurship and start ventures, and the objectives of non-venturing graduates who take entrepreneurship. The results indicated that the null hypothesis was not rejected. Graduates' reasons for taking entrepreneurship and whether a business was started was explored, and it was established that there was no link between the two, and accordingly, the null hypothesis (H_{01}), was not rejected. Similar results were detailed concerning reasons for taking entrepreneurship and when a business was started, the realisation of objectives (on taking the programme) for those who have taken entrepreneurship and subsequent venturing rates, and the realisation of objectives (on taking the programme) for those who ventured subsequent to graduation. However, the null hypothesis was rejected in favour of the alternative hypothesis in relation to graduates' "first ranked" objective on taking entrepreneurship and whether a business had been started (Table 4.9). In all other cases, the null hypothesis (H_{01}) was not rejected.

The second sub-hypothesis offered a null hypothesis (H_{02}), which indicated that entrepreneurship courses have no impact on graduates' perceived career satisfaction. The alternative hypothesis (H_{a2}) stated that entrepreneurship courses have an impact on graduates' perceived career satisfaction. The statistical results presented indicate that the null hypothesis was not rejected. Themes examined contrasted exposure to entrepreneurship (and exposure to one and two modules) with the extent of graduate career satisfaction. The issue of graduate business start-up and career satisfaction

levels was also evaluated. Each of the above propositions indicated no link between entrepreneurship courses and the perceived career satisfaction levels of graduates, and consequently, the null hypothesis (H_{02}) was not rejected.

Sub-hypothesis 3 presented a null hypothesis (H_{03}) outlining that entrepreneurship courses have no impact on the careers of MBA graduates. The alternative hypothesis, (H_{a3}), deemed that entrepreneurship courses have an impact on the careers of MBA graduates. Again, the results highlighted that the null hypothesis was not rejected. In exploring these issues, the current research sought to highlight exposure to entrepreneurship and its association, if any, with the extent of job and career changing since completion of the MBA. Exposure to entrepreneurship was also contrasted with graduates' perception of its impact on their job change, their intention to start a business, and the extent to which they are seeking new business ideas. In all cases it was concluded there was no difference in the sample analysis. Consequently, the null hypothesis (H_{03}) was not rejected.

The fourth sub-hypothesis proposed a null hypothesis (H_{04}), which detailed that entrepreneurship education has no impact on graduate propensity to venture. The alternative hypothesis (H_{a4}), offered that entrepreneurship education has an impact on graduate propensity to venture. The results indicated that the null hypothesis was not rejected. Issues examined included start-up rates and whether entrepreneurship was taken on the MBA, exposure to more than one entrepreneurship module and venture propensity among graduates, and exposure to entrepreneurship education and the number of businesses started by survey participants. Sub-hypothesis 4 also explored graduate exposure to entrepreneurship in relation to the timing of start-ups (relative to

completing the MBA), whether graduates have been exposed to intrapreneurship and the relative usefulness of entrepreneurship, on the MBA, to intrapreneurial involvement. Finally exposure to entrepreneurship was assessed in relation to the propensity of new business ideas, future entrepreneurial intent, and the extent of business opportunity seeking by graduates. In all cases, the null hypothesis (H_{04}) was not rejected.

Finally, Sub-hypothesis 5 featured a null hypothesis (H_{05}), which stated that entrepreneurship education has no impact on the economic performance of business. The alternative hypothesis (H_{a5}) suggested that entrepreneurship education had an impact on the economic performance of businesses. Again, the results presented indicate that the null hypothesis was not rejected. Within this sub-hypothesis, graduate entrepreneurs varying exposure to entrepreneurship on their MBA, was contrasted with the current employment levels, annual sales growth, workforce size, profitability levels and the geographical trading area of their ventures. It was established that there was no difference in the sample analysis and, accordingly, the null hypothesis (H_{05}) was not rejected.

The original research question and subsequent research hypothesis of the present study (outlined earlier) is:

Null Hypothesis =

H_0 *Entrepreneurship Education is not an influencing factor in graduates' propensity to venture.*

Alternative Hypothesis =

H_a *Entrepreneurship Education is an influencing factor in graduates' propensity to venture.*

The research findings presented above indicate that the null hypothesis (H_0) is not rejected.

As already alluded to in Chapter 2 of this thesis, there seems to be relatively few studies into the outcomes of entrepreneurship education and training and this fact is clearly highlighted in the literature (Falkang and Alberti 2000; Hill and Ó Cinnéide 2001; Hill *et al.* 2003; Menzies and Paradi 2003). Studies to date either illustrate a link between entrepreneurship education and training, and graduate propensity to venture (Chrisman 1997; Henry and Hill 1999; Lopes 1999; Owuzu-Ansah and Fleming 2001; Menzies and Paradi 2003) or suggest somewhat disappointing links between the two (Chee 1985; Adams and Wilson 1995; Westhead and Storey 1996; Noel 2001; Rosa 2003). The results of the present research seem to strongly conform to the latter classification. The following chapter, Chapter 5, provides an overall discussion and conclusions for the study.

Chapter Five

Concluding Discussion and Implications of the Research

5.1 Introduction

The final chapter of this thesis focuses on a discussion of the findings, conclusions and implications of the present study. It summarises the key issues and poignant research results that pertain to the work contained within, and that may influence future research deliberations into entrepreneurship education and its outcomes. The chapter commences with a summary and discussion of the major research findings and their implications for the field of entrepreneurship education and its future development. This is followed by an examination of the limitations of the present work and the identification of possible further themes and directions for future research into the outcomes of entrepreneurship education. Finally, the chapter finishes with some concluding comments relating to the topic under investigation.

The present thesis aims to examine the long-term impact of graduate entrepreneurship education in Ireland and seeks to establish whether there is a link between exposure to entrepreneurship education and the propensity of graduates to venture. The key rationale for this thesis revolves around the fact that college and university entrepreneurship education continue to grow internationally in both scope and popularity (Edelman *et al.* 2009) but, at the same time, robust empirical research into the impact of these provisions remains very limited (Pittaway and Cope 2007).

Importantly, the contemporary literature on entrepreneurship education and its impact clearly indicates that research studies tend to have three limiting characteristics (Garavan and Ó Cinnéide 1994; Falkang and Alberti 2000; Henry *et al.* 2003; Matlay, 2005; Chapman and Skinner 2006). These limitations relate to the focus, time-span

and an absence of comparative analysis and have resulted in three identified research gaps within the discipline, which the current thesis has pursued. Firstly, scholars in conducting research contributions have tended to focus on one single course, programme or institution (Henry *et al.* 2003). Secondly, the vast majority of the studies to date have explored the immediate outcomes of entrepreneurship education initiatives and have largely ignored their long-term ramifications (Falkang and Alberti 2000). Finally, a very limited amount of research has utilised the concept of control groups where participants who have not been exposed to entrepreneurship education are included (Cooney and Murray 2008). These observations have been highlighted elsewhere within the literature (Pittaway and Cope 2007; Souitaris *et al.* 2007; Gibb 2008; Hegarty and Jones 2008; Izquierdo and Buyens 2008; Jones *et al.* 2008).

Accordingly, this study includes as its unit of analysis survey participants (MBA graduates in Ireland) who were randomly selected from a database, developed from a list of members of the MBA Association of Ireland. It encompasses graduates from a wide section of institutions throughout the Republic of Ireland. Furthermore, MBAs who participated in the present work graduated from 1992 to 2004 and included those who had, and had not been exposed to entrepreneurship education while undertaking their programme. In exploring these issues, the research problem posed was “*What influence does entrepreneurship education have on MBA graduates propensity to venture?*” In order to address this research problem, five research objectives (and associated research hypotheses) were identified and these are outlined below:

1. To explore the objectives of graduates on taking a course/s in entrepreneurship as part of their MBA.

2. To ascertain the level of career satisfaction of MBA graduates in Ireland.
3. To examine the impact of entrepreneurship courses on the careers of MBA graduates
4. To investigate the relationship between entrepreneurship education and the propensity of MBA graduates in Ireland to venture.
5. To evaluate the performance of ventures created by MBA graduates in Ireland.

A three-stage methodological approach was taken in the pursuance of testing the research hypotheses posed in the present thesis. Firstly, the work commenced with a detailed discussion of the literature on entrepreneurship and education and its impact and outcomes. Subsequently, it was established that entrepreneurship is the process in which opportunities are identified, researched and exploited, and organisations are created to pursue this activity (Bygrave and Zacharakis 2008). Furthermore, contemporary literature within the field reveals that entrepreneurship education involves the transfer of knowledge pertaining to opportunities and their identification, evaluation and exploitation. It includes skills development in relation to the acquisition of knowledge in appropriate business management areas such as marketing, finance and the business planning process. A major objective in the undertaking of a literature review is to identify research gaps and problems that the current research addresses (Denscombe 2003). As outlined earlier in the chapter, this thesis has identified the impact of entrepreneurship education as its core area of investigation.

Secondly, a mail survey of 550 randomly sampled MBA graduates was undertaken. This was conducted in order to establish the impact of entrepreneurship education on their careers to date and included graduates who had, and had not taken

entrepreneurship as part of their MBA programme. Furthermore, it included respondent graduates over a twelve year time period, 1992-2004. In total, there were 208 valid responses to the mail survey questionnaire. This represents a response rate of 37.8%. Finally, the present study included six randomly selected face-to-face interviews which complement the mail survey in that they address pertinent issues in greater depth. Consequently, the research design adopted for this research accommodates both quantitative and qualitative measures (methodological triangulation). This seeks to increase the work's validity and reliability over a single method approach to a research problem. The results from the quantitative based mail survey and qualitative face-to-face interviews are summarised and discussed in the next section of this chapter.

