Strategic leadership of architectural firms in Ireland:
The role of emotion management
and innovation

by
Kerrie Fleming

Supervisors: Professor Patrick C. Flood
and Dr Janine Bosak

A thesis submitted to Dublin City University in partial fulfilment of the requirements for the degree of Doctor of Philosophy

November 2011

Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy is entirely my own work, that I have exercised reasonable care to ensure that the work is original, and does not, to the best of my knowledge, breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

Signed: _____ Kerrie Fleming ID No.: 58109579

Date: _____

CONTENTS

Five: Quantitative data analysis

Six: Qualitative findings

Seven: Discussion and research contribution

List of Tables

List of Figures

Abbreviations

AIA	American Institute of Architects
CPD	Continuing Professional Development
CSO	Central Statistics Office
CIS	Community Index Survey
DCU	Dublin City University
EI	Emotional Intelligence
EM	Emotion management
EQi	Emotional Quotient
GMA	General mental ability
HR	Human resources
IQ	Intelligence Quotient
IVC	Innovation Value Chain
IWB	Innovative Work Behaviours
MPB	Managed Professional Business Firm
MHS	Multi Health Systems
MSCEIT	Mayer, Salovey and Caruso Emotional Intelligence Test
NESTA	National Endowment for Science Technology and the Arts
P^2	Professional firm
R&D	Research and development
RIAI	Royal Institute of Architects in Ireland
RIBA	Royal Institute of British Architects
TCI	Team Climate Inventory
SPSS	Statistical Package for the Social Sciences

Dedication

to my husband David

Acknowledgements

Firstly, I would like to express gratitude to my supervisors Professor Patrick C. Flood and Dr. Janine Bosak for their advice, support and dedication throughout my research.

I would also like to thank my colleagues and friends at DCU who provided assistance, especially Dr Edel Conway, Jennifer Farrell, Rachel Kidney, Professor Colm O'Gorman, Muriel Keegan, Rachel Keegan, Nichola O'Sullivan, Dr Siobhan McGovern, Professor Darach Turley, Claire Balfe, Anne Marie Caherty and, in particular, Dr Na Fu.

I owe a debt of gratitude to Mr. John Graby and Sandra Campbell of the Royal Institute of Architects in Ireland (RIAI). I would also like to sincerely thank Eugene McClernon, Tadgh Sweeney and Denis Brereton; senior partner at RKD, and Shelley McNamara; senior partner of Grafton Architects. I would like to thank Dr John Logan, Department of History, University of Limerick for his endless encouragement on my journey into the world of architecture.

Thanks also to my close friends who encouraged me and provided longstanding emotional support during what was often a challenging journey. These are Dr Elaine Doyle, Dr Caoilfhionn Ní Bheachain, Jim Dalton, Dr Bernadette Whelan, Mary Danagher, Orla Fahy, Dr Jill Mulqueen and Mary J. O'Sullivan. Thanks to both my parents for imparting their values to me, they have held me in great stead.

Finally, thank you to my husband Dr. David A. Fleming, who has been a constant source of encouragement, patience and love.

ABSTRACT

This study explores the strategic leadership of architectural firms in Ireland. It examines the role of emotion management (a component of emotional intelligence) and innovation in architecture firms.

This thesis uses both qualitative and quantitative methods. The qualitative approach uses a series of nine interviews with architects to provide a research context for the study and offers insight into the business landscape and unique challenges facing the profession. The study identifies a profession that has unique emotion management requirements arising from the need to manage a multitude of stakeholders. The lack of a strategy within most firms suggests a profession that is not fully utilising emotion management to harness this innovation potential. A lack of commercialisation aptitude is evident and is linked to the regulation on marketing and promotion of the profession. The implications of this are evident in the reduction of over 60% in sales revenue recorded during the study.

To further inform the study, a quantitative survey-based approach gathered data from 210 architectural firms in Ireland. The quantitative study proposes that emotion management abilities will have a positive effect on firm innovation, which will allow these abilities to be harnessed and generate good performance outcomes. Hierarchical multiple regression is used to analyse and test the proposed relationships.

The results support the direct effect relationship between emotion management and innovation. The findings suggest that the firm's emotion management abilities positively relate to commercialising innovation.

