

**An Exploration of the Relationship Between Air
Connectivity and Foreign Direct Investment in Ireland
by United States Technology Companies**

Stephen Enright

MSc in Management

National College of Ireland

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Abstract

Following the financial and economic collapse of 2008, the Irish economy was able to recover due to a number of factors, including the country's strong export platform and crucially a strong foreign direct investment (FDI) sector. In an Irish context, FDI creates jobs, generates wealth and insulates the country from fluctuating domestic demand. No sector comprising Irish inward investment has been more central than the technology sector, which primarily originates in the United States. If Ireland can continue to attract and secure this investment, the economy can continue to grow and create secure, high-quality employment.

Attracting FDI is a challenging and complex task for any government or state agency. A myriad of factors guide international firms before they decide where to invest. If countries can understand these factors and create an environment where companies want to invest, there will be an increased likelihood of FDI. This research explores the FDI sector in Ireland for technology firms from the United States and examines specifically if international air connectivity from Irish airports is a determining factor for those companies.

This topic has been examined in previous studies using a quantitative approach, but never in Ireland and never using a qualitative technique. The historical and ongoing reliance of FDI in Ireland, plus the country's dependence on air transport, makes the country an attractive location for research. This research was conducted using in-depth interviews with managers in US technology companies with operations in Ireland. By using this technique, it was hoped to uncover the more detailed thought processes of technology firms in how and where they decide to invest. In brief, the research uncovered that air connectivity is an important determinant for technology firms before deciding where to invest. Air connectivity itself was found not to be a prerequisite for firms when investing, however its absence was considered to be a barrier or negative factor for United States technology companies.

Declaration

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Chapter 1 - Introduction

1.1 Introduction

This chapter will begin by giving a background on the research topic, discussing the importance of foreign direct investment (FDI) to Ireland and introducing the concept of air connectivity as a determinant for companies in deciding where to invest. Secondly, a justification will be given for this research, discussing previous studies in the area as well as highlighting any gaps in existing literature, particularly in an Irish context. Thirdly, the research aims and objectives will be outlined as well as how they might contribute to current literature in the field of study. Finally, the structure of this dissertation will be outlined.

1.2 Background on the Research Topic

The recent economic crisis in Ireland has highlighted the country's reliance on FDI. In any economy, FDI can act as a buffer from domestic economic performance and generate investment, employment and growth opportunities (Fuller & Phelps, 2004). As a small open economy, Ireland is reliant on the greater global economy for its success. This openness allows for flows of FDI which benefit both the economy and firms investing in the country. If Ireland can create an attractive and beneficial environment for overseas companies, it may encourage FDI to further grow and expand the economy. Blomström (1991) describes that FDI can have significant secondary benefits for the host country including access to modern technology, productivity gains and improved market competition.

Irish airports and the ability to connect to the world is a vital constituent and driver of the Irish economy. Ireland has three state airports, namely Dublin, Shannon and Cork. Dublin airport is by far the busiest of the three and in 2015 handled 25 million passengers (Dublin Airport, 2016). Dublin airport is also the fifth busiest airport in Europe for route frequency to North America. With new developments in the Irish

aviation sector, including future plans for a new runway in Dublin Airport, and the takeover of Aer Lingus by International Airlines Group (IAG), there are huge opportunities for the introduction and expansion of routes.

This paper will explore the relationship between FDI and air connectivity. The International Civil Aviation Organization (2013) defines air connectivity as “an indicator of a network’s concentration and its ability to move passengers from their origin to their destination seamlessly”. Air connectivity is simply how connected Irish airports are to the world. Specifically, the study will attempt to see if the existence or lack of routes to and from Irish airports has an effect on the introduction or expansion of FDI by United States (US) technology companies.

1.3 Justification for the Research

Air connectivity makes it easier for firms to travel to Ireland, export from Ireland and promotes a “tacit and complex knowledge flow” between countries (Bannò & Redondi, 2014, p355). Ireland’s FDI sector is predominantly composed of firms in the pharmaceutical, medical devices and information technology (IT) industries. This is evidenced by the fact that, despite air transport moving 1% of Irish cargo tonnage, it represents about 35% of the value of all freight (Irish Department of transport, tourism and sport, 2015). Over the last thirty years, the technology sector, more than any other, has transformed Ireland from an industrial and agricultural based economy to a knowledge-based economy and has become a hub for North American technology companies. For this reason, it was decided to focus the research on US technology companies and their role in the Irish FDI sector.

Air connectivity facilitates trade and allows for business travel between Ireland and markets throughout the globe. Both aviation and FDI in the IT sector are not separate, distinct areas of the Irish economy but are interconnected and complement each other. Although there is extensive literature on FDI and the factors affecting it, most studies have focused on more traditional determinants such as

market experience (Buckley & Casson, 1985), host market size (Kobrin, 1979), access to trading blocs (Billington, 1999) and tax rates (Friedman et al., 1992). More recent studies and examination of the topic of FDI have focused on more “additional spatial characteristics” (Monaghan, 2012, p46). These spatial characteristics include transportation and infrastructure. It is these determinants that this research will address, specifically air connectivity as a factor for firms investing in Ireland. A similar quantitative study was undertaken in Italy, but there has been limited research relating specifically to the area of air connectivity. This limited research includes the work of Bel & Fageda (2008) and McCann & Acs (2011) who examined global air interconnectivity and direct air access as factors for multinational enterprises (MNE). No research of this kind has been undertaken in Ireland.

1.4 Research Aim

This research paper will look at air connectivity from two separate viewpoints. Firstly, to establish whether the availability of *direct flights* to the host city or region of a US company and an Irish airport leads to or increases FDI. Secondly, the paper will examine the importance of air connectivity from Irish airports to other cities and how this impacts the commencement or expansion of FDI. To contextualise any findings relating specifically to air connectivity, other factors associated with FDI such as why firms invest overseas as well as how they choose a location are explored. It is hoped by taking a more holistic viewpoint of the investment process that a greater understanding of the specific aims of the research will be revealed. There is a gap in research on this topic in general, and no research of this nature has been conducted in Ireland. If a causal relationship between air connectivity and FDI can be established, the introduction and expansion of air routes to and from Ireland may be influenced. It is hoped by taking a qualitative approach to the research that new themes or motivations relating to FDI may emerge, adding to existing qualitative studies in the area. There will be six research objectives each giving rise to a number of themes or areas of interest.

1.5 Research Objectives

The objectives of this research study are:

1. To investigate the key motivations and challenges for technology companies engaging in FDI.
2. To investigate the location factors influencing technology companies when investing overseas.
3. To investigate the location factors influencing technology companies when investing in Ireland.
4. To investigate the significance of air connectivity between source and host cities to companies when making a location decision regarding FDI.
5. To understand the importance of air connectivity for ongoing operations in Ireland.
6. To investigate the significance of air connectivity between the host city and other markets to companies.

1.6 Dissertation Structure

The dissertation will include five main chapters followed by a reference list and appendices.

Chapter one begins with an introduction to the topic plus an overview of the key concepts covered during the research. A justification for the study will be presented along with the research aim and objectives.

Chapter two provides an analysis of key literature in the areas of FDI and air connectivity. The chapter will outline traditional FDI models and introduce more modern literature which relates to the topic.

Chapter three will outline the research problem as well as the research objectives. In attempting to answer these objectives, the selected methodologies will be

outlined. Within each section, the choices the researcher made will be discussed as well as the relative advantages of each methodology. This chapter will also describe any ethical issues and limitations to the research. Finally, alternative research considerations are discussed.

Chapter four details the research findings as they relate to the research objectives. These findings are then individually discussed in relation to the relevant literature, theoretical frameworks and previous studies which were explored in chapter two. Relationships between the theory and findings are highlighted, and any literature gaps revealed from the interview data.

Chapter five presents the conclusions resulting from the research findings. A number of recommendations are presented including areas for potential future research.

Chapter 2 - Literature Review

2.1 Introduction

Saunders et al. (2007, p57) emphasise that a literature review provides the foundation on which research is built. Its goal is to give the researcher a clear understanding of any previous research which was carried out as well as revealing any trends in the subject area which have surfaced. In essence, its aim is to give the researcher an understanding of what others “have already found out”.

Bryman & Bell (2007) discuss that the literature review provides the basis upon which a researcher justifies their research question. It can also provide valuable insights into how research should be carried out based on the experiences of previous researchers. They further assert that the review is a means to demonstrate the competence of the researcher in the chosen field and display “credibility” to readers. The literature review will attempt to critically examine existing academic literature in the field of air connectivity and FDI.

2.2 Introduction to Literature

As discussed, the research will attempt to explore the relationship between FDI and air routes in and out of Ireland. These air routes in and out of Ireland mainly focus on Dublin which is by far the busiest airport in the country. FDI is a critical feature of the Irish economy and creates jobs, encourages innovation, generates wealth and increases productivity (Dunning & Lundan, 2008). In understanding the research question, it is necessary to understand FDI from both the perspective of the firm and the country in question. Decisions to internationalise come down to a number of factors. If a country can understand the factors under its control, they can set about encouraging FDI. Francis et al. (2007, p566) note the decision to internationalise or begin FDI for a firm is a difficult one and that they face a “multitude of uncertainties”.

The complexities of these decisions make it even more important to understand what motivates them.

The academic review is broken down into four sections which starts by discussing why firms begin FDI. This decision to internationalise is an important area as, if it is understood why firms invest, countries like Ireland can set about creating the domestic factors that attract firms to invest. The second topic that will be reviewed are the actual determinants that influence the location decision for a company engaging in FDI. Again, this is an area that countries and state bodies must understand to attract and retain inflows of FDI. The third section will narrow the focus of the review to look specifically at air connectivity as a factor in the location decision process. The fourth section will examine the importance of FDI in an Irish context, focusing on the significance of Ireland as an island nation and its reliance on air transport as a means of connectivity within the globalised economy.

2.3 Why Firms Engage in Foreign Direct Investment?

FDI is defined as “establishing a new company or branch of a foreign company by a foreign investor or share acquisitions of a company established in a host country” (Eryigit, 2012, p71). In an increasingly globalised world, firms endeavour to gain competitive advantage, maximise profits and ultimately grow their business (Porter, 1990). In achieving these goals, MNEs will invest outside their home country and seek business opportunities in other countries. Moosa (2002, p1) discusses that FDI involves “the transfer of financial capital, technology and other skills such as managerial, marketing and accounting skills”.

2.3.1 The Internationalisation Process

FDI is the final step in how a firm internationalises and signifies the highest level of investment and commitment in another country (Johanson & Wiedersheim-Paul,

1975). The authors developed the establishment chain during the Uppsala studies in an attempt to assess how companies enter foreign markets. These steps for a company begin with intermittent exports, followed by exports via agents (in the foreign market), then foreign sales via a subsidiary and lastly FDI in the overseas market. Each of these steps signifies a further commitment and involvement in an overseas market. The Uppsala studies found that a company would only move onto the next phase in the establishment chain when they have acquired enough experiential knowledge on the new market through successful completion of the previous step.

2.3.2 Motivations for Foreign Direct Investment

In understanding the process of how firms make decisions regarding FDI, it is important to discover what motivates them. Once there is an understanding of the motivations for FDI, the factors leading to FDI can be addressed. Faeth (2009) discusses how FDI can help a firm take advantage of a global marketplace. Traditionally FDI was seen as a means for a firm to make use of assets overseas (Hymer, 1976). However, in an ever increasingly connected world, Gilmore et al. (2003) contend that FDI allows a firm to enter domestic markets, gain access to valuable raw materials, diversify its investments and gain production efficiencies. FDI can reduce transport costs versus traditional exporting (Greenaway & Kneller, 2007) and can overcome trade barriers (Faeth, 2009). While Casey (2011) agrees that cost efficiency is a motivation for companies engaging in FDI, he argues that there are other non-financial motivations such as access to skilled labour and the availability of an educated workforce.