5.2 The Research Findings – A Summary and Discussion

This section explores the findings of the aforementioned mail survey of MBA graduates in Ireland (1992-2004) together with the six face-to-face interviews outlined above. It commences with a detailed introductory analysis pertaining to the participating MBA graduates before discussing the survey results as they relate to each of the five hypotheses identified earlier.

5.2.1 Introductory Findings on Survey Participants

The findings from the 208 valid responses to the mail survey questionnaire and the six face-to-face interviews revealed a number of pertinent details on the respondents. The introductory background details on the participants are summarized below.

At the time of completing the survey questionnaire, a total of 92% of the respondents were between the ages of 30 and 49 years. Furthermore, 97% held a third level qualification prior to commencing their MBA. The study indicated that 44% of respondents held a Business qualification before taking their MBA and a further one-third had a Science or Engineering background. Over 80% of participating graduates held job positions at managerial, senior managerial or director levels at the time of completing the survey questionnaire. Furthermore, at the time of undertaking the interviews, four of the participating MBA graduates were between the ages of 30 and 49, and two were between 50 and 59 years. Half of the participants interviewed work in a managerial capacity.

A total of 75% of the questionnaire respondents confided that they were either “very satisfied” or “satisfied” with their career to date. Similarly, interviewees (venturing and non-venturing) indicated a high degree of career satisfaction. This can be compared to the work of Owusu-Ansah and Fleming (2001) who, in their longitudinal study of Irish graduates, established that 87.7% were “very satisfied” or “satisfied” with their careers to that point in time. Furthermore, their study revealed that 42.1% of graduate entrepreneurs contended that entrepreneurship education had an impact on their career decisions. The present research indicates that 54% of graduates who ventured regarded the entrepreneurship module to have been important in their career decisions. The impact of entrepreneurship education on the career decisions of graduates will be further explored in the next section of this chapter.

Interestingly, 75% of responding graduates indicated that they had an opportunity of taking at least one module of entrepreneurship on their MBA and of these, 76% (120

graduates) did so. Four of the six interviewees took entrepreneurship as part of their MBA programme. Given the proliferation of entrepreneurship education offerings within Irish higher education (Cooney and Murray 2008, p.31), it is somewhat surprising only 75% of respondents indicated that entrepreneurship was offered on their MBA. This may be partly explained by the fact that the present research covers a twelve-year time period (1992-2004) and not all institutions may have offered entrepreneurship at the time graduates took their MBA programme. The present study revealed that 63% of the MBA graduates surveyed elected to study entrepreneurship because of a personal interest in the subject area. This was further corroborated in the face-to-face interviews. Additionally, almost half stated they did so in the hope of increasing their understanding of the discipline.

A total of 58% of participating MBAs suggested that the entrepreneurship module(s) taken were either “very significant”, “significant”, or “fairly significant” in their aspiration to become an entrepreneur or continue entrepreneurial activity. Interestingly, 24% of all non-venturing graduates suggested that it was either “highly probable” or “probable” they would start a business in the future. This percentage increased marginally (to 26.5%) when solely considering the responses of those respondents who studied entrepreneurship on the MBA. The Global Entrepreneurship Monitor report for Ireland (Fitzsimons and O’Gorman 2008) highlights that 10% of the Irish population aspires to start a business in the next 3 years. While the result of the present research is consistent with the work of Souitaris *et al.* (2007), the percentage involved is significantly lower than that established by Menzies and Paradi (2003). Their survey of “undergraduate” engineering graduates indicated that 69% of those who took one module of entrepreneurship intended to venture in the future.

However, Menzies and Paradi (2003) allude to the fact that technological graduates seem to start ventures at a rate greater than business graduates, and this may partly explain the disproportionate results of both studies.

The present quantitative survey revealed that 26.9% of participating graduates had started their own business and of these, 67.8% had been established subsequent to MBA completion. The percentage of participants who started business (26.9%) is approximately twice that of the national population average. Furthermore, the GEM report for Ireland (Fitzsimons and O’Gorman 2008) indicates that 13.3% of the Irish population are running a business enterprise. The predisposition of MBA graduates to entrepreneurship as a career is alluded to in the literature (Hill *et al.* 2003). Of those graduates who took entrepreneurship and ventured (n=35), 66% have done so subsequent to completing their MBA. This represents 19% of all those who took entrepreneurship and is substantially less than the 34.1% established by Menzies and Paradi (2003) in their study into the venturing rates of engineering graduates who had one module of entrepreneurship as part of their “undergraduate” programme. Within the present study, venturing graduates who had taken entrepreneurship confided through the face-to-face interviews that they would have started their businesses if they had no exposure to entrepreneurship education. The entrepreneurial “spark” was already there.

Over a quarter of the businesses founded by all participants are consultancy based. A further 14.5% compete within the food industry while 20% operate in the construction and engineering sectors. The remaining enterprises are in information technology, retail, tourism, training and healthcare. The main reason given for starting a venture

was the identification of a business opportunity (one-third of respondents). Entrepreneurship education or training did not feature as a primary reason for business start-up. This is somewhat different to the results of the work presented by Clarke *et al.* (1984). They indicate that 75% of their survey participants claimed that their entrepreneurship course had a “large” or “very large” impact on their decision to venture. A total of 64% of participant’s businesses employ less than ten people. A further 30% of enterprises employ between ten to 49, while the remaining ventures employ 50 to 249 staff. The present research suggests that the vast majority of ventures created by participating graduates had demonstrated growth in sales volume, workforce size and profitability over the last three years. Importantly, there was no link established between venture performance and exposure to entrepreneurship education. This has been identified within the literature as an area worthy of future research (Block and Stumpf 1992; Hindle and Cutting 2002).

Finally, of those respondents who did not start a business, 45.2% indicated that the entrepreneurship module(s) on their MBA was either “very useful” or “useful” in current role as employee. Hill *et al.* (2003) refer to the development of intrapreneurial skills by graduates through entrepreneurship education. This was further confirmed in the interviews where both venturing and non-venturing participants indicated that the entrepreneurship module(s) on their MBA were very useful in a number of areas including business planning and new idea generation.

In summation, the questionnaire survey indicated that the vast majority of respondents were aged between 30 and 49 years and held managerial positions. While three quarters had the opportunity of taking entrepreneurship on their MBA, 76% of these

graduates did so. The vast majority of respondents expressed satisfaction with their career to date. In total, 26.9% of participating graduates had started a business and the majority of these ventures (64%) employ less than ten people. A total of 62.5% of these graduate entrepreneurs had taken entrepreneurship and 66% ventured subsequent to completing their MBA. Entrepreneurship education or training did not feature as a major reason for starting a business. Of those respondents who did not venture, 24% indicated it was either “highly probable” or “probable” they would do so in the future. This percentage was not significantly higher for those who had taken entrepreneurship on their MBA. The findings of the face-to-face interviews collaborate much of the data from the questionnaire survey and help provide additional detail and clarification. Collectively, both the qualitative and quantitative methodologies have helped contribute to the survey findings, which are summarized and discussed in the remainder of this section.

5.2.2 Research Findings and Discussion

The research hypothesis formulated for the purposes of the present research is outlined below:

Null Hypothesis =

Ho *Entrepreneurship education is not an influencing factor in graduates' propensity to venture.*

Alternative Hypothesis =

Ha *Entrepreneurship education is an influencing factor in graduates' propensity to venture.*

This research hypothesis is further broken down into five sub-hypotheses, which directly test the research objectives for the study. The research question and

associated research objectives for the present study have been outlined earlier in this chapter. The following sub-sections examine the survey results as they relate to each of these research sub-hypotheses. They briefly explain the research objective that the sub-hypothesis is based upon and explore the results attained on testing.

5.2.3 RO1 To explore the objectives of graduates on taking a course/s in entrepreneurship as part of their MBA.

The entrepreneurship education literature identifies this as a key area for research deliberation (Block and Stumpf 1992). Furthermore, the varying objectives of entrepreneurship education are regarded as a growing area of interest within more contemporary research contributions (Kuratko 2005; Hindle 2006; Johansen 2007). The vast majority of work conducted to date within this area has explored the objectives of courses and programmes (Hannon *et al.* 2005; Heinonen and Poikkijoki 2006; Fayolle and Gailly 2007; Johansen 2007; Tounes 2007; Vijay and Ball 2007; Cooney and Murray 2008; Jones *et al.* 2008). However, the objectives of graduates on taking courses in entrepreneurship education are largely ignored within the literature, yet are identified as an important research theme (Matlay 2005). Consequently, Block and Stumpf (1992) advise that the central area of interest is whether the pre-course objectives of those who venture are different from those graduates who do not venture and pursue alternative careers in employment. In order to test this research objective statistically, the following sub-hypothesis was proposed:

Null Hypothesis =

H₀₁ *There are no differences in the objectives of graduates who took entrepreneurship as a module and ventured, and the objectives of non-venturing graduates who took entrepreneurship as a module.*

Alternative Hypothesis =

Ha1 There are differences in the objectives of graduates who took entrepreneurship as a module and ventured, and the objectives of non-venturing graduates who took entrepreneurship as a module.