Overall, the study provides a comprehensive analysis of the direct effect of emotion management on innovation as a performance outcome, and how these emotion management abilities can become a unique resource for architectural firms. The study provides theoretical support and adds to the current literature on the links of emotional intelligence to performance outcomes in the business context (Cote and Miners, 2006; Rode et al., 2007; Sirkwoo Myeng-Gu and Shapiro, 2008; Van Rooy and Viswesvaran, 2004), how to capture hidden innovation in professional service firms (Cainelli, Evangelista and Savona, 2006; Coombs and Miles, 2000; Evangelista, 2000; Mansury and Love, 2008; Tether, 2005). The study also provides useful guidelines for management practice in the profession.

CHAPTER ONE

Introduction

1.1 Research Aims

Of all the professions, architecture is perhaps one of the most unique and creative. Architecture as a profession has a long history, dating back to early civilisation. Relying on the patronage of powerful figures or organisations for employment and opportunities, architects were valued for their aesthetic and technical expertise as designers and creators of buildings. By the nineteenth century the profession had developed into a recognisably modern form, partly indicated by the incorporation of the Royal Institute of Architects, founded in Britain in 1834, and a similar organisation established in Ireland in 1839. Today, architects rank alongside lawyers, doctors and accountants within the professional sector. In Ireland there are in excess of 600 architects registered with the Royal Institute of Architects in Ireland (RIAI). The economic boom of the 1990s and 2000s resulted in an increasing demand for large scale public and private architectural work, which increased the visibility and profitability of many architectural firms. However, the collapse of the Irish construction industry had a disastrous effect on the profession, with nearly 50% of architects practising in 2007 now unemployed (Keogh, 2010). Although the end of a boom period is an opportune time for architects to reflect on their sustainability in the marketplace (Keogh, 2010), some consideration must also be given to the

more general tensions with which architects struggle. On the one hand, they are expected to provide a creative, often innovative design, yet on the other, such impulses must be offset by client demands and financial considerations.

This research aims to empirically examine the business processes underlying the profession, and offer a framework that can be used to capture its unique strengths. This in turn will provide the sector with knowledge of how better to formulate strategy, innovate, lead and commercialise their practice.

This thesis has two main objectives. The first is to explore the business processes employed by architecture firms in the current economic environment and offer some context to the study. To meet this objective, qualitative evidence is gathered using a quasi grounded theory approach. The study then maps the business landscape of contemporary architectural firms in Ireland and facilitates an assessment of whether the sector is harnessing internal capabilities to grow, as opposed to waiting for market demand to increase (Keogh, 2010).

The second objective is to explore the role of leader emotion management as a means of generating innovation in the firm. Emotion management (EM) has previously been linked to outcomes such as supervisor-rated performance, transformational leadership, academic performance, peer working relationships and team performance (Cote and Miners, 2006; Rode

et al., 2007; Rosete and Ciarrochi, 2005; Sirkwoo Myeng-Gu and Shapiro, 2008; Stubbs Koman and Wolff, 2008), but has not been previously linked to business performance outcomes such as innovation. An increased understanding of the impact of EM in architecture will facilitate the profession and its members in responding appropriately to the current economic climate.

1.2 Thesis Structure and Outline

This thesis is divided into eight chapters. Chapter 2 introduces the architectural sector, and its unique attributes. It comprehensively reviews the literature surrounding the profession and notes a paucity of empirical evidence on the business processes within architectural firms, especially in the areas of leadership, strategy and commercialisation of the sector. The findings offer some suggested areas for a qualitative enquiry into contemporary architectural firms in Ireland.

Chapter 3 presents a review of the emotion management literature by firstly examining current leadership theories, including strategic leadership, and secondly, by studying emotion management, segregating emotions, intelligence and cognition. The innovation literature is then reviewed, exploring open innovation in service firms and examining the behaviours required to lead such innovation. A number of gaps in the literature are highlighted, and a subsequent research question is fashioned to examine these omissions.

Chapter 4 firstly details the philosophical approach used in the study, and secondly, outlines the research methods used to gather empirical evidence. The final section of the chapter examines the measures used to assess the main variables of the study, and suggests measures of emotion management and innovation to gather evidence to address the research question.