2.3.3 Benefits of Foreign Direct Investment

Greenaway & Kneller (2007) discuss that as a by-product of engaging in production overseas or FDI, firms are more efficient and more productive. Expanded market

opportunities can also allow a firm to “tap selectively” into other nation’s sources of competitive advantage (Porter, 1990). Gilmore et al. (2003) expand on this research by revealing that firms can use FDI as a means to gain access to other countries in an area or trading bloc, such as the European Union. FDI also encourages innovation and consequently improves product quality (Weresa, 2001). Lee & Rugman (2008) argue that a firm can reach an optimal level of overseas operations when it can combine their own firm-specific advantages (FSA) with the country specific advantages (CSA) of their source country. This expanded framework overcomes some of the limitations of Porter’s “diamond”, relating to national sources of competitive advantage.

2.3.4 Risks of Foreign Direct Investment

FDI, however, is not always a risk-free endeavour for firms. Hymer (1976), in his well-known paper on the topic, introduced the concept of the “liability of foreignness”, whereby firms enter new markets that are less profitable than their home market. This lower profitability is driven by increased costs, new market consumer attitudes and physical distance from the rest of the organisation. To overcome the risk of “foreignness”, firms will first engage in similar markets as a learning exercise with the ultimate aim of reducing transactional costs in the host country. This attempt to overcome perceived risk in international expansion is evidence of the concept of psychic distance as espoused by Beckerman (1956). Psychic distance is the degree to which the flow of information between markets is prevented or impeded.

Jensen (2008) argues that financial risks are more relevant in countries of political and economic instability. He argues that these governments enact policies and laws that have a negative influence on MNE’s profitability and thus on inflows of FDI. This notion of political risk is a significant factor for firms and thus they are less likely to invest in a country or region which is seen to be politically unstable. The author discusses that democratically elected governments can provide stability for investors through political and economic policies. However, the author also highlights Russia,

Bolivia and Venezuela, three countries which have democratic elections but are still seen as politically unstable and therefore struggle to attract inward investment.

Brada et al. (2006, p657) reaffirms Jensen's (2008, p657) position but examines investment more specifically in countries or regions which have suffered more severe upheavals, such as civil war or violent political volatility. While examining inward investment in these countries, it is argued that FDI is a "forward-looking activity" in which a firm will assess future profitability based on the confidence of a return on investment. Therefore, the FDI decision involves a detailed examination of a country's present and future political stability. Instability can affect profitability in two ways, firstly through reduced sales or impaired exports and secondly, through currency risk.

2.4 Foreign Direct Investment Location Decision

Buckley (2004), in analysing firm location and ownership strategies, identified two critical decisions that the company must make. Firstly, where should their activities be located and secondly, how should these activities be controlled? Buckley et al.'s (2007) studies found that the location decision for a firm is a process undertaken by rational managers who make a list of possibilities and narrow down their choices using a combination of factors from the macro and micro level. The study did find however, that the final location decision can be influenced by managerial bias, which can be known or unknown. This "highly idiosyncratic" process highlights the complexity of the decision of where a company should invest.

In addressing the more specific factors that influence decisions regarding FDI and host country, empirical studies have revealed a number of causes. During these studies, links were investigated between these factors and an MNE's FDI decision. Monaghan (2012, p46) argues that firms are no longer solely concerned with economic factors such as "entry mode to markets, proximity to market and low

transaction costs”, but have expanded to include additional factors such as transportation and infrastructure.

2.4.1 Factors Affecting Foreign Direct Investment

There are a number of broad areas which studies have shown influence the location for FDI. These areas include knowledge and experience of the foreign market, size and growth of the foreign market, government emphasis on FDI and financial incentives, cultural closeness and finally costs of transport, materials and labour (Gilmore et al., 2003, p199). That paper noted that “while transport and raw materials are undoubtedly key cost factors, it is the cost of labour that has been explored most extensively in the FDI literature”. Early FDI studies revealed that factors such as market size, growth potential and market share were the most important factors for firms in deciding where to invest. Barrell & Pain (1996) suggest that the size of the host market is extremely significant for firms investing in a country. However, in the case of Ireland and other small economies, other factors are arguably more important, such as availability of labour and financial incentives by governments (Caves, 1996).

Bevan & Estrin (2004) in analysing FDI location decisions, mainly in Western Europe, discovered a number of determinants. These determinants included the GDP of both the host and source countries, labour costs and the distance between these countries. There is some agreement with their findings relating to GDP and labour costs (Pileti, 2009), and also the distance between source and host countries (Mateev et al., 2008). Bos & Lear (2004) found that good infrastructure in the host country was a positive influence on inward investment. Mateev et al. (2008) disagreed and found that infrastructure was not an important determinant relating to FDI.

2.4.2 IT Sector Specific Factors

Duranton & Puga (2002) argue that advancements in both transport and telecommunication technologies make it easier for firms to separate production facilities from both overseas headquarters and management functions. This might be of particular interest in an Irish context due to the unique make-up of the FDI sector. The FDI determinants for all sectors are not the same. The infrastructure and labour force required varies from industry to industry. Host nation factors such as IT infrastructure and the level of a skilled workforce are seen as critical factors in the *high-tech* sector (Sethi et al., 2009). Serapio et al. (2000) contend that overseas R&D facilities in technology sectors can complement their existing domestic resources and deliver globally for firms. Collins & Grimes (2011), while examining the closure of Dell's operations in Ireland, note that even if a number of determining factors are met, high costs, most notably labour costs, may deter initial investment or in the case of Dell in Ireland, lead to the withdrawal of investment. A prospective firm's location decision is therefore influenced by a number of factors or determinants but also crucially cost.

2.5 Air Connectivity & The Location Decision

2.5.1 Air Connectivity as a Location Factor

Air connectivity, or how connected a host country or region is to the rest of the world, is shown to be an aspect of a firm's decision whether to invest or not invest (McCann & Acs, 2011). There have been limited studies into the link between air connectivity and FDI, with research focusing on labour and other cost factors. Some empirical studies such as Xu et al. (2009) find that a strong infrastructure network, especially in aviation networks, can facilitate FDI inflows. Arauzo-Carod et al. (2009, p703) maintain that this is not always the case and that the availability of good transport links is more important for different sectors depending on their "accessibility requirements" and level of technology or demand in the industry.

The cost of transport, ease of transport access for staff and international connectivity influence an MNE's decision to begin FDI. Bannò & Redondi (2014, p357) discuss that in Italy the establishment of new routes between Italian and foreign regions actively encouraged FDI and "should increase the likelihood of FDI exchange". They also note that "only few recent studies have analysed the linkage between air traffic and the degree of internationalization".

Strauss-Kahn & Vives (2006, p35), while studying how US MNEs choose a location, contend that production firms are not as likely to invest in distant markets as "manufacturing headquarters have a greater need to locate close to their plants". This may be a major factor for Ireland due to its geographic position. If a firm is deciding where to set up a headquarters, the interconnectivity and accessibility of air routes becomes more important (Bel & Fageda, 2008). Ireland as an island nation relies heavily on air transport and so interconnectivity is of vital importance for the country's economic development. Air connectivity increases accessibility and freedom of movement between Ireland and overseas markets. However, Cuervo-Cazurra (2008) in the analysing of distance and transport costs, reports that there is a negative relationship between distance and FDI.

2.5.2 Air Travel for Business

For business travellers around the globe air travel facilitates personal interaction, the exchange of information and face-to-face communication (Wickham & Vecchi, 2008, p694). The authors argue that more accessible and cheaper air travel allows firms to create a "temporary proximity" with business contacts in geographically dispersed locations. Leamer & Storper (2001) argue that there are certain business interactions that require a face-to-face "handshake" to ensure successful completion, whereas other business dealings require only a "conversation" which can be achieved through technology. According to the authors these two types of interaction are distinct and achieve different outcomes. Mokhtarian (2003) would suggest however that these interactions complement each other and combined can secure business

relationships. This requirement for personal contact between people in business on a global stage can be achieved through air travel, which remains a vital facilitator of global commerce. This view is supported by Bel & Fageda (2008) who suggest that certain information must be transmitted face-to-face, necessitating travel and personal contact.

2.6 Importance of Foreign Direct Investment to Ireland

FDI has been crucial to the Irish economy and was a key cornerstone of Ireland's economic growth in the 1990s. Ruane & Gorg (1996) in analysing the Irish economy note that there are two key aspects to it, namely, the significance of FDI and the high export volumes by foreign-owned companies from Ireland. They further note that traditionally the benefits of FDI were measured primarily using employment figures, but that there has now been a move towards more robust measurements such as the quality of employment and corporate tax yield. This notion of quality of employment is an indication of Ireland's emphasis on high-paid and skilled jobs in FDI companies.

O'Gorman & Cooney (2007, p18) argue that Ireland should attempt to attract FDI not for the obvious goal of creating employment but also for the added benefit of increasing the "value-added and knowledge base of Irish industry". Ruane & Gorg (1996) also discuss the importance of the *high-tech* sector in the Irish context. This sector contributes significantly to Irish employment, particularly by US multinationals. This inward investment also has the additional benefit of spilling over to indigenous industry, promoting knowledge and job creation. Buckley & Ruane (2006) note that inflows of FDI can assist countries through inflows of capital, technology and managerial know-how. Blomstrorn (1991) reinforces this view, discussing that these inflows of FDI provide a host nation with resources which would not normally be available.

2.6.1 “Weightless Goods” Industries

Buckley & Ruane (2006, p1611) discuss that Ireland has “consistently promoted export platform inward investment “. This inward investment, especially since the 1990s, has been focused on the *high-tech* sector with a large number of MNEs making their home in Ireland. The authors do note that Ireland is an anomaly in the levels of FDI it attracts. It is further asserted that Ireland’s island status and dependence on air transport were not major factors for MNEs exporting from Ireland due to the *high-tech* “weightless product” which is transported.

2.6.2 Future Development of Foreign Direct Investment in Ireland

IDA Ireland’s strategic paper ‘Winning: Foreign Direct Investment 2015-2019’ has laid out a plan for Ireland’s FDI sector for the coming years. That paper maintains that, to continue its success in attracting inward investment, Ireland must develop and expand in existing and new sectors, and replace areas which are in decline (IDA Ireland, 2015, p15). The paper also argues that continued investment is needed in the areas of “skills, property and infrastructure as well as competitiveness” if Ireland is to attract the right kind of sustainable inward investment. Therefore, Ireland should continue to attract *high-tech* companies where the associated cost of exports is mitigated

2.7 Conclusion

The literature review has attempted to discuss the main areas that relate to FDI and its relationship with air connectivity. As highlighted, there are gaps in existing research, especially in an Irish context. Both contemporary literature and established theories on FDI agree on its importance to countries. More recent studies have shown that in an ever increasingly globalised market, overseas investment is becoming more important and is vital for international competitiveness and survival.

FDI will, therefore, become more important both to firms but also to the countries in which they invest. If countries wish to attract FDI, they must understand what influences MNEs in both their investment and location decisions. There are a numbers of studies which investigate the factors that affect a company's decision to choose one country over another or one region over another.

The importance of both FDI and air connectivity is one of these factors and especially in Ireland merits further research. In exploring the relationship between FDI and air connectivity in Ireland, primary research would need to be undertaken. This primary research would involve interviews with existing MNEs in Ireland and attempt to understand what factors influenced them when they made their investment decision. This study will try to address the existing gap in research on this topic in Ireland.