The current study revealed that the null hypothesis (H₀₁) was not rejected. This result was established through the statistical examination of a number of different data sets and secondly, through the face-to-face interviews. The first data set examined was a comparison between the reasons graduates took entrepreneurship on their MBA and whether a business venture was started. The reasons for graduates taking entrepreneurship are explored in the literature (Charney and Libecap 2003; Jones 2007; Gwyenne 2008) but the present study examined these in relation to business start-up. The results indicated no significant difference ($\chi_s^2 = .261$ $p = .609$) in the sample analysis and consequently the null hypothesis (H₀₁) was not rejected.

Similarly, the reasons of participating graduates for taking entrepreneurship on their MBA was statistically compared to when they ventured and once again the null hypothesis was not rejected. However, when the responses of those respondents who identified “intent to start a business” as their main objective on taking entrepreneurship are statistically compared to whether a business was started, the result suggests a significant difference in the sample analysis and a direct link between the factors being examined ($\chi_s^2 = 8.702$ $p = .003$). Consequently, the null hypothesis (H₀₁) is rejected in favour of the alternative hypothesis (H_{a1}). Finally, the present thesis explored the extent to which graduates objectives were realised. This was examined in relation to overall venturing rates of participants as well as for those

respondents who had ventured. In both cases the null hypothesis was not rejected and no difference was found in the factors under statistical scrutiny.

Accordingly, the clear and dominant trend with Sub-Hypothesis 1 suggests that the null hypothesis is not rejected. This indicates that there was no significant difference established in the sample and consequently, there is no link between the objectives of graduates who took entrepreneurship as a module and ventured and the objectives of non-venturing graduates who took entrepreneurship as a module. The face-to-face interviews further confirm this as participant interviewees (both venturing and non-venturing) confided that they undertook the entrepreneurship module on their MBA because of an interest in the discipline and no differences were found between each group. Furthermore, it is important to highlight that these results (both qualitative and quantitative) cannot be compared to similar research conducted elsewhere as this author has been unable to find empirical work similar to that currently being investigated. The need for further research in this area is outlined later in the chapter.

As indicated above, the only exception to not rejecting the null hypothesis was when graduates who identified “intent to start a business” as their main objective on taking entrepreneurship, were compared to whether a business was started. This data set suggested that of all respondents who highlighted “intent to start a business” as their main objective on undertaking their entrepreneurship module(s) (n=46), 21 graduates had ventured and the remaining 25 had not. Subsequently, when statistically tested, it was established the null hypothesis was rejected in favour of the alternative hypothesis and there was a link established between this “first ranked” objective whether a venture was started. It suggests that those venturing graduates who

undertook their MBA entrepreneurship module(s) did so with a clear objective, the desire to start a business. Similar findings are highlighted by Brown (1990). He established that 90% of his survey participants had the clear objective of starting a venture before undertaking their entrepreneurship courses. Contemporary entrepreneurship education literature alludes to this (Gorman *et al.*1997; Matlay 2005) and refers to the possibility of students undertaking an entrepreneurship course already “predisposed to an entrepreneurial career” (Menzies and Paradi 2003). However, while this remains, as yet, largely untested within the field, it seems to be the case within the context of the present study.

The second research objective, which is outlined below, examines the career satisfaction levels of MBA graduates in Ireland.

5.2.4 RO2 To ascertain the level of career satisfaction of MBA graduates in Ireland

This objective seeks to ascertain and compare, the relative career satisfaction levels of venturing and non-venturing survey participants who have (and have not) been exposed to entrepreneurship education. The importance of this research theme has been highlighted in the literature (Block and Stumpf 1992; Hindle and Cutting 2002; Matlay 2005; European Commission 2008b). Furthermore, attempts to explore this area are “in short supply and badly needed as demonstrations of the efficacy of entrepreneurship education programmes” (Hindle and Cutting 2002). This is regarded as a subjective measure of the impact of entrepreneurship education (McMullan *et al.* 2001). The sub-hypothesis tested states:

Null Hypothesis =

Ho2 *Entrepreneurship courses have no impact on graduates' perceived career satisfaction.*

Alternative Hypothesis =

Ha2 *Entrepreneurship courses have an impact on graduates' perceived career satisfaction.*

The findings revealed in this investigation indicate that no link was established between entrepreneurship courses and their impact on the perceived career satisfaction levels of participant graduates. Consequently, the null hypothesis was not rejected. In establishing this result, a number of data sets were tested. Firstly, exposure to entrepreneurship education and the extent of career satisfaction levels were examined. Some 71.1% of graduates who had taken entrepreneurship expressed themselves to be “very satisfied” or “satisfied” with their career to date. This is slightly higher than those with no such exposure to entrepreneurship education, 65.7% of whom were “very satisfied” or “satisfied” with their career.

However, when statistically explored, it was established that there was no significant difference in the sample analysis and, consequently, the null hypothesis was not rejected ($\chi_s^2 = 4.290$ $p = .232$). This was at the 95% confidence level ($p > 0.05$). The results presented within the present study differ from those outlined by Hindle and Cutting (2002). Their study, involving participants who had and had not taken entrepreneurship as part of an “undergraduate” programme, highlighted that those individuals who had taken entrepreneurship exhibited greater career satisfaction than those with no entrepreneurship course. Similarly, the null hypothesis was not rejected ($\chi_s^2 = 2.049$ $p = .562$) when the relationship between differing exposure to

entrepreneurship education (one or two modules) and the extent of graduate career satisfaction was tested. Again, this was at the 95% confidence level ($p > 0.05$).

Finally, this study compared the career satisfaction levels of those who ventured and those who had not. While 76.7% of venturing graduates indicated they were either “very satisfied” or “satisfied” with their career to date, almost the same percentage (75.3%) of non-venturing respondents expressed the same sentiment. When this was statistically tested, the Pearson chi-square test (with a critical value of $\chi^2 = 7.81$) identified that there was no significant difference ($\chi^2 = 1.746$ $p = .627$) between business start-ups and graduate career satisfaction levels at the 95% confidence level ($p > 0.05$) and the null hypothesis was not rejected. Once again, these results are further corroborated by the findings of the aforementioned face-to-face interviews. Participating interviewees, while expressing high levels of career satisfaction, were unsure whether taking an entrepreneurship module(s) had an impact on the career satisfaction levels. Furthermore, both venturing and non-venturing graduates indicated high levels of career satisfaction in their careers to date.

As indicated earlier, there has been little empirical work conducted into entrepreneurship education and the career satisfaction level of graduates. However, some of the above findings are affirmed by the earlier work of Owusu-Ansah and Fleming (2001). Their cohort of respondents (graduates from undergraduate programmes in Ireland) indicated a high degree of satisfaction with 87.7% either “satisfied” or “very satisfied” with their careers to date. However, similar to the present study, there was little difference established between those graduates who ventured and those who had not. Likewise, similar results are reported by Charney

and Libecap (2003) in their survey of business school alumni from the University of Arizona. This work indicated only very marginal differences in satisfaction levels between those who were and were not exposed to entrepreneurship education.

The third research objective relating to the present investigation aims to assess the impact of entrepreneurship courses on the careers of MBA graduates

5.2.5 RO3 To examine the impact of entrepreneurship courses on the careers of MBA graduates

While contemporary literature refers to student attitudes towards entrepreneurial careers (Scott and Twomey 1988; Cooper *et al.*, 2004; Kuratko, 2005; Edelman, 2008; Shinnar *et al.*, 2009), few studies have explored the influence of entrepreneurship education on the subsequent career choices of graduates. As noted earlier in the thesis, this is somewhat surprising as the raising of awareness of entrepreneurship as a future career possibility is often cited within the literature as a core objective of entrepreneurship education (Gorman *et al.* 1997; McMullan and Vesper 2000; Henry *et al.* 2005). Consequently, entrepreneurship education and its impact on the careers of graduates have been highlighted as an important area worthy of further research deliberation (Menzies and Paradi 2003). This research objective focuses not only on the impact of entrepreneurship education on the graduate respondents who have ventured but also examines its impact on survey participants who have not started businesses. The sub-hypothesis tested states:

Null Hypothesis =

H₀₃ Entrepreneurship courses have no impact on the careers of MBA graduates.

Alternative Hypothesis =

Ha3 *Entrepreneurship courses have an impact on the careers of MBA graduates.*

The statistically tested findings summarized below revealed that there was no link established between entrepreneurship education and its impact on the careers of responding MBA graduates. Consequently, the null hypothesis was not rejected. Firstly, participant exposure to entrepreneurship education was examined in relation to the extent of job change and career change on MBA completion. On both fronts (job and career change) it was deduced that there was no significant difference in the sample analysis and no link established between the factors under investigation. The null hypothesis was not rejected. The above result is somewhat different to the findings of Clark *et al.* (1984). They report not only a high degree of career change but also that 75% of respondents regarded their entrepreneurship course as having a large or very large impact on this.

Furthermore, the amount of entrepreneurship (one module or two modules) undertaken by respondents was tested along with the extent of graduate job and career change subsequent to MBA completion. The results revealed that there was no link between exposure to varying degrees of entrepreneurship education and the extent of job and career change by graduates. Once again the null hypothesis was not rejected. Likewise, when respondents who had changed jobs and careers on completion of their MBA were asked whether their entrepreneurship module (s) had an important impact on their decision, there was no significant difference in the sample analyses and the null hypothesis was not rejected.