Chapter 5 provides a content analysis of the interview data gathered to address the first research objective. Interviews highlight the high number of stakeholders involved in the architectural business. Managing and leveraging these stakeholders to enable effective performance outcomes demands strong emotion management skills. The findings also point to a lack of strategising and commercialising abilities within the profession.

Chapter 6 presents quantitative data gathered from 210 architectural firms. The hypotheses are tested and the results are presented. The regression analysis results show a small but significant relationship between leader emotion management and commercialising innovation.

Chapter 7 discusses the main findings and outlines how this study contributes to our knowledge of business processes in the architecture profession. It notes that the study provides new sector-specific knowledge on organisational structures, leadership styles, emotion management,

strategy and stakeholder innovation for architects. The limitations of the study and future areas for research are also outlined.

Chapter 8 brings the thesis to a conclusion by drawing the various strands in each chapter into an overall context. It concludes that leader emotion management abilities and stakeholder knowledge can be harnessed to generate innovation based upon a resource-led strategy for the firm. The study offers a framework to apply to the business processes of the architectural sector.

CHAPTER TWO

Architectural firms: A review

2.1 Introduction

This chapter examines architectural firms in Ireland, their characteristics and business activities. The lack of empirical findings on how to conduct business in this sector is noted.

2.2 Architectural Sector

The sector that has been chosen as the focus of this research is architecture in Ireland. Pinnington and Morris (2002:189) describe architecture as ‘a rich site in which to study the interplay between professional and managerial values under pressure for change’. Architecture, as a profession, is fighting to maintain a viable balance between the challenges of creative work and commercial constraints and goals. The Irish government produced a policy for architecture for 2009-2015, which recognises the Royal Institute of Architects in Ireland (RIAI) as the State’s registration and regulatory body. The RIAI is also the national body for the promotion of the profession in Ireland. Its main function is to promote the value of architecture for Irish society, to highlight its contribution to Ireland’s competitiveness, environmental sustainability and to enrich the culture and heritage of those living in the country. Although anyone can design a building, the title of architect is protected by statute, and this status can only be achieved through

a process supervised by the RIAI. This leads to high barriers of entry and exit to the profession due to the specific nature of the skills employed.

2.3 The Architect

Architects assimilate a wide range of influences that are illustrated by (Blau, 1984:6): 'let the architect be educated, skilful with the pencil, instructed in geometry, know much history, have followed philosophers with attention, understand music, have some knowledge of medicine, know the opinion of the jurists, and be acquainted with astronomy and the theory of the heavens'. This leads to some comparisons of the profession to artists, scientists, businessmen, lawyers, advertisers, educators and psychologists (MacKinnon, 1965). Sociologists have placed the profession alongside other high ranking occupations such as medicine, law, and engineering. The status surrounding the profession emerges from the high level of training and expertise required to become a practicing architect (Blau, 1984). However, the low monetary rewards attained by most architects reduce this status somewhat in comparison to other professions. Other high ranking professions can develop a monopoly for their services, which lends itself to economic privilege and social standing, while architects have failed to do so (Larson, 1980) because the profession needs to collaborate and compete with engineers, interior designers and speculative builders, some of whom dispense with the need for an architect altogether.

In terms of characteristics, architects are often seen as creative introverts, described as 'those architects who mumble through the drawings and have no ability to bring the design to life' (Harrigan and Neel, 1996:39). Harrigan and Neel (1996) state that the executive architect must 'maintain the pace and tempo and spirit associated with high performance, create utility from advances in technology and provide opportunities that totally engage the abilities of the firm's associates and staff' (1996:26). This creativity can also lead to a resistance to being managed, which provides difficulties for the leaders of architectural firms (Wynch and Schneider, 1993). This focus on creativity at the expense of leadership skills is encouraged across most architectural schools whose primary focus is creativity and design. This can lead to huge difficulties in the professional life of an architect, which finds them having to become an expert in stakeholder management of their clients, their teams, external collaborators and their own professional peers (Wynch and Schneider, 1993). One study (Blau, 1984), which focuses on the leadership priorities of architectural firms, found that the main priorities of leaders or principals of architectural firms are financial success, client satisfaction, aesthetics, personal satisfaction, logic and function, utility, amicable contractor relationships, professional recognition, and the improvement of life and pleasure to the occupier. Kamara et al. (2002) provides a comprehensive list for managing in architecture, such as knowledge accumulation, feedback, transfer of knowledge, relationships with suppliers, informal networks and collaborations (National Endowment Science Technology and Arts (NESTA), 2009). One emerging style of