Chapter 3 - Research Methodology

3.1 Introduction

Saunders et al. (2007) describe a research methodology as a theoretical framework detailing how research should be carried out. A clear idea of this methodology can allow the researcher to make informed choices throughout the research process. Bryman & Bell (2007) note that any business or management related research cannot exist in a vacuum and should be related to real world events and phenomena. They further note that there are overarching intellectual traditions or philosophies which influence how research should be carried out.

The main objective of this study is to investigate the relationship between foreign direct investment and air connectivity. This chapter will describe the research choices made by the researcher and attempt to justify the selection of different methods. It will begin by firstly defining and outlining the research problem and research objectives. Secondly, based on Saunders et al.'s (2007) "*research onion*", it will defend the chosen research philosophy, approach, strategy and choice. Next, the techniques and procedures employed will be explored. It is hoped by *peeling off* the layers of the research onion one by one the decisions and choices made by the researcher at each stage in the process will be revealed. Finally, any ethical considerations and limitations to the research will be addressed, followed by any alternative research approaches that were considered.

3.2 Research Problem

Creswell (2014) discusses that the research problem or research question is the issue or topic which motivates or necessitates study. The author further notes that there can be multiple sources for a research problem, and in many instances, these sources are driven by the own views or experiences of the researcher. Gilner et al. (2009) highlight that a well-founded research problem may expose a gap in existing

literature or test an existing theory. The authors also argue that the research problem should be clearly and unambiguously defined. This definition should be narrow, focused and precise. In addressing the research problem, the research question is detailed as:

“Does air connectivity between Irish airports and foreign airports impact the likelihood or level of foreign direct investment by US companies in the technology sector?”

3.2.1 Research Objectives

1. To investigate the key motivations and challenges for technology companies engaging in FDI.
2. To investigate the location factors influencing technology companies when investing overseas.
3. To investigate the location factors influencing technology companies when investing in Ireland.
4. To investigate the significance of air connectivity between source and host cities to companies when making a location decision regarding FDI.
5. To understand the importance of air connectivity for ongoing operations in Ireland.
6. To investigate the significance of air connectivity between the host city and other markets to companies.

3.3 Proposed Methodology and its Structure

In this section, using Saunders et al.'s (2007) research onion as a foundation, each choice in the research process will be identified and justification offered for the preferred methodology. In discussing each methodology, the advantages and disadvantages of each will be highlighted and critically assessed in the light of previous studies and existing literature. The type of data collected and the methods employed to analyse this data will be outlined. The limitations of each chosen methodology will also be discussed. Each section below corresponds to a layer of the research onion.

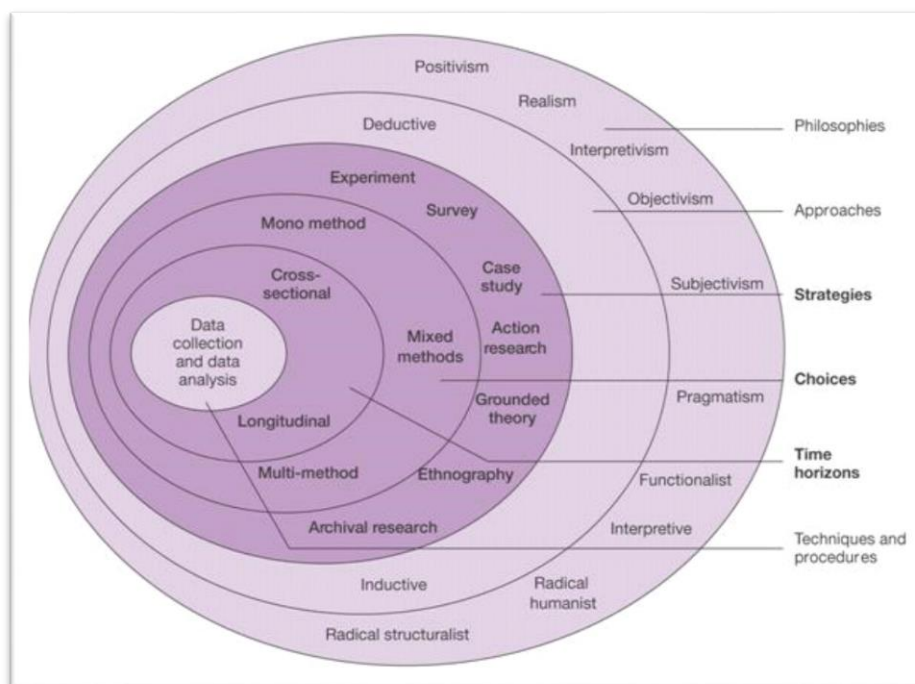


Figure 1: The Research Onion (Saunders et al., 2007)

3.3.1 Research Philosophy

Saunders et al. (2007) discuss that research philosophy is concerned with how knowledge is developed and the nature of this developed knowledge. It is further

noted that the research philosophy adopted by a researcher reflects their own set of values and beliefs and expresses how they see the world around them. Therefore, the way a researcher views knowledge and information around them dictates how they believe research should be carried out.

3.3.1.1 Ontology, Epistemology and Axiology

Saunders et al. (2007) identify three major methods in thinking about research or more specifically the adopted research philosophy. These three methods are ontology, epistemology and axiology. These three branches combine to shape the research philosophy adopted by the researcher.

Ontology deals with the nature of reality (Saunders et al., 2007), it is the “study of being” (Blaikie, 1993). It concerns what the researcher believes reality to be and where it exists. This perception of reality is guided by the researcher’s belief of how the world operates. How the researcher views the nature of reality gives rise to two different positions, namely, objectivism and subjectivism, (Saunders et al., 2007). Bryman & Bell (2007) discuss that these two positions indicate whether, in the case of objectivism, the researcher believes entities are separate and disassociated from social actors or with subjectivism, that social phenomena are created and influenced by the actions of these social actors.

Epistemology concerns what is acceptable knowledge in the field of study (Saunders et al., 2007). A core question in this area is whether the social world can be explored and researched in the same way as the natural sciences. How the researcher feels about this core questions will dictate their epistemological outlook in conducting their study. Saunders et al. (2007) discuss that this outlook gives rise to two different researchers, namely the ‘resources’ researcher and the ‘feelings’ researcher. The former believes that reality is defined by objects that are ‘real’, objects that can be counted, enumerated and defined. The latter researcher believes reality is

concerned with people's emotions, attitudes and beliefs. The 'resources' researcher would be seen to be adopting a positivist position, whereas the 'feelings' researcher would be seen to be adopting an interpretivist philosophy.

Axiology deals with the role the values of the researcher play while conducting research. Saunders et al. (2007) emphasise the importance of the researcher's personal values when producing a credible piece of research. The authors further highlight that the researcher's values will be revealed at all stages throughout the research process. These values are demonstrated in the choices and decisions that are made and methodologies which are selected. A rationale for the decisions that are made and ethical considerations are discussed throughout this section and reflect the researcher's beliefs and views regarding values and the production of a credible piece of research.

3.3.1.2 Selection of Interpretivism

Business decisions are made by people. Guided by this, the research will attempt to understand the role people have in deciding where to engage in FDI and the importance of air connectivity in that decision. The researcher identifies most closely with the 'feelings' researcher and believes people and their decisions are at the heart of the world around us. The researcher also believes that social phenomena are created and influenced by the actions of these people.

As such, an interpretivist philosophy seemed to be the most appropriate. Interpretivism is a subjectivist epistemology which reflects the researcher's views, values and beliefs. Saunders et al. (2007, p106) contend that interpretivism allows the researcher to "understand the differences between humans in our role as social actors". Bryman & Bell (2007) note that the study of the social world requires a different set of procedures to the study of the natural sciences. This research philosophy emphasises the importance of people in the decisions that are made

around us. An interpretivist philosophy assisted with the understanding of these business decisions and the relationship between air connectivity and FDI.

3.3.2 Research Approach

Saunders et al. (2007) discuss that a research approach can either be deductive or inductive. A deductive approach begins with the development of a theory and hypotheses. The research is then designed to test these hypotheses. An inductive approach starts with the collection of data and the development of a theory based on this collected data. The authors further note that a deductive approach is more closely related to the philosophy of positivism and induction to interpretivism. Bryman & Bell (2007) discuss that inductive theory involves generating inferences out of observations of the world around us.

3.3.2.1 *Selection of an Inductive Approach*

An inductive approach reveals “the way in which humans interpret their social world” (Saunders et al., 2007, p118). FDI is primarily a decision made by people; people make these decisions based on their own cultures, motivations, and interpretations of the world. An inductive approach allows research to occur in the area where these events occur, in the case of this investigation in US technology companies and organisations. An inductive approach, therefore, seemed most appropriate to understand why people make decisions and specifically what influences them to make these decisions. Saunders et al. (2007, p119) however argue that there may not be “rigid divisions” between inductive and deductive approaches and that it may be possible in some cases to combine approaches.

Access to a broad cross-section may prove difficult, therefore, an inductive approach which favours a smaller sample is preferred (Saunders et al., 2007). Finally, a deductive approach is seen by some as being overly rigid and does not allow for different explanations or descriptions of observed phenomena. Therefore, again in the case of this research, an inductive approach would allow for more scope for an in-depth exploration of the topic.

3.3.3 Research Strategy

A research strategy is the first step in the actual research design process. It is how a research question is turned into a research project (Robson, 2002). Saunders et al. (2007) reveal that the nature of the study can either be exploratory, descriptive or explanatory. The authors discuss that an exploratory study can allow the researcher to gain an insight into what is going on in a particular area and to gain insights into existing phenomena. A descriptive study is explained as giving a clearer picture of already known phenomena and can be used to build on an exploratory study. An explanatory study is described as examining the causal relationship between pre-determined variables.

3.3.3.1 Selection of an Exploratory Study

Saunders et al. (2007) discuss that the most important aspect of a research strategy is whether it can answer the research question and meet the researcher's objectives. In looking at all three types of studies, an exploratory study was determined to have been the most appropriate and would most closely align itself with the objectives of the research, as well as supporting the research philosophy and research approach.

3.3.4 Research Choice

The terms quantitative and qualitative are used to distinguish between the data collection and analysis techniques used in research (Saunders et al., 2007). Whereas quantitative research deals with the collection of numerical data (Bryman & Bell, 2007), qualitative research deals with meaning expressed through words (Saunders et al., 2007). Robson (2002) contends that qualitative data gives an opportunity to examine an area or subject in a more real world way. When conducting research one or both of these techniques may be used.

A multi-method or mixed-method approach offers advantages over a mono-method approach and is now seen as not being “encumbered by epistemological and ontological baggage” (Bryman & Bell, 2007, p657). Bryman & Bell (2007) do note however that the adopted research choice must be appropriate to the research question and argue that collecting extra data for no added benefit is wasteful during the research process. The authors also maintain that the researcher must take into account finite resources and utilise these resources in the most efficient manner.