Finally, this sub-hypothesis studied the extent to which participating graduates were seeking opportunistic ideas for new ventures. The results indicated that 45.7% of graduates (non-venturing) who had taken entrepreneurship were seeking new business ideas. However, the figure for non-venturing graduates who had not taken entrepreneurship was slightly lower at 40%. Furthermore, when the amount of exposure to entrepreneurship education was statistically examined, it was established that there was no link with the extent to which graduates were seeking out new business ideas. Consequently the null hypothesis was not rejected. These results were further substantiated by the face-to-face interviews where graduate participants confided that they changed (or plan to change) career because of such issues as opportunities, challenge and professional circumstances. It is interesting to note that 39.9% of questionnaire respondents either “strongly agreed” or “agreed” that studying entrepreneurship had an important impact on their career decisions. However, while the interviewees did stress the benefits of entrepreneurship education, it appears that these were perceived as somewhat peripheral in the overall context of their careers. In summation, the present study established that statistically, there was no link established between entrepreneurship and the impact on graduate careers and accordingly the null hypothesis is not rejected.

Very little empirical research has been presented on the impact of entrepreneurship education on the careers of graduates. Much of the work completed to date has focused on entrepreneurship as a career aspiration (Scott and Twomey 1988; Hill *et al.* 2003). The only comparable study noted by the present author was conducted Owusu-Ansah and Fleming (2001). They suggest that 35.5% of their total respondent population indicated that entrepreneurship education had a “very important” or

“important” effect on their career decision. This figure is slightly lower than the 39.9% highlighted above. These issues will be further explored later in the chapter.

The penultimate research objective, which is outlined below, explores the impact of entrepreneurship education on graduates’ propensity to venture.

5.2.6 RO4 To investigate the relationship between entrepreneurship education and the propensity of MBA graduates in Ireland to venture.

While the international growth in entrepreneurship education provision is amply documented within the literature (Hindle 2006; Klandt and Volkmann, 2006; Green and Rice, 2007; Gibb, 2008; Katz, 2008; Cooney and Murray 2008; Shinnar *et al.*, 2009), a number of prominent theorists caution that there has been remarkably little research deliberation into the long-term impact of provisions and specifically graduates’ propensity to venture (Menzies and Paradi 2003; Menzies 2004; Johnsen 2007; Pittaway and Cope 2007). The fourth research objective (RO4) of the thesis attempts to address this deficit and accordingly, the following research hypothesis was proposed:

Null Hypothesis =

Ho4 *Entrepreneurship education has no impact on graduate propensity to venture.*

Alternative Hypothesis =

Ha4 *Entrepreneurship education has an impact on graduate propensity to venture.*

The quantitative survey results clearly indicate that the null hypothesis is not rejected and consequently no significant difference was evident within the sample analysis. This highlights that no link was established between exposure to entrepreneurship

education and graduate propensity to venture. Once again, the qualitative face-to-face interviews corroborated these findings. In establishing this result, a number of different data sets were statistically explored. Firstly, graduate start-up rates were examined in relation to whether entrepreneurship was taken on the MBA. This test resulted in no difference being found and the null hypothesis was not rejected. Consequently, the present research affirmed that no link was established between business start-up rates and graduate exposure to entrepreneurship education.

This result corroborates the work of several other authors (Chee, 1985; Adams and Wilson, 1995; Westhead and Storey, 1996; Noel, 2001; Rosa, 2003). Like the current investigation and as outlined earlier (Chapter 2), their work indicates disappointing results regarding the outcomes of entrepreneurship education and training. The implications of this poignant finding are further discussed later in this section. Moreover, this study also explored the implications of graduate participants taking more than one entrepreneurship module and the resulting impact on their venture start-up propensity. When statistically tested, it was established that there was no difference in the sample analysis and no link established between the factors under investigation. Accordingly, the null hypothesis was not rejected. Very little research has been conducted in this area and consequently, it has been identified by Menzies and Paradi (2003) a topic worthy of further investigation.

The impact of entrepreneurship education on the number of ventures created, and the consequent timing of these start-ups (before, during or after MBA completion) was also tested. In both cases, there was no significant between the factors examined and the null hypothesis was not rejected. Finally, the extent of linkage between

entrepreneurship education and graduates' interest regarding new business ideas, and future entrepreneurial intent were examined. There was no link established between entrepreneurship education and graduates' involvement with intrapreneurial (entrepreneurial employees) endeavour. Furthermore, there was a similar result when the usefulness of entrepreneurship on the MBA was tested in relation to graduate's intrapreneurial activity. Consequently, the null hypothesis was not rejected. Moreover, there was no significant difference in the sample analysis and no link between exposure to entrepreneurship education by graduates and their propensity for new business ideas or future entrepreneurial intent. Again, the null hypothesis was not rejected.

These results were affirmed by the face-to-face interviews conducted as part of the present research. Venturing interviewees reported that while entrepreneurship on their MBA programme was useful, they already had a desire to pursue entrepreneurship, and started their business for reasons other than the module(s). Furthermore, non-venturing participants indicated that they undertook entrepreneurial projects at work prior to completing their entrepreneurship module(s). They highlighted the importance of the "entrepreneurial spark" within the venturing process. One interviewee confided that he selected entrepreneurship on the MBA because of an interest in the subject area and not because he wanted to start a business. The "spark", he concluded, was never there. Another interviewee advised that he always wanted to start a business and completing the entrepreneurship module did not alter this ambition.

Accordingly, the findings of this study indicate that entrepreneurship education has no impact on graduate propensity to venture. Moreover, it seems to contradict a number of earlier studies already alluded to in Chapter 2 of this thesis (Clark *et al.* 1984; Wyckham 1989; Kolvereid and Moen 1997; Upton *et al.*, 1995; McMullan and Gillan 1998; Owuzu-Ansah and Fleming 2001; Menzies and Paradi 2003; Jones *et al.* 2008). These studies highlighted a link between entrepreneurship education and graduate venturing. On the otherhand, it corroborates the work of other aforementioned theorists (Chee 1985; Adams and Wilson 1995; Westhead and Storey 1996; Noel 2001; Rosa 2003), whose work indicated the contrary. However, as already noted in Chapter 2, these research contributions have the following characteristics: (1) they tend to focus on the outcomes from one particular course, programme or institution. (2) Most of them explore the immediate outcome of provisions and ignore the long-term effects of entrepreneurship education and training. (3) The majority of contributions do not utilize control groups comprising of participants who have not been exposed to entrepreneurship education. These vulnerabilities have been highlighted in the literature (Falkang and Alberti 2000; Matlay 2005; Chapman and Skinner 2006; Pittaway and Cope 2007; Souitaris *et al.* 2007; Gibb 2008; Hegarty and Jones 2008; Cooney and Murray 2008; Izquierdo and Buyens 2008; Jones *et al.* 2008) and are addressed within the context of the current investigation. Consequently, Cox *et al.* (2002) propose that much of the research to date has not provided empirical support to indicate that exposure to entrepreneurship education increases the likelihood of an individual starting a venture.

An exception to this is the work of Owuzu-Ansah and Fleming (2001), who conducted a nationwide longitudinal study of graduates with control groups. They

advise: “tentative evidence suggests that a relationship exists between entrepreneurship education and business venturing” (Owuzu-Ansah and Fleming 2001). However, their research followed the career paths of respondents who had specifically undertaken an undergraduate programme in Ireland. The current investigation focuses on MBA graduates (postgraduates), and only the work of Gillan *et al.* (1996) and McMullan and Gillan (1998) look at venturing rates among this cohort. While their research indicated a positive relationship, it only looked at three institutions (US, Australia and Canada) and over a comparatively short time period (1993 to 1995).

The current investigation has addressed the perceived vulnerabilities in research conducted to date and accordingly has reported findings that do not confirm a link between entrepreneurship education and business venturing. However, these results represent the findings of one study in one country. Clearly, they underline that more research is required to further investigate this relationship. This will be further discussed later in this chapter. The final research objective pertaining to the current investigation aims to assess the performance of ventures created by participating graduate entrepreneurs.

5.2.7 RO5 To evaluate the performance of ventures created by MBA graduates in Ireland.

Exploring the economic performance of business ventures created by MBA graduates is highlighted by Block and Stumpf (1992) as an important measure of the outcomes of entrepreneurship education. Moreover, they suggest that the criteria examined should include performance indicators such as size (sales levels), employee levels and profitability. Gillin *et al.* (1996) and McMullan *et al.* (2001) further support these

performance measures and advise that comparisons are best made with control groups. This enables the ventures of graduates with entrepreneurship education to be contrasted to the ventures of graduates with no such exposure. The importance of exploring economic factors as a means of examining the impact of entrepreneurship education is highlighted elsewhere within the literature (Henry and Hill 1999; European Commission 2008b). Accordingly, the current research posed the following sub-hypothesis:

Null Hypothesis =

H₀₅ Entrepreneurship education has no impact on the economic performance of business.

Alternative Hypothesis =

H_{a5} Entrepreneurship education has an impact on the economic performance of business.

Firstly, exposure to entrepreneurship education and current employment levels, sales levels, trends in workforce size, profitability and geographical trading area were statistically tested. In all cases, it was established that there was no link between entrepreneurship education and each of these factors. Consequently, the null hypothesis was not rejected. Furthermore, the varying levels of participant exposure to entrepreneurship education (one module or two modules) was tested with each of the aforementioned venture performance criteria. Similarly, this resulted in no difference being established in the sample analysis and accordingly, the null hypothesis was not rejected. This suggests that based on the findings of the current study, there was no link established between exposure to entrepreneurship education and the economic performance of the ventures created by participating MBA graduates.