leaders in architectural firms are star architects or ‘starchitects’, such as Sir Norman Foster (Treiber, 1995). These experts are highly sought after by clients, but stereotypically have little time to mentor their teams. According to Harrigan and Neel (1996), a successful organisation is where the firm is the star, not the individual. If the leadership changes, then the firm may change direction but the team commits to work on the firm’s strategy.

Developing a number of strong teams within architectural firms is hugely important. One senior principal from Harrigan and Neel’s (1996) interviews describes the process of designing as a creative intuitive process, where individuals do not just sit behind a computer producing designs, but define and analyse the problem and create a solution. One senior principal at a leading American architectural firm calls for ‘an alignment of project goals across the entire project team to create a fundamental understanding that the complexity of projects require the input of a broad based team’ (American Institute of Architects (AIA), 2007:42). NESTA’s (2009) survey of 217 architectural firms found that innovation was produced mostly through teamwork with external partners of varying skill-sets. A senior architect interviewed by Blau (1984:55) said that ‘vertical project teams can be inefficient when it comes to drafting, but the end result is an integrated design concept and the project is handled more responsibly’. This is due to the fact that every aspect of the design and production is considered by the breadth of the team. When Blau (1984) tentatively explored why some teams had limited decision-making powers, she found answers that were

‘couched in terms of efficiency or distinctive knowledge required for administration’ or ‘prerogatives of those with capital investments’ (1984:35). This lack of decision making across teams is a significant shortcoming of the profession, which is often led by those who are fearful of a dilution of their decision-making power. This fear is unfounded because Tannenbaum et al. (1974) found that when worker power is extended, the influence of management does not subsequently decline. Kanter (1977) additionally states that broadening team member responsibility increases interdependencies throughout the firm, and this interdependency is empowering to participants. Blau (1984) measures this level of team empowerment in three ways. The first assesses how many employees have direct contact with the client; the second examines the number of individuals who share responsibility for a project, and the third, the number of non senior managers in charge of the project. Her findings demonstrate that the more individuals in the firm had direct contact with the client, the higher the project quality, the client repeat rate and the value of projects for that firm (Blau, 1984:43). Jones et al. (2008) agree and suggest that strategies in creative firms such as architects are inevitably an aggregation of the individual interests and motivations of the team. Blau (1984) found that architects have a greater collective influence when the firm offers them complex tasks and a wide scope of activities. However, Blau (1984) suggests that large firms tend to centralise control due to the sheer size and complexity of projects, which creates a surplus of decisions made at senior management level. She measures the level of bureaucracy by the number of

procedures governed by written regulations. She states that firm age, formalisation, incorporation, and use of consultants reduce the voice that the average architect has in the firm.

The most effective strategy for an architectural firm is one that integrates the functional, the technological and team structure. Harrigan and Neel (1996:59) describe strategy for architects as where the opportunities are, how to get there, and what resources and skills are required to get there. This does not involve taking a complex plan out of the drawer, but is much more a process of critical thinking and flexibility. Blau (1984) measures the success of a strategy through eight indicators: productivity (annual number of projects), merit record, profits, number of services offered to clients, diversity of clients, professional staff (number of architects), size and client repeat rate. Wynch and Schneider (1993) use Porter's (1980) generic strategy model to offer four strategies that architects can use. The first is strong delivery, where a practice offers designs for relatively simple building types, for less than average fees. This is achieved through extensive use of Computer Aided Design (CAD), which reduces labour overheads. The second is strong experience, where the firm has expertise in differentiated buildings and can charge premium fees. The third is strong ideas, where reputation provides the clients with original and exciting ideas for high fees. The fourth strategy is strong ambition, where new firms to the market charge below average fees due to lack of reputation. However, this is not a sustainable strategy in the long term. Porter's strategic positioning is