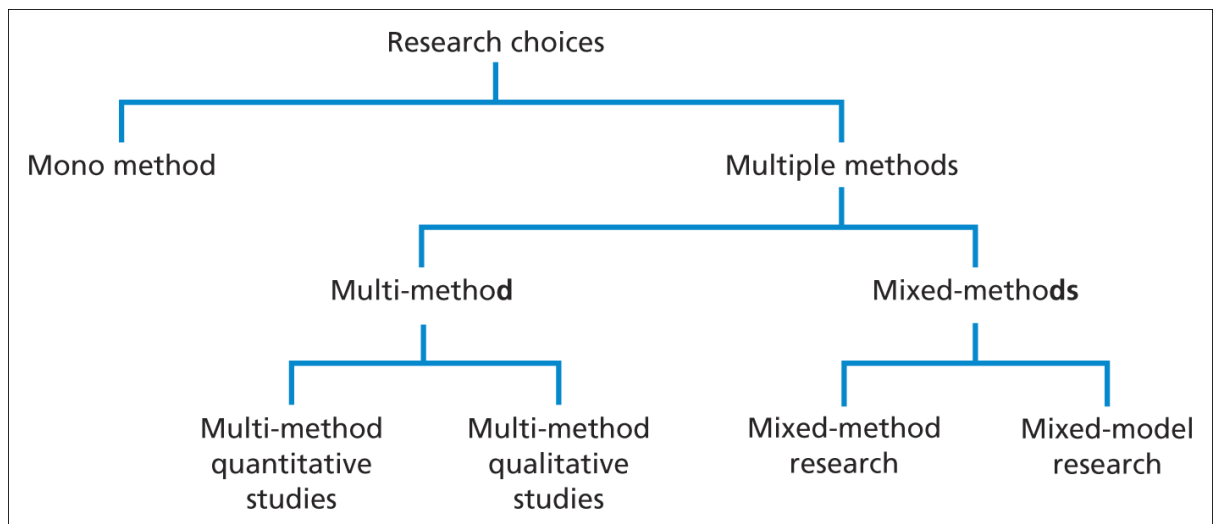


Figure 2: Research Choices (Saunders et al., 2007)

3.3.4.1 *Selection of a Qualitative Technique*

Korez-Vide et al. (2014, p75) used a qualitative research approach in assessing FDI motivations for German and Austrian companies in South America. They note, when researching the decision-making process, a qualitative approach allowed them to take into “account their subjective motives for selecting a business location”. It is also noted that a qualitative research approach allowed the study to take a more holistic approach in addressing the research question. It is further argued that a quantitative research approach may have missed out on valuable insights into the interaction of social, economic and geographic variables.

De Villiers (2005) discusses that a qualitative approach is a more suitable fit when an interpretivist philosophy is adopted using an exploratory study. In keeping with the researcher’s adopted research philosophy, approach and strategy, as well as previous studies and the best use of research resources, a mono method approach using qualitative research was employed. The researcher felt that, to gain an insight into the business decisions made in the area of FDI, a qualitative approach would elicit more valuable insights. It was believed this approach provided a more in-depth understanding of the motivations of the decision makers involved.

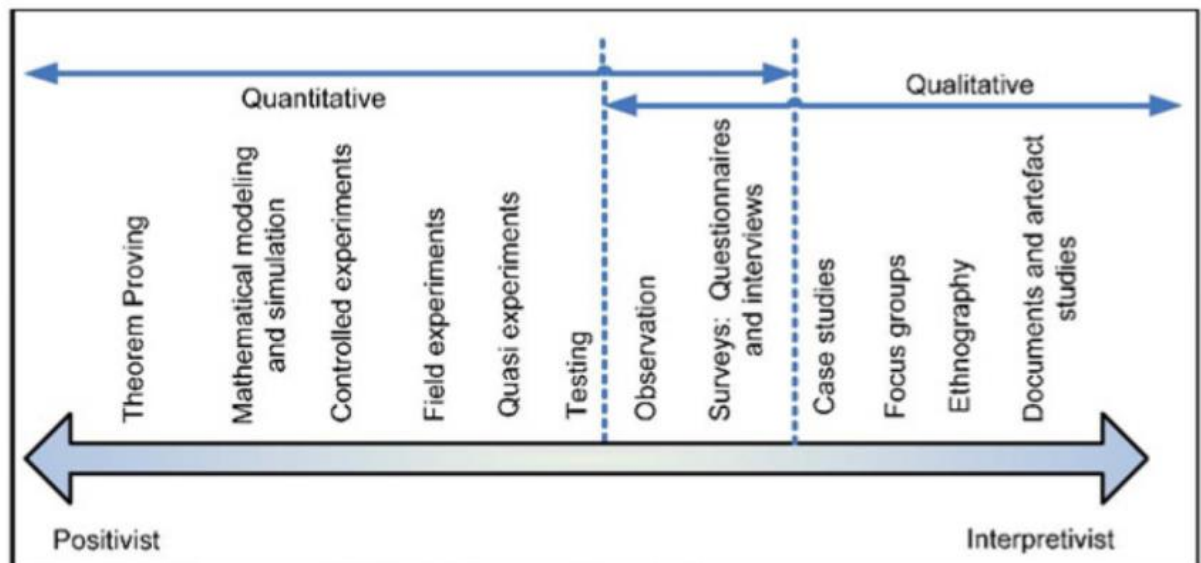


Figure 3: Research Methods/Strategies (De Villiers, 2005)

3.3.5 Data Collection

Saunders et al. (2007) describe two different types of data collection, namely primary and secondary data. Primary data is described as the collection of new information by the researcher through a variety of techniques. Secondary data collection involves the reanalysis of existing data which has been collected for some other purpose. Strauss & Corbin (1990, p16) contend that “data collection, analysis, and theory should stand in reciprocal relationship with each other”. Therefore, the method in which the data is collected should support the manner in which it is analysed. The authors further note that the method of data collection is how the researcher realises their research project and begins to put theory into practice.

3.3.5.1 Selection of Semi-Structured Interviews

The research was conducted using semi-structured interviews. These semi-structured interviews have been carried out with a number of managers in US technology firms based in Ireland. Semi-structured interviews are non-standardised and are also referred to as qualitative research interviews. In these interviews, the researcher will have a list of themes and topics to be covered (Saunders et al., 2007). In this type of interview, the respondent has certain leeway on how they wish to answer the question and there is more flexibility in its direction (Bryman & Bell, 2007). These types of interviews should be open-ended (Patton, 2002) and should encourage details of the participant's experiences in a conversational manner (Whitely, 1982). Saunders et al. (2007) espouse that managers are more likely to participate in an interview, rather than a survey. The authors also argue that subjects are more likely to give information in a one-to-one interview environment, where the issue of trust may be addressed and reassurances offered.

In Korez-Vide et al.'s (2014) study into FDI, semi-structured interviews were employed. The interviews followed a predesigned format but also allowed scope for new ideas or insights to be contributed by interviewees. Semi-structured interviews will have a list of topics for discussion but some questions can be changed or left out depending on the organisational context (Saunders et al., 2007). In any research that has an exploratory element to it, as this research did, a non-standardised, qualitative interview technique will most likely be used (Blumberg et al., 2011). A non-standardised interview can also allow the researcher to gain greater insight into the decisions an interviewee has taken (Saunders et al., 2007). A semi-structured interview was also in keeping with the research philosophy of interpretivism.

Reliability, Interviewer Bias and Validity

There are certain disadvantages to this type of interview technique. These include reliability, interviewer bias and validity (Saunders et al., 2007). Reliability concerns the lack of standardisation in the interview and whether a different researcher in the same setting would have received the same information. Interviewer bias relates to the manner in which a potential interviewer asks questions or their non-verbal behaviour. These factors can influence the way a respondent answers a question. Kumar (2005) argues that the actual quality of the data produced can be affected by the interviewer's abilities and experience.

Validity may be an issue as a small number of interviews may not represent the entire population in question. Gilmore et al. (2003) note that during their research into patterns of FDI in Northern Ireland and Bahrain, using one person in any organisation is a weakness of the interview technique. However, this was mitigated by ensuring that the interviewee was a key decision maker and had access to information in the area concerned. This was a factor which was considered when selecting prospective interviewees for this research.

The use of semi-structured interviews also presents other challenges for the researcher. Saunders et al. (2007) discuss that it is a time-consuming technique during both the interview process itself and later, during transcription and analysis. This time element means that a large sample generally cannot be used (Fontana & Frey, 1994).

3.3.5.2 Interview Structure

As described above, the interviews were semi-structured and followed an interview guide. An interview guide is described as a list of questions on specific topics to be

covered (Bryman & Bell, 2007). During these interviews, the interviewer still has flexibility and the interviewee has leeway in how they answer each question. The authors note that the interviewer is free to stray from the interview guide as new topics or subjects are uncovered. The interviews were audio recorded and once the interview was complete they were uploaded to secure password-protected cloud storage for later transcription. Once the files were uploaded they were deleted off the recording device.

The researcher attempted to use open and probing questions during the interview (Saunders et al., 2007) to try to uncover and explore the topic. It is noted that the use of open questions can help to avoid bias and allow the interviewee to answer more freely. All the interviews were conducted face-to-face in the interviewee's place of business and at a time that was most convenient to the respondent. At all times during the interview, the researcher was conscious of the ethical considerations which are discussed further in section 3.4.

3.3.5.3 Research Population and Sampling

Saunders et al. (2007) discuss that a sample allows for generalisations to be made about a population. This population is the set of all cases in which a sample is taken. In the case of this research, the population is US technology companies with operations in Ireland. The authors further note that the sampling technique used can either be probability sampling or non-probability sampling. With probability sampling, the chance of being selected or sampled from a population is known and equal. With non-probability sampling, the probability of a case being selected is unknown and cannot answer research objectives which require statistical inferences about the population. It is possible to generalise using this technique but not in a statistical way.

In many cases of business research, it may not be possible to select all cases within a population randomly so a non-probability sampling technique may be used

(Saunders et al., 2007). The authors further note that in the case of business and management investigation, the research strategy may necessitate a non-probability technique. This technique was adopted during this research process due to access to and availability of potential interviewees. However, these limited interviews still generated “information-rich” material and allowed for exploration of the research question.

For this research, convenience sampling was used which is a technique used within the non-probability method. Using this method, subjects are selected that are most convenient for the researcher. These subjects are more accessible to the researcher than others and provide a quicker generation of data (Bryman & Bell, 2007). Convenience sampling however may be subject to bias and outside influences which the researcher cannot control (Saunders et al., 2007). In some cases, the sample may not be representative of the population, meaning that the results may be somewhat flawed. Bryman & Bell (2007, p198) discuss in these cases convenience sampling is “acceptable but not ideal” but in many instances can offer useful data. They also note that convenience samples are very common in business research and are in fact more prominent than many probability sampling techniques.

The sample used was generated by contacting companies on the IDA Ireland’s list of US technology firms with operations in Ireland. In some cases, the researcher used personal contacts within specific companies to follow up on requests for interview.

3.3.5.4 *Analysing Qualitative Data*

When analysing qualitative data it is necessary to understand the differences between qualitative and quantitative data. Understanding this can allow the researcher to interpret the data in a more meaningful way (Saunders et al., 2007). Qualitative data is described as being richer or more thorough, unlike narrow and precise quantitative data (Robson, 2002). This richer data needs to be analysed in a

different way and can cause difficulties for the researcher due to its “non-standardised and complex nature” (Saunders et al., 2007, p474).

To allow for data analysis, the semi-structured interviews were audio-recorded using a recording device and manually transcribed using the computer program ‘*oTranscribe*’. Saunders et al. (2007) describe that creating a full audio recording is a means to control bias and produce accurate data. They further argue that recording the interview allows the interviewer to engage more meaningfully with the interviewee and encourages active listening and the interpretation of body language. Bryman & Bell (2007, p489) reveal that the qualitative researcher is not just interested in “what people say but in the way that they say it”. The transcription of these audio files, described as “a written account using the actual words”, allows for a more detailed subsequent analysis of the interview but must be linked to any other contextual information associated with the interview.