The face-to-face interviews conducted as part of the current investigation further support this result. One interviewee confided that he did not believe he would “sell more” had he two entrepreneurship modules (as opposed to one). Another graduate interviewee suggested that while the overall MBA “experience” may have impacted on the performance of their venture, they did not wish to single out one particular venture. In summation, participating interviewees indicated that the performance of their business ventures might have been influenced by their overall MBA experience, but not by exposure to one or two individual entrepreneurship modules.

Similar results were reported by Hindle and Cutting (2002). Their study, involving graduates who had and had not been exposed to entrepreneurship education, suggested that no economic advantage (increase in sales and profits) accrued to the former category of participant. Furthermore, the work of Menzies and Paradi (2003) indicates that there were no differences established in the performance of ventures created by graduates with and without an entrepreneurship module/s. However, Charney and Libecap (2003) suggest that firms owned by graduates who have taken entrepreneurship “appear to be larger and have more sales” than the ventures of graduates who have had no exposure to entrepreneurship education.

With the exception of these studies, remarkably little research has been conducted into the performance of ventures created by graduates who have been exposed to entrepreneurship education. Consequently the sub-hypothesis under investigation remains largely untested. The current researcher proposes that more empirical work in this area much needed. As with the present study, further research should have a long-term perspective, with control groups (graduates who have and have not been exposed

to entrepreneurship education) and should include a number of programmes and institutions. This is further outlined later in the chapter.

In summation, the testing of the five aforementioned sub-hypotheses pertaining to the present thesis has resulted in the overall non-rejection of the null hypothesis as no link was established between entrepreneurship education and graduate propensity to venture. These results are further summarized in Table 5.1 below.

Table 5.1 Testing sub-hypotheses

<i>H₀₁</i>	<i>There are no differences in the objectives of graduates who took entrepreneurship as a module and ventured and the objectives of non- venturing graduates who took an entrepreneurship as a module.</i>	Do Not Reject
<i>H₀₂</i>	<i>Entrepreneurship courses have no impact on graduates' perceived career satisfaction.</i>	Do Not Reject
<i>H₀₃</i>	<i>Entrepreneurship courses have no impact on the careers of MBA graduates.</i>	Do Not Reject
<i>H₀₄</i>	<i>Entrepreneurship education has no impact on graduate propensity to venture.</i>	Do Not Reject
<i>H₀₅</i>	<i>Entrepreneurship education has no impact on the economic performance of business.</i>	Do Not Reject

Based on these findings, this author advises on a number of measures that would not only help address the issues raised above but would also assure future growth and increased credibility within the field. Firstly, more researchers must be encouraged to explore the impact of entrepreneurship. Considering the growth in entrepreneurship education alluded to earlier in this thesis (Gwynne 2008; Katz 2008; Shinnar *et al.* 2009) and the “maturity” achieved by the discipline (Katz 2008), it is remarkable that

only a comparatively small number of studies have examined the impact of entrepreneurship education. This “research deficit” has been apparent while conducting the present research and even though it has been stressed by others (Henry *et al.* 2003; Kuratko 2005; Klant and Volkmann 2006; Pittaway and Cope 2007; Gibb 2008; Izquierdo and Buyens 2008), still remains a problem. It needs to be addressed and further highlighted as a matter of urgency by those individuals and organizations interested in the field and its future development because it is only through an analysis of the impact of entrepreneurship education that the discipline can truly challenge itself and evolve effectively.

Secondly, there is a great need to develop and agree common research methodologies that facilitate comparative analysis (Falkang and Alberti 2000; Matlay 2005; Chapman and Skinner 2006; Pittaway and Cope 2007; Souitaric *et al.* 2007; Gibb 2008; Hegarty and Jones 2008; Cooney and Murray 2008; Izquierdo and Buyens 2008; Jones *et al.* 2008). As outlined in Chapter 2 of this thesis, these methods must include a long-term perspective using control groups (including those who have not taken entrepreneurship education) and examining the outcomes many courses, programmes and institutions. Fayolle *et al.* (2006) stress the need not only for entrepreneurship education stakeholders to assess the nature and intensity of the impact of entrepreneurship education, they underline that a common framework is required to evaluate and compare entrepreneurship education courses and programmes. Furthermore, they suggest that this must “go beyond the estimation of their short-term microeconomic impact” (Fayolle *et al.* 2006). The present author calls on leaders of entrepreneurship education to explore and agree such a framework.

Without such a mechanism, much research is being conducted in isolation with limited opportunity for comparative analysis and application.

Thirdly, the cost of entrepreneurship education programmes has been alluded to within the literature (Storey 2000). Consequently, this author suggests that all those organizations (especially governments) that fund entrepreneurship education must demand and agreed a more sophisticated means of assessing the impact of entrepreneurship education. This “value for money” perspective is not happening at present and such an insistence would help those concerned focus on the development of common methods of appraisal. Fourthly, those individuals (mostly academics) who develop and deliver courses and programmes must have a clear appreciation and understanding of what it is they are attempting to achieve through entrepreneurship education. Matlay (2005) indicates that entrepreneurship educators are “uncertain” about the impact of entrepreneurship education. Furthermore, the objectives of entrepreneurship education and their obvious association with the impact of courses and programmes have been alluded to within the literature (Henry *et al.* 2005). A clear focus on objectives and intended outcomes will help in evaluating the impact of entrepreneurship education and should be fundamental in its development and execution. Finally, there is a need for further work into the impact of entrepreneurship education involving participants from graduate programmes. As outlined earlier, only the present research and the work of Gillen *et al.* (1996) and McMullan and Gillin (1998) explore this cohort. This represents an obvious and important research need that should be considered and addressed. Possible further topics of future research are discussed later in this chapter.

The theoretical and empirical contribution of the research finding presented in this thesis and the relevance of the present study are discussed below.

5.3 The Theoretical and Empirical Contribution of the Thesis

This section aims to highlight the overall contribution that the present study makes to the existing body of research within the field of entrepreneurship education. By way of background, it is important to restate that entrepreneurship education has been describe widely within the literature as an academic discipline that has enjoyed exponential international growth and development over the last three decades (Katz 2003; Kuratko 2005; Green and Rice 2007; Cooney and Murray 2008; Edelman *et al.*, 2009; Hazlett *et al.* 2009). Moreover, the aforementioned literature has been equally vociferous with regard to claiming that despite widespread acknowledgement of its benefits and importance, there has been an acute absence of robust research within the various aspects of the entrepreneurship education domain (Kirby 2002). In particular, the outcomes and impact of entrepreneurship education has been variously noted as a centrally important theme that has experienced a lack of research deliberation (Klandt and Volkmann 2006; Pittaway and Cope; 2007; Cooney and Murray 2008; European Commission 2008a; Gibb 2008; Izquierdo and Buyens 2008; Nabi and Holden 2008; Solomon 2010).

This thesis adds to the existing and relatively small body of research within the area of entrepreneurship education and its impact. The literature review conducted as part of the present investigation suggested that, with very few exceptions, previous studies have had three major weaknesses. They have tended to examine one particular course or institution, have largely ignored the long-term ramifications of provisions, and

have not used control groups with participants who have not been exposed to entrepreneurship education. This investigation makes an important contribution to the field in that it addresses all three of these considerations. Participating graduates were from a wide range of institutions throughout Ireland, had graduated with their MBA between 1992-2004 and included those who had and had not studied entrepreneurship. Moreover, the findings of the present work highlight issues of importance, which contribute to the field of entrepreneurship education and its future development and these are further discussed below.

As stated earlier, the research problem posed within the current work is “*What influence does entrepreneurship education have on MBA graduates propensity to venture?*” In pursuing this, the following research hypothesis was stated:

Null Hypothesis =

Ho *Entrepreneurship education is not an influencing factor in graduates’ propensity to venture.*

Alternative Hypothesis =

Ha *Entrepreneurship education is an influencing factor in graduates’ propensity to venture.*

Through studying this under-researched empirical question and subsequently testing, with quantitative and qualitative measures, the five aforementioned sub-hypotheses, the following results contribute to the field of entrepreneurship education. The major contribution of this thesis is that the overall null hypothesis was not rejected as no link was established between entrepreneurship education and its influence on MBA

graduates propensity to establish businesses. This is based on a number of important findings are detailed below:

- It was established that there was no differences in the objectives of graduates who took entrepreneurship as a module on their MBA and ventured, and the objectives of non-venturing graduates who took entrepreneurship as a module. Although identified in the literature as an important area of future research interest (Block and Stumpf 1992), the present author has been unable to find any other empirical contribution that has attempted to explore this dimension.
- The results of this study indicate that there was no relationship established regarding exposure to entrepreneurship education and the propensity of MBA graduates in Ireland to venture. As indicated in Chapter 2 of the current work, previous studies that have explored this area can be divided into those that have established a link and those that have not. While the results of this thesis fit into the latter category, it is important to underline once again that many of these aforementioned contributions were confined to the short-term, used graduates from a single institution and did not include control groups.
- The present research suggests that exposure to entrepreneurship education by MBA graduates has no impact on the economic performance of their ventures. Block and Stumpf (1992) identify this as an important measure of the outcomes of entrepreneurship education. Furthermore, the literature suggests that appropriate criteria to be examined might include size (sales levels), employee levels and profitability (Block and Stumpf 1992; Gillin *et al.* 1996; McMullan *et al.* 2001). The findings concur with the work of other

researcher (Hindle and Cutting 2002; Menzies and Paradi 2003). Their research failed to demonstrate marked financial advantages accruing to the ventures of those who were exposed to entrepreneurship education..