also crucial in determining whether a firm is a leader or follower in the sector. Some firms take on all types of projects and waste much energy tendering for projects that they are not equipped to take on, which is contrary to Koren (2005) who advocates that firms must offer unique services and not be all things to all people. Wynch and Schneider (1993:931) agree and state that during a severe recession in the industry in the early 1990s (with similar market conditions to 2010), those practices who 'can articulate a clear, distinctive competence to their potential clients are the most likely to survive'. Koren (2005) outlines the advantages of choosing a specialised area where one has the most experience. Coxe et al. (1997) also develop a generic strategies typology for professional practices, which incorporates technology and values. Technology can be categorised into strong delivery, strong service and/or strong ideas. The values element of the typology distinguishes between practice-centred business, which is seen as a way of life, and a business-centred practice where the business is seen as a way of making a living.

2.4 Business Performance in Architecture

In 2003, there were 2,500 practising architects in Ireland. In 2009, the number had been reduced to 611. In 2010, 50% of architects were unemployed largely due to the contraction of the construction industry. This led to a strategic review of the profession by the RIAI that resulted in an action plan for the sector for 2010-13. Items in the plan include: a focus on quality and design, sustainability and the future, engagement with the

national planning system, consumer protection, training and education and continuing professional development. The plan proposes the provision of first-class architecture and infrastructure in Ireland to attract and retain talented and successful people to live and work in the country. The President of the RIAI, Paul Keogh, sees the present time as a period where architecture can be revived by introducing sustainable materials and design-led planning (McDonald, 2010).

Figures from the American Institute of Architects (AIA) present a global decline in the commercial building sector of 7% in 2009. The provision of credit seems to be the main deterrent, and iconic architectural projects such as the Chicago Spire, which was designed by Santiago Calatrava, are now on hold. However, just 7.2% of American architects are unemployed (Ivy, 2010). Those who have employment have an ability to diversify typologically and geographically, and move easily from domestic to public projects. At the Global Construction Summit in New York in April 2010, 400 people from 20 countries gathered to determine what countries are still investing in capital projects. China was identified as one of the most important because it did not suffer as badly from the worldwide recession, and continues to show a national economic growth rate of 9.7% (*Trading Economics*). Such growth has seen China commit to linking the entire country via a high speed rail service at a cost of US$300bn to connect all of its ‘second class’ cities. This project will subsequently prompt demand for new housing and commercial centres within these cities. India has also

experienced a decade of expansion in the software sector, which prompted the New York summit to speculate that its infrastructure would encourage building over next decade (Ivy, 2010). As these countries modernise their infrastructure, architects will find new opportunities across global boundaries. One problem with this type of knowledge transfer is the difficulty of deciphering the country of origin of the expertise (Falconbridge, 2006). However, these global employment opportunities may also provide inspiration for Irish architects, who have experienced much higher unemployment rates than their American counterparts.

2.5 Promotion and Profitability in Architecture

High unemployment in Irish architecture is mostly attributed to the decline in public funding for large-scale capital projects and limited availability of finance. In addition, architectural firms, by their very nature, are creative firms and their training incorporates problem solving and innovation and does not include any business education. Creative acclaim is often a higher desirable than business success (Wynch and Schneider, 1993). Therefore, the marketing of architectural practices is never explicit, but often comes solely from referrals. The ‘gentleman’ legacy of architecture stems from the ‘Royal Institute of British Architects’ (RIBA) code of professional conduct. From 1979 it did not permit its members to directly approach potential clients (Guttman, 1988:81). This same code applied to, and was accepted by Irish architects until 2004 (RIAI, 2004). However, its legacy continues in Ireland, where marketing and advertising firms are seen as taboo. Referrals

continue to be the preferred means of attracting business. Some firms are trying to attract clients in a number of unconventional means, by bringing architecture to the public and making it accessible though homes exhibitions and trade shows.

The *Architectural Record* (2010) describes similar promotion activities in New York, where a sandwich board advert offering 'free design consultations' attracted crowds of people to discuss problems with their home extensions. The promotion helped architects to inform the public what the profession does. Other promotional activities occur in online media and social networking channels, and one company established a blog to record the musings and opinions on architectural buildings, to try to promote a dialogue around architecture and design. A website called 'Architizer', launched in 2009 has attracted 5,000 profiles, 3,500 projects and 1,000 firm biographies. It has been referred to as the 'Facebook for Architecture'. This is a way to carve out space and get architecture into the game, according to Marc Kushner, founder and principal of the firm HWKN. However, some architects in the industry see this promotional activity as cheapening the image and damaging the exclusivity of the profession.