Saunders et al. (2007) describe six different approaches for the inductive analysis of qualitative data. These are listed as data display and analysis, template analysis, analytic induction, grounded theory, discourse analysis and finally narrative analysis. For this research a template analysis was employed. Saunders et al. (2007) describe this method as an inductive approach but with a deductive element, insofar as codes or themes may be predetermined and are then added, amended or removed as data is added or analysed. In the case of this research, in keeping with this method, a number of themes were derived from existing literature and theory and revised accordingly. The research objectives were associated with these predetermined codes and revised and updated during the process as per this method.

King (2004) notes that template analysis is different to grounded theory because it allows for predetermined codes. Grounded theory is more closely aligned with a purely inductive approach and does not employ any deductive element, unlike template analysis. This inductive approach with a deductive element supports Saunders et al. (2007) who argue that in some cases approaches may be combined. The author also notes that template analysis is less structured than grounded theory and allows for more flexibility and adaptability to address the project’s research

problem. Template analysis involves the coding and analysis of data to explore themes and associations. Codes can be organised hierarchically and grouped together but can be updated as a part of the qualitative analysis process. Waring & Wainwright (2008, p87) agree that template analysis “starts with some predefined codes intended to help guide analysis” and can be used effectively in the analysis of semi-structures interviews.

3.4 Ethical Issues

At all times the researcher ensured that the ethical guidelines laid out by the National College of Ireland were adhered to. All participants were initially sent a cover letter and then a consent form detailing the research procedure, which are included in the appendices. Saunders et al. (2007, p183) discuss that a consent form may be used when interviewing individuals as a means to ensure “informed consent”. Informed consent is described as consent which is fully informed and given freely.

There are six ethical areas which may be considered by the researcher during any research project, namely, voluntary participation, subject well-being, identify disclosure, confidentiality, appropriate boundaries and researcher safety (Bachman & Schutt, 2011, p297). At all times during the research the researcher acknowledged these ethical considerations and is satisfied that at all stages they were met.

All participants were briefed that audio recordings would be made during the interview and that they would be used for transcription only. All participants were informed that any information given during the interview was for research purposes only and that confidentiality would be guaranteed. Transcriptions were made of the interviews but have not been included in this paper. Not alone were references to individual companies made during the interviews, but further information was given relating to their company business, the location of offices, demographics of staff, dates of investment in different regions and individuals in the company. The researcher believed anybody reading this paper would be able to figure out the

company in question from these pieces of information. To adhere to the guarantee of complete anonymity and confidentiality, transcripts were omitted. These transcripts are available on request to the college.

3.5 Limitations

The research was limited due to the availability of suitable candidates for interview. The researcher wanted to investigate a narrow and particular area relating to US technology companies with operations in Ireland. Getting access to suitable candidates proved difficult and in many cases the researcher had to use personal contacts in companies to arrange interviews. The small sample of six interviews may not be representative of the population of US technology companies with operations in Ireland.

A further limitation of the research was the level of knowledge of some of the interviewees in certain areas. Even though each candidate was a senior manager in each company, in some cases they did not have the complete picture relating all aspects of the business's activities.

The inability of IDA Ireland to divulge information on the grounds of data protection limited the research. The researcher believes that with access to more information from the IDA, some secondary data could have been included in the research.

Finally, the researcher feels that the breath and scope of this research study was a limiting factor. It is felt that an examination of the entire FDI investment process by these companies may have limited the focus on the key determinant of air connectivity. However, the researcher feels that this wider research was necessary to contextualise and frame the narrower objective of understanding air connectivity as a location determinant.

3.6 Alternative Considerations

3.6.1 Use of Surveys

The use of surveys was also considered but, as noted above, the researcher wanted to understand the motivations behind the decision-making process and explore the topic with greater freedom and inquisitiveness. The rigidity of surveys does not lend itself to descriptive research (Robson, 2002) as there is no scope for open-ended questions. Saunders et al. (2007, p361) argue that this technique does not allow the researcher to “prompt and explore” topics and that it provides only one opportunity to collect the data. They also note that the design of a survey must be very precise from the outset and ensure that it addresses the research objectives. Surveys would not have been in keeping with the adopted philosophy of interpretivism and the inductive approach. For these reasons the use of a survey was deemed unsuitable for this research project.

Chapter 4 - Research Findings and Discussion

4.1 Introduction

The purpose of this investigation was to explore if air connectivity is a factor for US technology companies in engaging in or increasing FDI in Ireland. Air connectivity was examined from a number of perspectives. Firstly, did the presence or lack of **direct flights** between a US company's home city and an Irish airport influence investment. Secondly, it went on to examine the effects of this direct air connectivity on the ongoing operations of a US company in Ireland and whether this has an effect on further investment. Finally, the effect of air connectivity from Ireland to other markets on FDI was researched.

In researching this multifaceted phenomenon, it was also necessary to investigate the motivations for companies in investing in new markets as well as the factors they consider when assessing suitable countries for investment. These various areas gave rise to six research objectives. Within each research objective, the most commonly discussed or commented upon themes were selected for analysis. These topics were related to readings from the literature review and in some cases, explanations offered for differences with existing literature. In undertaking this research, six in-depth interviews were conducted with participants from six different US technology firms. Five of the firms had operations in Dublin, while one had operations in Cork. In conducting the research, the data from each interview was grouped together to form a theme within each objective. It is hoped by structuring the analysis in this way that there will be a logical flow and progression during the research findings.

4.2 Findings of Research

As discussed, six research objectives were developed in undertaking the qualitative research for this project. The research objectives start with a broad analysis of FDI and then narrow to look at air connectivity specifically as a phenomenon for

companies. The first objective deals with the motivations and challenges associated with FDI. Next, the specific deciding factors or determinants that businesses consider for FDI are examined, both from an international and Irish context. The next three research objectives narrow the focus of the research to look specifically at air connectivity as a decision-making factor.

When analysing each research objective, a considerable number of topics emerged. The researcher selected only themes within each objective which were either recurring within each interview or were stressed as being noteworthy by one or more participants. Each theme within each objective is listed in decreasing importance with the most relevant theme being discussed first. Some of the research objectives below are analysed and reviewed with greater detail than others. While all the research objectives were deemed as important, some more closely answered the initial research problem.

4.2.1 Objective 1

“To investigate the key motivations and challenges for technology companies engaging in FDI”.

This section outlines the research findings relating to the key motivations and challenges for US technology companies when investing overseas. Four broad areas emerged in addressing the research objective. These four areas were market growth and investment diversification, talent acquisition, the challenge of setting up in a new country and finally, the risks associated with the economic and political stability of a new country.

There was general agreement between the respondents regarding their motivation for investing overseas as well as the challenges they encounter. However, different factors were of greater importance than others for each participant. Although the

responses were generally in line with the published literature in this area, some new topics not covered in the literature emerged regarding staff safety and security.

4.2.1.1 Market Growth and Diversification of Investments

All six participants agreed that they are motivated to expand internationally to grow their market share, increase profitability and spread risk. Participants 3 and 5 described that the overarching reason for them, as technology companies, investing overseas is to grow their market, to seek out “*market opportunities*” and increase revenue.

“Number one reason is to grow our market; we want more customers”.
(Participant 3)

Participants 2 and 4 noted that they must expand internationally to guarantee a return on investment to shareholders.

“We must deliver back on the return on investment to shareholders”.
(Participant 2)

These motivations are in keeping with Porter’s (1990) notion that businesses operating overseas fundamentally wish to grow their market and gain competitive advantage. This view is also in line with Faeth’s (2009) assertion that companies invest overseas to gain access to a global marketplace. Participant 2 noted that, especially in light of the recent *Brexit* referendum, corporations must vary their business operations and spread risk, which is in keeping with Gilmore’s (2003) assertion that firms are motivated to invest overseas to diversify their investments.

“We saw with Brexit; if you had all your eggs in one basket, you’re very dependent on that”. (Participant 2)

Participants 5 and 6 agreed with this notion of diversification and discussed that in some cases they acquire whole companies or subsidiaries to gain a foothold or gain competence in a new business area.

4.2.1.2 Talent Acquisition

Five out of the six participants listed the acquisition of local talent as a very strong motivating factor for them in expanding internationally. Participants 1, 2 and 6 were in agreement with Hymer (1976), who argued that companies above all else, when investing, wish to take advantage of assets overseas. The participants described that one of their main reasons for investing overseas was to utilise local talent.

“To achieve efficiencies and to get the right talent on board”. (Participant 1)

Participant 1 described that using local talent can allow the firm to overcome challenges that occur when operating overseas. Participants 2 and 5 agreed with this notion and described that having a locally resourced staff can enable the firm to overcome such issues as language or local customs and practice.

“To connect to our markets, to understand local customs”. (Participant 2)

These motivations, even today, would support the concept of psychic distance (Beckerman, 1956) for firms operating away from their home country. Participant 4, however, did add that there are *“no real borders with tech”* but explained that to be successful regarding sales and customer relations, you must have a local presence in the major markets.

Participant 5 noted that they invest overseas to attract and gain the correct *“skills set”* to service their customers. By investing overseas, they can select talent in specific areas that they feel gives them a competitive advantage.

The general view of the participants is also in keeping with Casey (2011) who argued that a primary motivation for technology companies is access to skilled workers. All the participants also discussed that operating overseas can allow the firm to take advantage of local sources of competitive advantage, such as the language and technical skills of local employees. This affirms Porter's (1990) study into the national sources of competitive advantage in relation to factor conditions and how they can offer long-term benefit to companies operating in particular countries.

4.2.1.3 Setting Up in a New Country

Four of the six participants noted the initial administrative and bureaucratic steps in setting up an overseas operation presented a significant challenge to their organisations when engaging in FDI. Participant 3 discussed that in many cases when operating overseas, it is harder to penetrate the market as they are *"almost like a start-up"* but they can overcome this by *"leveraging"* their US relationships. This would uphold Hymer's (1976) liability of foreignness, which asserts that firms, by simply operating away from their home country, are less profitable.

Participants 1, 3, 4 and 5 discussed that setting up any international operation is challenging and offers a number of risks. These challenges include tax structures, compliance and employment law. Participant 5 discussed that due to the nature of their international investments, which is mainly through mergers and acquisitions, a number of legal and regulatory challenges are presented.

"You have to go over and set up an office, hire staff, which can be complicated". (Participant 4)

Participant 4 added that when entering a complex market such as *"Russia or Brazil"* that they began by using third party intermediaries or sales representatives. Participant 5 discussed that as the Australian market for them grew and as their familiarity with that market increased, they moved from a distributor to their own

local operations. This would support the establishment chain in how firms enter new markets, as described in the Uppsala model (Johanson & Wiedersheim-Paul, 1975).

4.2.1.4 Stability and Security

The challenge and risk of stability and security in the new market were a theme which developed amongst four of the participants. Participant 2 discussed that their firm would not invest in a country which was politically unstable. This is in agreement with Jensen (2008) & Brada (2006) who argued that political instability will negatively affect FDI inflows. This topic appeared to be very relevant to the participant, perhaps explained by the recent political and economic instability in Russia, the Middle East and South America.

“A country that we would choose to invest in would have to be a very stable country”. (Participant 2)

Participant 1 stressed that alongside economic factors, personal safety of their staff would be a major issue for their firm. Participant 1 specifically mentioned Turkey as a country where they would like to have a presence but have decided against it based on safety grounds.

“For example, if we had an office in Turkey our people would be at risk”. (Participant 1)

Participant 2 noted that Russia and Egypt were countries where they had invested in heavily but this had “*tapered off*” because of political and economic uncertainty and instability. It was also discussed that company vice presidents are less likely to travel to areas where there is a perceived risk to personal safety.