- The findings emanating from this investigation have not established a link between entrepreneurship education and its impact on the careers of graduates. Once again, there has been little research conducted within this area, but the finding is affirmed elsewhere in the literature when those who had ventured were compared with those who had not (Owusu-Ansah and Fleming 2001).
- Finally, there was no link established between exposure to entrepreneurship education and graduates' perceived career satisfaction. Furthermore, there was little difference between the career satisfaction levels of those respondents who had ventured and those who had not. This result differs to the findings of Hindle and Cutting (2002) who indicate that responding pharmacy graduates who had taken an entrepreneurship programme experienced greater job satisfaction than those who had not taken entrepreneurship. However their sample was small (25 graduates who had taken entrepreneurship and 23 who had not). Furthermore, the work of Owusu-Ansah and Fleming (2001) in this area has already been alluded to earlier in the chapter.

While the findings of this thesis are significant and unquestionably contribute to the field, they must be seen within the context of two important observations. Firstly, as outlined earlier, there is a gross shortage of empirical research within all of the dimensions explored above. Furthermore, there has been very little work done on the

entrepreneurial behaviour of MBA graduates. This makes the comparison of results and methodologies difficult. Secondly, the current investigation has been conducted within the confines of a Masters degree thesis. Inevitably, it has certain limitations and shortcomings. These, together with a number of associated opportunities for further research are discussed within the remaining two sections of the chapter.

5.4 Limitations of the Study

As is the case with most empirical investigations, the research design pertaining to this thesis has a number of specific limitations. It is important that these are fully recognized and appreciated by the reader when considering the findings presented. Consequently, the following section identifies and explains the limitations that relate to the present work.

It is well documented within the literature that questionnaire surveys often give little insight into the causes behind a particular phenomenon or event (Adam and Healy 2000). The current researcher was acutely aware of this methodological vulnerability when planning and undertaking the study, and introduced some measures to address its impact. Firstly, the survey instrument includes a mix of open and closed type questions. The open questions provided more detail as they afforded respondents the opportunity of expanding on their views and perspectives already indicated within the closed type questions. Secondly, the research design employed within this thesis features both quantitative and qualitative measures (methodological triangulation). The qualitative element (face-to-face interviews) enabled issues and themes, already identified in the questionnaire survey, to be explored in greater depth.

A primary limitation of questionnaire type surveys is that of non-response error (Domegan and Fleming 2007). As already indicated in Chapter 4, this thesis achieved a response rate of 37.8%. This is a commendable performance considering that mail questionnaire responses are often as low as 10% Domegan and Fleming (2007). However, it was deemed important to ensure that the non-respondent population did not differ markedly from respondent graduates. Accordingly, this potential bias was tested through comparing a random sample of questionnaires received late with a random sample of the remaining volume of completed survey instruments. An additional (n=10) 5% of questionnaires were examined in each sample and there was no perceivable anomaly identified. A further limitation of this study is the fact that responses from participants are largely subjective and particular to such things as individual experience, perception and aspiration. Fleming (1999) identified the issue of respondent subjectivity as being important in assessing the outcomes of entrepreneurship education and observes that subjective measures are difficult to measure in a valid and reliable fashion. Accordingly, and in line with the work of McMullan et al. (2001), the present study has attempted to address this by including measures that are both subjective and objective. As outlined earlier in Chapter 2, subjective measures include factors such as career satisfaction while objective measures include variables like job description, sales growth, employment levels and profits.

Moreover, this investigation involves the study of participants who graduated over a twelve-year period (1992-2004). Given this length of time, it is unavoidable that the recall of some participants on their MBA programme may be somewhat hazy and this could have had a consequent impact on the survey response rate. However, even

though 60% of the questionnaire respondents graduated subsequent to 2000, half of the participating interviewees completed their MBAs in either 1992 or 1993. This goes some way to reducing the potential bias (featuring more recent graduates). Moreover, while contact details often change over such a time period, the information obtained by this researcher from the MBA Association of Ireland (MBAAI) was relatively up to date as members subscribe to the MBAAI each year. It was on the basis of this information that the current author constructed the survey database.

Other limitations pertaining to the present research relate to the fact that there are a number of topics that are omitted from the survey instrument. Issues such as module content, teaching and assessment methodologies, the degree to which new skills were developed by graduates, and how courses might be improved and augmented, were not included in the survey instrument. These important issues were not included in the questionnaire as the current research agenda was deemed sufficiently challenging, from a time and resources perspective. Moreover, the current study includes MBA participants who graduated within the Republic of Ireland. There was no international comparison conducted, and, accordingly, this limits the generalisability of the findings. Furthermore, MBA graduates have particular characteristics such as age and work experience (Hill *et al.* 2003). These may make comparisons with undergraduate groups difficult. Some of these issues are further discussed in the next section of this chapter.

Finally, it should be noted that researcher's biases inevitably affect how research is conducted and interpreted. Consequently, Bryman (2001) argues that the only way to avoid these biases is to reproduce the research. This means that other researchers use

different settings and sample populations in an effort to replicate the findings. While there was no replication of results conducted within the context of the present investigation, and given that no research is without an element of personal bias, this researcher believes that the work reflects its core research question and the objectives on which it is based.

5.5 Areas for Further Research

The call for further research within the area of entrepreneurship education and its outcomes has been amply documented within the literature (Menzies and Paradi 2003). This author fully endorses the view that such research is not only desirable, but is a prerequisite for the continued growth, development and evolution of entrepreneurship education as a vibrant and sustainable academic discipline. It is also apparent that of the limited amount of studies undertaken, varying research approaches are taken and this makes the comparison of results extremely difficult (Cooney and Murray 2008). As outlined earlier in this chapter (and in Chapter 2 of this thesis), and in common with the present study, future research into the impact of entrepreneurship education must share three common characteristics; a long-term perspective, involve participants from many different institutions, and include control groups of respondents with no exposure to entrepreneurship education. This section proposes a number of research propositions, that would help address the aforementioned deficit, and robustly add to the richness of work conducted to this point in time.

The present author suggests that conducting the same study in 2011 would be an interesting comparative exercise. Considering the downturn in economic activity over

the last three years it would be interesting to find would the results yield the same or different results as those found in this study. Furthermore, as the current research involved a national survey of MBA graduates, an international study, using the same research design, would enable comparisons to be made on the basis of nationality. This work could be conducted in a collaborative manner and involve many countries. It would also be interesting to alter the survey instrument to include participants from undergraduate studies. This non-MBA cohort could be compared to the aforementioned MBA groups.

Another area worthy of future research consideration is an examination of entrepreneurship education and job satisfaction. While the present research did not establish a link between these two variables, other work does support a linkage (Hindle and Cutting 2002) and this needs further exploration. Likewise, the relationship between entrepreneurship education and such things as sales levels, profitability and venture size, is highlighted within the literature as important (Kolvereid and Moen 1997; Hindle and Cutting 2002) but, as yet remain largely ignored within the literature. It would be interesting to compare the findings of the current investigation with the results of similar studies in the two dimensions mentioned above (job satisfaction and venture performance). Moreover, entrepreneurship education and its relationship with corporate entrepreneurship (intrapreneurship) is another area that is totally under-represented within the literature and should be the subject of future research. A question that can be posed in future research could be: *“Does exposure to entrepreneurship education facilitate the development in entrepreneurial skills and abilities among corporate employees?”*.

This thesis did not explore the content, delivery and assessment methodologies involved in entrepreneurship education. Future research might examine graduate satisfaction levels with each of these dimensions in an effort to establish the most effective practices for venture creation. Additionally, the present research did not establish a linkage between the amount of entrepreneurship received and entrepreneurial behaviour. Very little empirical work has been conducted into this fundamental question. Furthermore, the extent to which graduates pre-select entrepreneurship education (in the knowledge that they aspire to starting a business) is a topic worthy of further research consideration. A research question that can be posed for future research could be: *“Is it entrepreneurship education or other societal/personal factors that result in entrepreneurial intent and behaviour?”* The present research established that entrepreneurship education was a relatively low factor on the list of reasons for start-up. Further work in this area would be both interesting and important.

In summation, more research is required to further our understanding of entrepreneurship education and its outcomes. The aforementioned topics suggested by this author represent a selection of issues that would add greatly to the discipline. However, future research must be conducted in a manner that facilitates comparisons between studies, a factor that has been missing in much of the work conducted to date.

5.6 Conclusion

This chapter has examined and assessed the findings of the present thesis. It commenced by summarizing and discussing the results of each of the five sub-

hypothesis presented. This was followed by an outline of the theoretical and empirical contribution of the study and a discussion of the limitations of the work. The chapter concluded with suggestions for further research within the field. This study explored whether entrepreneurship education was a factor in graduates' propensity to venture. The research findings presented within this thesis, indicates that there was no link established between exposure to entrepreneurship education and the consequential entrepreneurial behaviour of participating MBA graduates in Ireland. This outcome is somewhat confusing given earlier research deliberation suggesting a link between entrepreneurship education and venturing (as outlined in Chapter 2 of this thesis). However, the reader should consider two points relating to the current findings. Firstly, its results are not unique, as other studies have failed to establish a link between entrepreneurship education and training, and entrepreneurial behaviour (Wilson 1995; Westhead and Storey 1996; Fletcher 1999; Noel 2001).