“VPs aren’t inclined to travel at all but if they’re travelling, they want to make sure everything is safe”. (Participant 2)

Participant 6 discussed that both “macro and micro level risks must be assessed”, reaffirming Buckley et al.’s (2007) study. The participant stated that they examine such factors as economic and political stability as well as more localised issues such as risks due to the lack of availability of real estate, labour and supply chain.

4.2.2 Objective 2

“To investigate the location factors influencing technology companies when investing overseas”.

Before a company decides upon a country for investment there are a number of factors which influence the chosen location for FDI. In general, the participant’s responses were in agreement regarding the factors or determinants which influence their investment decision. Although much of the literature focuses on more traditional determinants, such as the cost of labour, more recent works support the research findings. From the analysis, four areas emerged as being important to US technology companies when deciding where to invest. The first factor was the availability of modern infrastructure and skilled labour. Secondly, the size of the market in the prospective country was an important determinant for corporations. Next, of particular importance, was the ability of the host country to speak English. The final factor which was highlighted and was seen to influence the location decision for US companies was the personal feelings or attitudes of senior management.

4.2.2.1 Technical Infrastructure and Skilled Labour

The technical infrastructure of the host country was very important to all participants. This reaffirms Bos & Lear’s (2004) work who list a good technical infrastructure as a key determinant and Duranton & Puga (2002) who argue that a good technical infrastructure can attract *high-tech* inward investment. Alongside this, the participants emphasised that it was not so much the cost of labour, but the

availability of skilled workers which was more important to them. Again, this can be explained by the competition for well-trained workers amongst technology companies. This is in keeping with Sethi et al. (2009) who describe that the availability of skilled labour and modern communications and IT infrastructure can positively influence inward investment in the technology sector.

“It would be down to the talent that's available, the technological infrastructure would be extremely important too”. (Participant 1)

Participant 2 reaffirmed this view and added that the number of universities in a host country or area is very important to them to guarantee the supply of skilled labour.

Participant 3 agreed with this assertion and discussed that both the technical infrastructure and the *“skill pool of workers”* are important to them when entering a new market. The participant also added that alongside technical knowledge, their employees in overseas markets must be able to work to a certain standard which is expected by their headquarters. These work practices include longer working hours and employee attitude to work. They also noted that US companies find it difficult to invest in France due to the country's employee protection legislation and the attitude of workers.

4.2.2.2 Host Market Size and Composition

There was unanimous agreement amongst participants regarding the size and composition of the market in the host country itself. Participants 2, 3 and 4 described that before investing in a country they would assess the current and potential size of that market. The views of the participants are in agreement with Barrell & Pain (1996) who stress the importance of a large market in the host country.

“If we have a lot of customers in a market, we're going to invest and help grow it”. (Participant 3)

Participant 4 discussed how they are heavily influenced by the location of “*clustered technology industries*” in particular countries. They stated that if a country already has a number of companies in close proximity in the technology industry, then it is more likely that they will invest and engage in FDI in that area. This is in agreement with Ruane & Buckley (2006) and Porter (1990) who discuss the advantages of clustered industries for technology companies. Participant 3 agreed with this contention and added that certain countries are more suitable for investment than others, depending on the type of industry that is already there.

“To give you an idea, I’d invest in certain products in India but not in Europe, because of the companies that are already there”. (Participant 3)

4.2.2.3 Language

All participants agreed that the language of the host country is very important to them. Participant 3 described that US firms like to speak English with the countries and regions they invest in. Casey (2011) argues that language and cultural commonalities can favourably affect inflows of FDI.

“They like countries that can speak English”. (Participant 3)

Participant 2 agreed with this contention and added that having the same language and culture can positively influence investment. A cultural closeness was also described as making it easier for US companies to do business in particular countries.

“US companies would be less inclined to go to somewhere like France, where you might have language problems”. (Participant 2)

4.2.2.4 Managerial Bias

Although only mentioned by two participants, both felt that the personal feelings of managers regarding where to invest were crucial. Participants 2 and 3 discussed that in many cases the location decision could come down to the personal preference of key management within the organisation. This would support Buckley et al.'s (2007) study which found that investment decisions can be influenced by managerial bias and an idiosyncratic decision-making process. Participant 2 described that in some cases investment decisions can come down to a CEO's personal feelings on a location.

"I know what that place is like and I think we could do business there".
(Participant 2)

4.2.3 Objective 3

"To investigate the location factors influencing technology companies when investing in Ireland".

The participants' views of location factors affecting their decision to invest in Ireland are connected with and are similar to the findings in the previous section. However, in each instance, the location determinants for Ireland were different and reinforced Ireland's unique standing in terms of attracting FDI in the *high-tech* sector. Three main areas were discovered which influenced the companies' decision to invest in Ireland. Firstly, Ireland's corporate tax structure was revealed as being a critical and vital determinant. Secondly, Ireland's membership and proximity to the EU was listed as being hugely relevant before investment. Finally, a theme that emerged and was listed as being significant was social proof, meaning that if so many other technology companies are already in a location, then a particular company should be there too.

4.2.3.1 Tax Structure

Participant 1, 3, 4 and 5 noted that, above all else, it was Ireland's tax structure that influenced the initial investment decision.

"Number one was the tax structure, bottom line". (Participant 3)

"The corporate tax rates are the best in Europe". (Participant 5)

This view supports Collins & Grimes (2011) and Casey's (2011) assertion on the positive effect of Ireland's corporate tax structure on inward investment. Participants 2 and 6 noted that at the time of their company's investment, the tax structure was not of great importance. This is perhaps evidence of the more central role played by Ireland's tax structure over time and the decreasing corporate tax rate since the 1970s.

"At the time, the tax arrangements, you know wouldn't have been that important". (participant 2)

4.2.3.2 EU Membership

All participants discussed that Ireland's membership of and proximity to the European Union was a vital factor in selecting the country for FDI.

"...because it was a member of the EU, it had a marketplace of six hundred million people". (Participant 2)

These views support Gilmore et al.'s (2003) contention that firms can use FDI as a means to access other markets or trading blocks. Participants 3 and 4 described Ireland as a *"springboard"* and a *"stepping stone"* into other bigger European markets such as Germany and France. Again, this is evidence of psychic distance, by developing experience with one country, a company may then use this country as a *"springboard"* to other nations (Johanson & Vahlne, 1992).

4.2.3.3 Theme 3 – Social Proof

Participants 1, 3 and 5 all agreed that a factor that was considered in their company's investment decision was the notion of social proof. *"Everyone else is here, it's social proof"* (Participant 3). The participants discussed that at the time they were considering investment in Ireland, they examined all the other companies operating there and observed the success of their operations.

"Knowing that other technology companies are based here is a huge factor because we know that a thousand companies can't be wrong". (Participant 1)

They went on to discuss that if so many top technology companies are operating in Ireland, the country must have something to offer to technology firms and so they should invest too. This is an area that was found not to have been previously researched regarding FDI.

"You had all the other multinationals coming in at the same time". (Participant 5)

4.2.4 Objective 4

"To investigate the significance of air connectivity between source and host cities to companies when making a location decision regarding FDI".

This research objective specifically examined if the presence of a **direct** flight between a company's US headquarters and an Irish airport was significant to that company when selecting Ireland as a country for investment. Two main themes emerged from the research, the first of which was the actual requirement or necessity for direct connectivity, which was widely discussed. The second theme which emerged was the need for direct connectivity for convenient travel of senior company executives. The research findings regarding the positive effect of direct air connectivity on FDI were generally in line with published literature. The second topic

relating to the travel of senior executives was a new area which was not discovered in the literature. This theme was mentioned by a number of the recipients and appeared to be of great significance for their companies in ensuring they were regularly visited by executives to safeguard and protect any future investment.

4.2.4.1 The Requirement of Air Connectivity

All the participants agreed that air connectivity was a major factor for their companies when selecting a location for FDI. However, different participants noted it as being more important than others. The views of the participants in an Irish context support McCann & Acs's (2011) and Xu et al.'s (2009) assertion that air connectivity is an important aspect of a firm's location decision for FDI. Although the participants noted the long distances from their US headquarters, this was not seen as particularly important, which would counter Cuervo-Cazurra's (2008) study who discuss the negative impact of distance on inward investment.

Participant 1 noted that although air connectivity was a consideration for their company, it was not that an absolute necessity. They pointed out that at the time they set up in Ireland there was no direct flight between San Francisco and Dublin, and although they would have preferred to have a direct flight, it did not stop their investment.

"No, it is a nice to have, but not a must have". (Participant 1)

Participant 2 discussed that during the assessment, and later during the setup phase of investment, that direct air connectivity between their company's home city in the US and Ireland was crucial. They also noted that despite their operation being based in Cork, the accessibility to Shannon airport with the associated connectivity allowed for *"nearly a direct link"* between Cork and their US headquarters.

"It would have been vital for execs travelling back and forth. On the initial start-up, you're looking at a lot more travelling." (Participant 2)

This is expanded on by noting that if there was no direct link, *“it would have been a huge inhibitor; I don’t think it would have gotten off the ground”*. This view is supported by Bel & Fageda (2008), who argue that air connectivity between the source and host is extremely important for companies when setting up regional headquarters.

Participant 3 felt that the existence of air connectivity between their headquarters and Dublin was again, vitally important. The participant also noted that in one instance they were familiar with, a new operation was established in the UK because there was no direct air connectivity to a potential region in Ireland from the US. The participant went on to explain that the existence of a direct flight made it easier and more attractive to invest in Ireland, but its absence would not have prevented investment.

“We would have invested, but it wouldn’t have made it easy, it would have made it harder, definitely a barrier”. (Participant 3)

Participant 3 used Israel as an example of a country, like Ireland, which attracts large volumes of inward technology investment. They explained that there is no direct air connectivity between Silicon Valley and Israel, yet companies invest because it is worth it for what the companies gets from the investment.

“Look, do US companies invest in Israel? Yes, they do. Is there a direct flight from Silicon Valley to Israel? No...but there’s a reason why they do it, because the pain of the extra flight is worth it for the value they get out of the R&D”. (Participant 3)

It was also conveyed that Ireland historically did not have the air connectivity to US cities it now enjoys yet companies still invested in the past.

“Would companies not invest here if there was no flight? They would because they did in the beginning when there was none”. (Participant 3)

Participant 4, 5 and 6 agreed with the other participants in that having direct air connectivity is important but noted that they do not believe it is vital for their companies to invest overseas or more specifically when they invested in Ireland.

“Connectivity would definitely be discussed. It is a factor that we would consider however it would not be a deciding factor”. (Participant 6)

Participant 4 noted that the relationship between US inward investment and air connectivity is like a “*chicken and egg scenario*” in that Ireland’s FDI success would not be there without the level of air connectivity to North America and that the degree of air connectivity would not be there without the high volumes of inward investment. They did note that despite there being a need for direct connectivity, they still need to be able to travel and ship goods relatively easily between Dublin and their US headquarters.

Participant 5 discussed that although they would like to see connectivity to all the markets they serve, it is not a “*must have*” and it would not stop them investing in a new market. They discussed that they would have an excellent business decision for entering a new market and while connectivity would be considered, it would not be a necessity. They did note however that having a direct service would always be their preference when looking at travel to new or existing markets.

4.2.4.2 International Accessibility for Company Executives

Three out of the six participants noted that direct flights for top executives from the US to their overseas operations is an important area. These views are generally in line with Bannò & Redondi (2014) who discuss the importance of air travel for company directors and management. Participant 2 explained the reasoning behind the importance of air connectivity during the initial assessment and setup phases. For a company to invest in a country, there is a need for regular visits by top

executives, including company vice presidents, and if they cannot get to somewhere easily, they will not travel.

*“You have to think of the mindset of these people as well, do they want to be travelling through all these different airports to get to Ireland? No”.
(Participant 2)*

Participant 1 agreed with this assertion and noted that direct air connectivity between their headquarters and Dublin facilitates the movement of top company executives.

“He's basically our top technology officer and he probably wouldn't have come if there was no direct flight. (Participant 1)

Participant 3 agreed with this assertion and attested that the availability of direct connectivity for their operation in San Francisco allowed for regular visits by their CEO. These trips included visits to potential office spaces in Ireland as well as to meet key personnel and to assess the viability of the operation.

“The first time our CEO came over here he did that direct flight....it was painless”. (Participant 3)

This need for convenient access to a new overseas operation links back to the previously discussed topic of managerial bias. Participant 3 noted that if it is easy for an executive to travel to and from a market, they may be more inclined to invest or expand investment.

“We said, there's a direct flight, now it makes it easy for you people (US Executives) they totally need it”. (Participant 3)

4.2.5 Objective 5

“To understand the importance of air connectivity for ongoing operations in Ireland”.

This section outlines the research findings regarding the importance of direct air connectivity between the US and Ireland in their **ongoing** overseas operations. This is specifically looking at the post-investment phase of operations in Ireland. The research objective was to examine if air connectivity between a company’s US headquarters and Ireland affected changes in investment over time. Two main areas emerged from the research in addressing this research objective. The first area concerned the time saved for personnel when travelling between Ireland and their US headquarters. Secondly, the necessity for face-to-face communication between staff in Ireland and staff in the US emerged as an important area. In general, the findings were in line with the published literature.

4.2.5.1 Time Saved in Travelling for Staff

All the participants agreed on the existence of a direct flight between their home city and an Irish airport saved time for staff travelling between the two destinations and increased the possibility of greater investment in the medium to long-term. Participant 3 noted that it is possible to leave Dublin on a California bound flight and still have time to make it into a Silicon Valley office that evening and on the return leg, it is still possible to make it into the Dublin office before the close of business. These views would support both Bannò & Redondi (2014) and Wickham & Vecchi (2008) who discuss the need for time efficient air connectivity for business travel.

“I can do an entire morning’s work here (Dublin), and I can get off the plane (California) and I can still get into the office there at three or four and meet people”. (Participant 3)

In comparison, it was noted that having to connect to California via London or other hubs adds significant journey time to staff, which wastes resources. The participant discussed that for top executives this presents difficulties and may inhibit them travelling, leading to *“less interest”* in a particular office and hence reducing the potential for further investment or expansion from the US headquarters.

“If that was London, there are two days gone travelling”. (Participant 3)

Participant 1 added that day-to-day the existence of a direct flight back to their US headquarters facilitates the movement of staff.

*“So it's the guys travelling at the mid-level within the company, going direct”.
(Participant 1)*

Participant 5 discussed that in their company, staff in the US are managed by Irish managers and vice versa. This management of staff requires a significant amount of travel between Dublin and San Francisco and a direct flight facilitates this and saves valuable time for their organisation, which in turn increases the likelihood of expansion of their Irish operations.

“So say, managers here in Ireland, they manage teams in the US and you have managers in the US who manage teams in Ireland”. (Participant 5)

4.2.5.2 Face-to-Face Communication

All participants agreed that, in general, even with advancements in technology, there is still a need for face-to-face communication and direct interaction with staff in their US headquarters. Participant 1 discussed that having a direct link allows for the easy movement of staff and facilitates *“the cross-pollination of information”*. This flow of staff back and forth improves staff *“education and training”*, customer service and ultimately grows their business in Ireland and grows investment. They noted that, again, if there was no direct air connectivity, the movement of staff would not stop

but certainly would be reduced. The staff that visit Silicon Valley come back with a global “*network of contacts*” within the company which allows them to increase sales which has the knock-on effect of increasing jobs and resources in Ireland and growing inflows of FDI. The participants’ views on this need for face-to-face interaction are in agreement with Leamer & Storper (2001) who argue that certain business dealings necessitate direct contact.

Participant 3 echoed this view and agreed that there is a need to meet people to discuss ideas and decisions face-to-face.

“I think it’s really important to have a strong face-to-face relationship with the people you work with...you need to have key people going over, working directly with their counterparts in the US”. (Participant 3)

The participant added that when raising finance for the expansion of overseas operations, face-to-face meetings are vital. The need for these meetings is facilitated by direct air connectivity and encourages growth and investment. It was further noted that no headquarters or finance company is going to invest in an Irish operation unless they can meet a representative and “*look them in the eye*”.

“You need to show up, you won’t get a finance deal across the line without showing up a bunch of times”. (Participant 3)

Participant 2, disagreed with participants 1 and 3 regarding the necessity for face-to-face interaction with colleagues in the US. They noted that in their company, with advancements and developments in video-conferencing technology, the need for travel between source and host cities on a regular basis has diminished. Alongside new technologies, cost was listed as a driver of reduced staff travel across the Atlantic. The dual uses of both direct face-to-face contact and the use of technology would be somewhat in keeping with Mokhtarian (2003) who argues that technology rather than substituting personal interaction, compliments it.

Participant 6 agreed with the other participants regarding technology and a drive to cut costs, they noted that they see a shift towards *“Telepresence, Video Conferencing and other face-to-face communication methods”* in their business. They discussed however that due to their management hierarchy, which is highly internationalised in nature, there will always be a need to visit sites and meet other staff members. This view regarding costs is supported by Collins & Grimes (2011), who, while examining the closure of the Dell plant in Limerick, cited cost pressures as a contributory factor in the cessation of operations.

Participant 4 discussed that they have quarterly sales meetings, either in their US headquarters or Ireland. Having a direct flight between these two locations makes travel easier and increases the likelihood of travel by a larger number of personnel. This again facilitates the exchange of information and ideas, increasing the growth potential of their Irish operation. They noted that if the direct flight for them went, they would seriously have to consider their operation due to the volume of exchange there is between the two offices.

“There’s only so far, getting on a phone, doing a Skype call, teleconferencing will get you”. (Participant 4)

4.2.6 Objective 6

“To investigate the significance of air connectivity between the host city and other markets to companies”.

This section examines the research objective relating specifically to the connectivity from Irish airports to ***other markets***, specifically in Europe. There was general agreement amongst the participants on the need for good air connectivity as a means to access other markets. The main area which emerged for the use of air connectivity to and from Ireland was the movement of people. The flow of goods, although mentioned was of less importance to companies and in some cases was irrelevant.

This again signifies the virtual or “weightless” nature of output by technology firms in Ireland (Buckley & Ruane, 2006). The findings were generally in line with published literature on the topic and in particular supported the findings of Bannò & Redondi (2014) who found that a good route network from a host location could increase the likelihood of FDI.

4.2.6.1 Movement of People

There was general agreement amongst the participants that the presence of good air connectivity out of the two researched locations, namely Dublin and Cork, is necessary for their operations regarding staff movement. Five participants noted that good air connectivity is significant for them as it allowed them to grow their business in other markets and thus increase investment in Ireland.

Participant 1 discussed that as they do not move goods, it is crucial that they can move people efficiently. They noted that they have a high proportion of international staff based in Dublin servicing their European customers and smaller sub-offices. This servicing of other markets means that having good connectivity is vital for them. The participant stressed that having access to the European market is perhaps more important to them than the connectivity back to their headquarters in Silicon Valley. Having all their international staff in one location saves money and delivers cost savings, but for this to be workable they must have the freedom to travel easily from Dublin.

“I'd say it's just as important, actually, you know what, it's more important, because that's one of the key factors why we're based here, so not necessarily the Dublin-San Francisco connection, it is that the connection to every other city in Europe.” (Participant 1)

Participant 2 also noted that as time moves on and their Irish operation establishes itself as a hub, their reliance on the US headquarters has reduced. This would be in

keeping with Ghemawat's (2005) hub strategy, whereby a regional base or hub will provide some shared services to a region and tailor their operations to suit local customer's needs.

"As we grew bigger, we moved from a start-up to a centre of excellence, so what happens now is that instead of going to the US, we're actually travelling to places around Europe and delivering the training and doing the start-ups".
(Participant 2)

The participant added that Ireland is now responsible for setting up new operations around Europe and the EMEA region and that during these initial phases, the need for staff travel is critical. However, they added that as with the Irish operation, over time as new markets and operations establishes themselves, the need for travel and movement reduces. They also noted that, due again to cost pressures, staff travel within Europe and other markets is now tightly controlled. This means staff now have to *"build their case"* if they wish to travel overseas from their Cork base. So although air travel is still a necessity and a frequent event, it is reducing as alternatives such as remote computing or video conferencing emerge.

Participant 4 noted that having a number of direct flights out of Dublin is advantageous for them and allows them to meet their customers regularly. It is this level of customer interaction that for them is vital for their business and is only achievable by the ease of access from Dublin. They discussed that, particularly in the beginning of a relationship with a customer, you must meet them and get to know them. After this, for technical calls and day-to-day matters, clients do not need the level of personal interaction.

"We're a company who very much likes to go out and meet our customers".
(Participant 4)

Participant 6 did not agree as strongly as the other participants for the vital importance of direct connectivity out of Dublin. They argued that it is possible to connect to any market in Europe through a hub, such as London or Frankfurt. They

gave the example of Luxembourg, which for years had no direct flight out of Dublin, yet their company were able to service customers there.

Chapter 5 – Conclusions and Recommendations

5.1 Introduction

This chapter will begin by outlining the main conclusions of the research, resulting from the previous chapter's findings and discussion. Secondly, a number of recommendations will be made for future researchers. Next, there will be a discussion on the recommendations for industry resulting from the research. Finally, the researcher's personal learning statement will be detailed.

5.2 Conclusions

As previously discussed, the researcher wanted to begin the research process by understanding FDI from a more general point of view before looking specifically at air connectivity. By firstly understanding the motivations and challenges of FDI for US technology companies, it was hoped that the specific location determinants that are important to each firm would emerge. Once these location determinants were identified, air connectivity could be examined in a more detailed manner and its significance analysed within the wider investment process in Ireland.

The research has attempted to fill the gap in existing research and to gain an insight into both how firms engage in FDI and the relative importance of air connectivity. In that sense the researcher feels that the research has contributed to the field of study in a wider context and more specifically in the area of inward investment in Ireland. With this in mind, four general conclusions are discussed below. Each conclusion is associated with the research findings which were developed in the previous chapter and addresses the research question which was identified in chapter three:

“Does air connectivity between Irish airports and foreign airports impact the likelihood or level of foreign direct investment by US companies in the technology sector?”

5.2.1 Motivations and Challenges

The motivations to engage in FDI for US technology companies are the same for all companies around the world, namely, to grow their business, maximise profits and increase market share. In many cases, their businesses have reached saturation or stagnation in the US market and FDI is seen as a means to take advantage of new, potentially untapped markets and utilise overseas resources. FDI in all cases was used by companies to gain a competitive advantage and ultimately increase profitability. What was of note amongst the participants was the use of FDI to spread risk. By investing in many countries around the world, the companies can insulate themselves from any individual economic or political shocks.