Secondly, a majority of the research conducted to date has adopted different research designs and as a result, shares little commonality (Cooney and Murray 2008, p. 26). This makes comparison very difficult. Accordingly, Matlay (2005) suggests that the actual contribution that entrepreneurship courses have on entrepreneurial activity remains unclear. The results of this thesis underline not just that there is need for further work in the area, but also that such research must use basic research designs that facilitate comparative analysis. As noted earlier, future research should use control groups, have a long-term perspective and include graduates from a number of institutions and possibly graduates from abroad. Furthermore, the methodologies used, the design of survey instruments and the choice statistical analysis, should be selected in a way that facilitates and encourages collaboration and comparison. This

would not only improve the quality of research conducted but also have a positive impact on the quantity of work undertaken.

The present author concludes this thesis with mixed feelings regarding entrepreneurship education and its future. On the one side, there has been enormous international growth within the field over the last 20 years. However, on the other, and with very few exceptions, this growth has not been matched by robust research deliberation into the impact of entrepreneurship education provisions (Cox *et al.* 2002). The current thesis has attempted to address this dichotomy. Its findings are relevant to all entrepreneurship stakeholders including governments (who largely fund entrepreneurship education in Ireland) and the academic and business communities. The thesis commenced by outlining the research problem explored within the work:

What influence does entrepreneurship education have on MBA graduates propensity to venture?

The research undertaken indicates that there was no link established between exposure to entrepreneurship education and the consequential propensity of participating MBA graduates in Ireland to venture. This result should not be seen as an end in itself but rather a conduit for further comparative work in the area. Entrepreneurship education has come a long way in the last few decades. Its prominence, popularity and perceived importance are now beyond question. This researcher believes that a unified, coordinated and vociferous research agenda is now needed to sustain and ensure its future development. Further studies into the impact of entrepreneurship education should be part of this crusade and while the present study

may present more questions than answers, it does represent an important platform on which future work can be built.

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Appendices

Appendix A

Cover Letter and Quantitative Research Instrument



UNIVERSITY of LIMERICK
OLLSCOIL LUIMNIGH

Centre for Entrepreneurial Studies
Dept. of Management & Marketing
University of Limerick
Limerick

October 2005

Dear MBA Graduate

As one of the institutions in Ireland actively involved in developing and delivering entrepreneurship courses, the Centre for Entrepreneurial Studies at the University of Limerick is engaged in research into the long-term effectiveness of MBA education. Part of this important work is the current PhD research entitled *Career Path Survey – An Empirical Study of MBA Graduates in Ireland, 1992-2004*.

Currently, we are undertaking a mail survey of MBA graduates in Ireland over a thirteen-year period. As a member of the MBA Association of Ireland we have selected a random sample of fellow members of the organisation. The enclosed questionnaire is equally interested in the careers of those who did not study entrepreneurship as well as those who did as part of the MBA programme. The survey will take no more than ten minutes to complete.

I appreciate some time may have past since you undertook the MBA and you may not recollect modules in detail. However, your co-operation in participating in this survey is crucial as each response will make the findings more meaningful and will assist enormously in future curriculum development. All questionnaires are absolutely confidential and anonymity is guaranteed. I would very much appreciate your involvement with the study by returning the completed questionnaire (in the enclosed stamped and addressed envelope) at your earliest convenience.

Thanking you in advance.

Kind regards

Shane Hill, PhD Researcher
C/o Professor Patricia Fleming
Centre for Entrepreneurial Studies
Department of Management & Marketing
University of Limerick



UNIVERSITY *of* LIMERICK
OLLSCOIL LUIMNIGH

**Career Path Survey – An Empirical Study of MBA Graduates in Ireland,
1992-2004**

Questionnaire

Please return completed questionnaire in attached stamped and addressed envelope.

Mr. Shane Hill, PhD Researcher
c/o Professor Patricia Fleming
Centre of Entrepreneurial Studies
Department of Management & Marketing
University of Limerick
Limerick.

Graduate Entrepreneurship Education Survey

The primary objectives of this research are;

1. To explore the objectives of graduates on taking a course/s in entrepreneurship as part of their MBA.
2. To evaluate the propensity of MBA graduates in Ireland to venture.
3. To examine the impact of entrepreneurship education on the careers of MBA graduates.
4. To ascertain the level of career satisfaction of MBA graduates in Ireland.
5. To evaluate the performance of ventures created by MBA graduates in Ireland.

General Instructions

The majority of questions merely require you to tick (✓) the space which best represents your answer. If you feel none of the options provided apply, please write your response on the “other please specify” line.

MBA Career Path Survey

Please Tick Appropriate Boxes

SECTION A: Personal Profile

- 1 In what year did you complete the MBA programme? _____
- 2 Please indicate your age from the options below:
Under 30 years 30 < 40 years 40 < 50 years 50 < 60 years 60 +
- 3 Please specify your gender. Male Female
4. Did you hold a third level or professional qualification/s prior to commencing the MBA?
Yes No
5. Please specify the general area of your pre MBA qualification/s.
Business Computing Education Science
Engineering Humanities Other (please specify) _____
6. (a) Have you changed jobs since completing the MBA? Yes No
(b) Have you changed career since completing the MBA? Yes No
- Please expand on your answer to Question 6.

7. What is your current work position?

- 8 How satisfied are you with your career to date?
Very satisfied Satisfied Fairly satisfied Dissatisfied Very Dissatisfied

9 Was there an Entrepreneurship Module/s offered on your MBA programme?

Yes No

If Yes, please continue to Section B, Question 10

If No, please go to Section C, Question 18

SECTION B

10 Did you take the Entrepreneurship Module/s offered on your MBA programme?

Yes No

If yes, please continue to Question 11

If no, please go directly to Section C, Question 18

11 Why did you take Entrepreneurship as part of your MBA programme?

Obligatory subject/s Personal interest in the subject area

Other (please specify) _____

12 What were your objectives on taking the Entrepreneurship module/s on the MBA? (Please rank **three objectives** that apply in order of importance, 1 = most important, 2 = second in importance, 3 = third in importance)

Intent to start a business

Understanding entrepreneurship

Understanding Intrapreneurship

Obtaining knowledge helpful in starting a business

Achieving a good grade

Other (please specify) _____

13 Were these objectives realised on taking the Entrepreneurship module/s?

Yes No

14 How many entrepreneurship module/s did you study on your MBA programme?

1 Module 2 Modules More than 2

15 Has completing the Entrepreneurship Module/s on the MBA given you a better understanding of Entrepreneurship?

Yes No

Please expand on your answer _____

16 Do you believe studying Entrepreneurship as part of an MBA programme has had an important impact on your subsequent career decision?

Strongly Agree Agree Do not know Disagree Strongly Disagree

17 (a) How significant was the Entrepreneurship course/s on the MBA to your aspiration to be an entrepreneur (or continue entrepreneurial activity if already an entrepreneur)?

Very Significant Significant Fairly Significant Less Significant Not Significant

(b) Please expand on your answer _____

Please Continue to Section C

SECTION C

18 Have you started your own business venture?

Yes No

If yes, please continue to Question 19

If no, please go directly to Section D, Question 30

19 Please indicate the **three** most important reason/s for starting your own business? (In order of importance, 1 = most important, 2 = second in importance, 3 = third in importance).

Experience from previous Employment

Identified Opportunity

Family Business Background and influence

Experience of working with an Entrepreneur

Entrepreneurship Education / Training

Personal Interest / Hobby

Unemployment/Displacement

Other(please specify) _____

- 20 When did you start your current (most recent) business? _____
- 21 Have you started more than one business? Yes No
- If “Yes”, how many businesses have you started? _____
- 22 Please indicate if you started your business/es:
- Before commencing the MBA Programme
- During MBA Programme
- After completing the MBA Programme
- 23 Please indicate the sector in which your business/es operates:
- Agriculture Food Construction Textiles
- Electronics Engineering Other (Please specify)
- _____
- 24 Is your current business/es manufacturing or services related?
- Manufacturing Service Combination
- 25 How many people do you currently employ?
- Less than 10 10 Less than 50 50 Less than 250 250+
- 26 Has your annual sales (over the last 3 years)
- Increased Remained the same Decreased
- 27 Has the size of your workforce (over the last 3 years):
- Increased Remained the same Decreased
- 28 Has your profitability (over the last 3 years)
- Increased Remained the same Decreased
- 29 Is your business currently trading: Regionally Nationally Internationally

Now Please go to SECTION E

SECTION D

30 Are you currently working in an organisation that supports Intrapreneurship? (Intrapreneurship is entrepreneurial behaviour as an employee within an existing organisation)

Yes No

31 (a) Have you been involved in Intrapreneurship in your career to date?

Yes No

(b) If "Yes", **and** if you have studied an Entrepreneurship module/s on the MBA Programme, please indicate the extent to which these module/s were useful in undertaking intrapreneurial activity within an organisation.

Very Useful Fairly Less Irrelevant
useful Useful Useful Useful

Please expand on your answer to Question 31 (b) _____

32 (a) Have you ever had a business idea for a new start-up venture?

Yes No

(b) If "yes", please indicate the **three** most important reason/s for not pursuing this idea. (In order of importance, 1 = most important, 2 = second in importance, 3 = third in importance)

Lack of capital	<input type="checkbox"/>	Lack of Technical Expertise	<input type="checkbox"/>
Lack of Business Expertise	<input type="checkbox"/>	Fear of Failure	<input type="checkbox"/>
Content with Present Career	<input type="checkbox"/>	Other (please specify)	<input type="checkbox"/>

33 Do you intend to start a business in the future?

Highly Probable Some Improbable No Probability
Probable Probability

34 To what extent are you actively seeking out an opportunistic idea for a new enterprise?

To a very large To a large To Some Extent To a very limited Not at
Extent Extent Extent Extent All

SECTION E

35 Do you have any comments or suggestions that may add to this research?

Thank you for the time and effort taken to complete this questionnaire. Your contribution is important and appreciated very much.

Shane Hill,

October 2005.

Appendix B

Qualitative Interview Schedule

MBA Graduates Who Have Taken Entrepreneurship and Who Have
Started a Business (R01-R05)

Personal Background of the Respondent

1. In what year did you complete your MBA? Please indicate your age. Please specify the general area of your pre MBA qualification/s. Have you changed jobs/careers since completing the MBA? What is your current work position? Why did you take the Entrepreneurship module/s?
 - (a) Obligatory Subject
 - (b) Personal Interest
 - (c) Other (please explain)

Did you take more than one Entrepreneurship module on your MBA?

(R01)

- 2 Why did you take Entrepreneurship on your MBA?
3. Was this reason different to your decision to take other modules on the MBA?
4. Was the Entrepreneurship module/s more important to you than other modules?
5. What was your objective/s on taking the Entrepreneurship Module/s on you MBA?
 - (a) Intent to start a business
 - (b) Understanding Entrepreneurship
 - (c) Understanding Intrapreneurship
 - (d) Obtaining knowledge helpful in starting a business
 - (e) Achieving a good grade
 - (f) Other (please explain)
6. Why did you have this objective/s?
7. Were these objectives realised?
8. How were these objectives realised?
9. What aspect/s of the Entrepreneurship course contributed most to this?
10. Did your objectives change over the duration of the course?
11. Do you think your objectives on taking Entrepreneurship were typical to your fellow students?
12. Was the Entrepreneurship module more valuable to you than other modules on the MBA?
13. Do you suspect this was the case with other students on the MBA?
14. On taking the Entrepreneurship module, do you think those students intent on

starting a business had different objectives to those with no such intention?

(R02)

15. Are you satisfied with your career to date? Please explain.
16. Has taking your MBA impacted on you subsequent career satisfaction?
Please expand.
17. Are you now more satisfied with your career than you were prior to taking the MBA? Please expand
18. Has studying Entrepreneurship/starting a business impacted on you subsequent career satisfaction? Please expand.

(R03)

19. Has studying Entrepreneurship had an impact on you subsequent career decisions?
20. Have you changes jobs/career since completing the MBA?
21. To what extent has the Entrepreneurship module/s on the MBA impacted on this?
Please explain.
22. To what extent has the Entrepreneurship module/s on the MBA specifically impacted on your decision to become an entrepreneur? Please explain.
23. Was the Entrepreneurship module on your MBA useful in terms of conceiving your business idea? Please explain.
24. Was the Entrepreneurship module on your MBA useful in terms of planning your business start-up? Please explain.
25. Was the Entrepreneurship module on your MBA useful in terms of running/growing your business venture? Please explain.
26. Do you believe you would have pursued an entrepreneurial career without exposure to Entrepreneurship on the MBA? Please expand.

(R04)

27. Did studying Entrepreneurship have an impact on your decision to become an entrepreneur? Please expand.
28. How important was the Entrepreneurship module/s in this regard?
29. Did you take more than one Entrepreneurship module on your MBA?
30. Do you believe this was significant in your decision to pursue entrepreneurship?

31. When did you start your business/s in relation to MBA completion?
32. Was the Entrepreneurship module/s on your MBA important in this regard?
33. Have you started more than one business?
34. Was the Entrepreneurship module/s on your MBA important in this regard?
35. Do you believe studying Entrepreneurship on an MBA influences graduates propensity to venture? Please expand.

(R05)

36. How has your business performed with regard to the following performance parameters over the last 3 years?
 - Employment levels
 - Annual sales
 - Annual profitability
 - Trading area/s
37. Do you think taking your MBA has contributed to your ventures growth? Please explain
38. Do you think taking Entrepreneurship your MBA has contributed to your ventures growth? Please explain
39. Do you have any further comments that may add to this research?

MBA Graduates Who Have Taken Entrepreneurship and Not Started a Business (R01-R04)

1. In what year did you complete your MBA? Please indicate your age. Please specify the general area of your pre MBA qualification/s. Have you changed jobs/careers since completing the MBA? What is your current work position? Please explain.
Why did you take the Entrepreneurship module/s?
 - (a) Obligatory Subject
 - (b) Personal Interest
 - (c) Other (please explain)

Did you take more than one Entrepreneurship module on your MBA?

(R01)

2. Why did you take Entrepreneurship on your MBA?
3. Was this reason different to your decision to take other modules on the MBA?
4. Was the Entrepreneurship module/s more important to you than other modules?
5. What was your objective/s on taking the Entrepreneurship Module/s on you MBA?
 - (a) Intent to start a business
 - (b) Understanding Entrepreneurship
 - (c) Understanding Intrapreneurship
 - (d) Obtaining knowledge helpful in starting a business
 - (e) Achieving a good grade
 - (f) Other (please explain)
6. Why did you have this objective/s?
7. Were these objectives realised?
8. How were these objectives realised?
9. What aspect/s of the Entrepreneurship course contributed most to this?
10. Did your objectives change over the duration of the course?
11. Do you think your objectives on taking Entrepreneurship were typical to your fellow students?
12. Was the Entrepreneurship module more valuable to you than other modules on the MBA?
13. Do you suspect this was the case with other students on the MBA?
14. On taking the Entrepreneurship module, do you think those students intent on starting a business had different objectives to those with no such intention?

(R02)

15. Are you satisfied with your career to date? Please explain.
16. Has taking your MBA impacted on you subsequent career satisfaction?
Please expand.
17. Are you now more satisfied with your career than you were prior to taking the MBA? Please expand
18. Has studying Entrepreneurship/starting a business impacted on you subsequent career satisfaction? Please expand.

(R03)

19. Has studying Entrepreneurship had an impact on your subsequent career decisions?
20. Have you changed jobs/career since completing the MBA?
21. To what extent has the Entrepreneurship module/s on the MBA impacted on this? Please explain.
22. To what extent has the Entrepreneurship module/s on the MBA specifically impacted on your decision to become an entrepreneur? Please explain.
23. Was the Entrepreneurship module on your MBA useful in terms of conceiving your business idea? Please explain.
24. Was the Entrepreneurship module on your MBA useful in terms of planning your business start-up? Please explain.
25. Was the Entrepreneurship module on your MBA useful in terms of running/growing your business venture? Please explain.
26. Do you believe you would have pursued an entrepreneurial career without exposure to Entrepreneurship on the MBA? Please expand.

(R04)

27. Did studying Entrepreneurship have an impact on your decision to become an entrepreneur? Please expand.
28. How important was the Entrepreneurship module/s in this regard?
29. Did you take more than one Entrepreneurship module on your MBA?
30. Do you believe this was significant in your decision to pursue entrepreneurship?
31. When did you start your business/s in relation to MBA completion?
32. Was the Entrepreneurship module/s on your MBA important in this regard?
33. Have you started more than one business?
34. Was the Entrepreneurship module/s on your MBA important in this regard?
35. Do you believe studying Entrepreneurship on an MBA influences graduates' propensity to venture? Please expand.

MBA Graduates Who Have Not Taken Entrepreneurship and Who Have Started a Business (R02 and R05)

1. In what year did you complete your MBA? Please indicate your age. Please specify the general area of your pre MBA qualification/s. Have you changed jobs/careers since completing the MBA? What is your current work position? Was there an MBA module on your MBA?
If “Yes” Why did you not take it?
When did you start your business/s in relation to MBA completion?
Why did you start your business?
Have you started more than one business?
Would taking an Entrepreneurship module/s on your MBA have been useful?

(R02)

2. Are you satisfied with your career to date? Please explain.
3. Has taking your MBA impacted on you subsequent career satisfaction? Please expand.
4. Are you now more satisfied with your career than you were prior to taking the MBA? Please expand
5. Has starting a business impacted on you subsequent career satisfaction? Please expand.

(R05)

6. How has your business performed with regard to the following performance parameters over the last 3 years?
 - Employment levels
 - Annual sales
 - Annual profitability
 - Trading area/s
7. Do you think taking your MBA has contributed to your ventures growth? Please explain
8. Do you think taking Entrepreneurship your MBA would have contributed to your ventures growth? Please explain
9. Do you have any further comments that may add to this research?

MBA Graduates Who Have Not Taken Entrepreneurship and Who Have
Not Started a Business (R02)

1. In what year did you complete your MBA? Please indicate your age. Please specify the general area of your pre MBA qualification/s. Have you changed jobs/careers since completing the MBA? What is your current work position? Was there an MBA module on your MBA? If "Yes" Why did you not take it?

(R02)

2. Are you satisfied with your career to date? Please explain.
3. Has taking your MBA impacted on you subsequent career satisfaction? Please expand.
4. Are you now more satisfied with your career than you were prior to taking the MBA? Please expand
5. Do you have any further comments that may add to this research?