The motivations for FDI are accompanied by a number of risks and challenges for these technology firms. As might be expected, each firm noted that setting up in a new country is difficult and offers a unique set of challenges. Interestingly, the research revealed that stability and particularly security in new markets were of great importance to these companies when investing overseas. This is a factor which does not seem to have been widely covered in the literature but may be explained by the more recent events in the Middle East and the effect of terrorism on Western economies. There was repeated mention of Turkey, Egypt and Russia in general when investment decisions were mentioned. The recent United Kingdom exit from the European Union or *Brexit* was also highlighted, signifying the requirement for both political and economic stability when investing overseas. Although Ireland is a stable country in terms of political stability, the possible economic instability that *Brexit* may bring should be of note for Ireland in attracting future inward investment.

5.2.2 Location Determinants

The location determinants for technology companies when investing in Ireland and when investing in other countries, while similar, presented different results. When these firms are deciding on a country to invest in, they look more favourably at

countries with skilled labour and a good technical infrastructure. What is also important to US companies is the ability of their new operations to be able to speak English. Contrary to previous research, the actual cost of labour did not seem to be very important to these companies and they were more concerned with getting the right staff for them with the required technical skills. These views are somewhat opposed to Collins & Grimes's (2011) study into technology investment which suggested that the cost of labour, even in the technology sector, was the most important determinant in influencing initial investment. That study focused on companies who manufactured personal computers, which was not the case with the majority of the businesses in this research, whose outputs are either virtual or *high-tech* products.

When Ireland is considered for investment, above all else, Ireland's attractive 12.5% corporation tax is at the forefront. This has been a cornerstone of Ireland's inward investment strategy and continues to be successful in attracting US technology firms. Alongside Ireland's tax structure, the country's membership and proximity to the EU is of huge significance to investing firms. The increased market size that the EU offers is a huge positive influence on inward investment. Any changes to Ireland's access to the single market would be detrimental to any future inward technology investment. The concept of social proof was a new topic uncovered during the research and up to now has not been covered in previous research studies. This will be discussed further in section 5.3 below.

When US firms assess potential new countries for investment, they examine and weigh up a multitude of determinants. Each determinant is either an advantage or disadvantage for the country in question. Any particular country cannot create the absolute ideal location for investment, meeting all requirements, but they can certainly attempt to encourage and develop certain areas to increase the likelihood of inward investment. The next section will look at one of these determinants, namely, air connectivity and how it can be used as means to attract or at least *not discourage* inward investment.

5.2.3 Air Connectivity – Pre-Investment

While some participants noted the need for direct air connectivity as an absolute must before their company invested in Ireland, others listed it as beneficial but not crucial. These slightly differing viewpoints between participants relating to the absolute need for direct air connectivity may be explained by Arauzo-Carod et al.'s (2009) study which notes that different companies and sectors have different needs or requirements when it comes to air transport links. In the technology sector, and in this research, different companies have different needs when moving physical goods or personnel. While some companies use air travel between their headquarters and Irish operation several times a day, other companies might use these flights less frequently, including when setting up their Irish division.

The research indicates that the lack of direct air connectivity for companies when engaging in FDI overseas is not necessarily a deciding factor or crucial determinant, but more that its absence is a barrier to investment, which along with a multitude of other factors is assessed and weighted up. The other positive factors of a specific country can outweigh the need for direct air connectivity between the US headquarters and Ireland. This is evidenced by the number of Silicon Valley technology companies who invested in Ireland in the past before there was a direct Dublin - San Francisco flight. But, as mentioned above, investment decisions are made based on a multitude of factors and in some cases are determined by only small comparative advantages between countries. Countries like Ireland are in competition with other countries for the attraction, and retention, of inward investment. Therefore, less vital determinants like air connectivity should neither be ignored nor dismissed by countries or governments but instead should be developed, encouraged and promoted.

5.2.4 Air Connectivity – Post Investment

After a company selects a country for investment, the FDI process is not complete. Over time, US technology firms will assess and monitor the success of any overseas operation. If an operation is seen to be successful, increased resources and finance will be committed there, which is an expansion of FDI and reaffirms a company's commitment to that country. The research indicated that both direct flights between a company's US headquarters and an Irish airport and direct flights to other European markets positively influences the likelihood of increased investment in Ireland.

Direct flights between the US and Ireland encourage not only the transfer of people, but the transfer of ideas, knowledge and improved business practices. With easier direct access, staff members, management and clients are more likely to travel back and forth between the two countries. This personal interaction between locations ultimately benefits both operations, increasing the success of the Irish operation and cementing the working relationship between source and host countries. With increased success of the Irish operation comes increased interest and increased inflows of inward investment. As the research finding revealed, increased investment can come down to the decision of key individuals within an organisation and how they feel about the ease of access to an operation. Direct flights between the US and Ireland increases the likelihood of visits by key decision makers within organisations and keeps Ireland at the forefront of their considerations.

It was also found that having a strong route network between Ireland and other markets positively influences inward investment. Staff being able to travel directly between Ireland and a number of other countries means customers can be more effectively serviced, with more direct contact and more regular personal contacts. This ability to service international customers from Ireland again increases sales, drives growth and encourages further investment. Good air connectivity allows for employees with different linguistic skills to be based in Ireland and easily access different markets.

As with the desire for direct air connectivity for the pre-investment phase of FDI, continued and improved air connectivity between Ireland and the US, as well as Ireland and other markets, should be encouraged to increase the likelihood of increased investment. By facilitating the ease of international travel for staff and therefore more direct servicing of customers, Ireland can continue to offer benefits to US companies through increased sales and increased profitability. Despite air connectivity only playing a small part in the success and continued attraction of Irish operations, it is vital that it is protected and expanded. This air connectivity can then increase the likelihood of greater investment by US technology firms in the future.

5.3 Recommendations for Future Research

Despite the researcher believing this study has contributed to the overall field of study relating to FDI, the research may have been enhanced with some alternative approaches or methodologies. These considerations are detailed below.

5.3.1.1 Incorporation of Secondary Data

It is felt the incorporation of secondary data from other sources would have improved the researcher's overall understanding and approach to the study. Such sources for consideration are company reports, media articles and business databases. The use of these secondary sources may have enhanced the research findings which were limited to primary data from semi-structured interviews.

5.3.1.2 Narrower Focus of Research

As discussed in the limitations above, the researcher believes that in some respects the research was too broad and tried to address too much. It is believed that any

future research in this area should be narrower and focus in on specific determinants or phenomena relating to FDI. Despite this, the researcher believes that this broader investigation was necessary in this instance but may not be in future studies.

5.3.1.3 Possible Use of a Mixed Method Approach

The researcher now considers the benefits of a mixed method approach, incorporating some quantitative element. It is believed that the use of a qualitative approach to uncover the topic was correct, but the results and findings of this approach may have been enhanced by some additional quantitative research. It is believed that an additional quantitative research tool would have narrowed the focus of the study and given more robust, measurable findings.

5.3.1.4 Possible Future Research

As discussed in the research findings chapter, there were a number of areas the researcher believes merits further research or examination. Firstly, the concept of social proof as a location determinant was uncovered and was not found to have been previously studied. This is an area, especially in an Irish context, which may be of interest and contribute to the field of study. The next topic which emerged and was found not to have been previously examined is staff personal safety and security as a consideration for firms when investing overseas. This was a particularly resonant topic with participants, perhaps underlined by current events around the globe. Although probably not as relevant in an Irish context, it is believed this topic merits further research. The final area the researcher feels merits future study is the impact of the *Brexit* referendum on the Irish FDI sector. Although the effects of the *Brexit* may not be felt for several years, the social and economic effects may be studied in the short term to offer an insight into the repercussions for the Irish economy.

5.4 Recommendations for Industry

5.4.1 IDA Ireland Survey

It is recommended that IDA Ireland survey current and potential overseas operations to assess their needs requirements in terms of air connectivity. This survey could provide an insight into the potential demand for new or expanded routes. Despite individual companies not having the critical mass to require or lobby for new flights, together a number of companies may have the required demand to make a new route feasible. With this information IDA Ireland could engage with airlines to highlight possible demand for new routes. The financial costs of a survey of this nature would be modest and could be completed in the medium term. The cost of any survey would be mitigated by the potential benefit to industry and the wider economy. This survey may contribute to and support the second recommendation below.

5.4.2 Coordination Group

In examining the topic of air connectivity, it emerged that in Ireland there is no organised agency or body tasked with the coordination of route development amongst overseas companies, airlines, airport authorities and government departments. The research revealed that any meetings or activities relating to route development for the purposes of business expansion are quite informal and ad hoc. This ad hoc approach was highlighted by the reestablishment of the Dublin-San Francisco route by Aer Lingus. While this topic was not a specific research objective, as it did not directly address the research problem, the researcher feels it requires attention. It is therefore recommended that a formalised body be established, including the above mentioned bodies, to coordinate, develop and examine route development for the purposes of attracting or growing inward investment. This group should look at existing routes in and out of Ireland as well as new possible routes which may be potential sources of inward investment, such as Austin, Texas.

That location was highlighted in particular as the next area for growth in *high-tech*. The financial costs of the formation of such a body would be negligible and could be established in the short to medium term.

5.5 Personal Learning Statement

While the researcher found the entire research process challenging, it was also found to be a worthwhile and ultimately rewarding experience. Before this project, while being relatively familiar with the aviation industry in Ireland, the researcher had limited knowledge of the *high-tech* FDI sector and the important role it plays in the Irish economy. At times the researcher was overwhelmed by the enormity of the project and was surprised by the sheer volume of information contributed by the six semi-structured interviews. The researcher tried to breakdown the entire project and generated data into smaller pieces which could be completed individually. In hindsight, the researcher feels that with more time and a better initial understanding of research methods that the study could have been enhanced. It is also believed that the research may have been enhanced or crystalized with the incorporation of other sources of data. Despite this, the researcher is satisfied with the work they have produced and its contribution to the wider field of study.

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Appendices

Appendix I - Information Letter

Dear Sir or Madam,

I am a part-time student at the National College of Ireland in Dublin where I am completing a Master's Degree in Management. As a part of this degree I am required to complete a research thesis. I am an air traffic controller in Dublin Airport so am interested in the areas of aviation and business investment. This letter is an invitation to consider participating in this research study. I would like to provide you with more information about this research and what your involvement would entail if you decide to take part.

Title of Study: An Exploration of the Relationship Between Air Connectivity and Foreign Direct Investment in Ireland by United States Technology Companies.

Description of Study: As the title suggests I am hoping to investigate whether the availability of direct air links between a foreign IT company's home city or region and one of the three Irish state airports is a decision-making factor for that company before investing in or growing investment in Ireland.

Information for Potential Participants: I am therefore asking you or an individual in your organisation to participate in a semi-structured interview to assist in this research. All information will be strictly anonymised and all participants will have the right to withdraw from the study at any time without question. The interview would take approximately 30 minutes and will cover areas concerning foreign direct investment, trade and business travel. If you have any questions, please do not hesitate to contact me at stephen.enright@student.ncirl.ie.

Your cooperation in this research study would be very much appreciated and it would hope to extend learning in the area of foreign direct investment.

Kind regards,

Stephen Enright
National College of Ireland
08X XXX XXXX

Appendix II - Informed Consent Letter

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

I have read the information presented in the cover letter about a study being conducted by Stephen Enright, student researcher at the National College of Ireland, Dublin. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research, with the understanding that the **quotations will be anonymous**.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This project has been reviewed by, and received ethics clearance through the National College of Ireland. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact Mr. David Hurley, Supervisor at the National College of Ireland, Dublin on 08X XXX XXXX

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

☐ YES ☐ NO

I agree to have my interview audio recorded.

☐ YES ☐ NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this research.

☐ YES ☐ NO

Participant Name: _____ (Please print)

Participant Signature: _____

Researcher Name: _____ (Please print)

Researcher Signature: _____

Date: _____