The debate is ongoing. Koren (2005:1) opens his book on marketing for architects with a section entitled: 'You sell for a living'. He states that architects build their reputation and brand with every interaction that people have with their practice. Koren (2005) criticises the acronyms that combine

two or more names of the directors of practices. This is not conducive to clients remembering the firm, because acronyms do not have the same effect as distinguishable names. Harrigan and Neel (1996) states that every member of the firm must be alert to opportunity, and integrate themselves as trusted members of the community. They advocate the sharing of specialised knowledge about building design and improving quality of life for the public. One of the senior principals who was interviewed by Harrigan and Neel (1996) states that most firms now need to provide add-on services to their clients to increase profits. They state that when a proposal is issued for project design, the firm should first offer a basic design fee, but also provide an attractive add-on such as a project management service to increase firm revenue.

Like most artists, architects often do not value the work and time they put into the projects, which is reflected in the pricing and subsequent profitability of the profession. Guttman (1988) argued that in the 1960s architects were earning well below comparable figures for law and medicine, and even below teaching and university lecturing. Overall profitability of US architectural practices is around 6% before taxes and bonuses (Ivy, 2010). Historically, large firms pursued social status over economic reward, which was often the result of disorganised firm strategies and weak organisational structures (Pinnington and Morris, 2002). Some small firms with little reputation find it difficult to gain a foothold in the market. Most large firms are established in large cities where the majority of

high value work and reputable schools of architecture are located. Blau (1984) states that US firms who survived the 1970s recession achieved survival through mastering high productivity and economies of scale. However, these firms experienced large debts, changed leadership through dissolving partnerships, had to lay off staff and relocate to smaller offices. Some also pursued new markets, diversified client and market bases, and introduced recycling or renovation as part of their activities.

2.6 Business Processes of Contemporary Architects in Ireland

So, the question is raised regarding how Irish architects might continue trading through the current recession. A review of the literature around leadership, teams, strategy and structure in architecture provide some stark findings on the ad hoc nature of the business activities of the profession. The lack of a central literature source to combine these elements creates a void for the profession on how to conduct effective and efficient business practices. An empirical enquiry into the profession may offer some context regarding how contemporary architectural practices manage their business processes.

In order to gather a true picture of these practices and the current business difficulties facing contemporary architecture practices, this research uses a quasi grounded theory approach to both explore the current status of the profession, and provide some themes to deepen the enquiry of the scientific methods. The first stage of this exploration uses semi-structured interviews,

which point to a profession that demonstrates strong emotion management abilities. These abilities emerge in order to manage the expectations and emotions of a large numbers of invested stakeholders, which include internal teams, external collaborators and clients. The importance of emotion management during the creative nature of the design process also became apparent due to the restrictions on creativity, driven by the firm's strategy. The presence of multiple stakeholders in the business processes lead to some difficulties in the generation of optimum performance outcomes. The findings will be presented in Chapter 5 and discussed in Chapter 7. This qualitative approach also prompts a further research question that will be explored using some suitable business theories of emotion management and innovation. Prior to this discussion, we first turn our attention to a review of the literature on emotion management and innovation.

CHAPTER THREE

Literature review

This chapter reviews existing literature and examines relevant theories of leadership, including strategic leadership. It also examines the combined behavioural components of effective leadership, which include emotions, cognition and intelligence. The chapter considers the types of innovation in service firms and the leadership skills required to manage innovation. The chapter identifies a number of gaps in the literature and prepares a number of hypotheses to further our knowledge in this area.

3.1 Introduction

The evolution of leadership theories reflects the fact that today's organisations must encourage the development of personal competencies such as self management, self presentation, empathy and interpersonal sensitivity, in order to succeed (Fox and Spector, 2000). These competencies are increasingly of interest because they deal with the recognition, regulation and expression of moods and emotions. One such concept, which has established itself in mainstream business and psychology literature, is Emotional Intelligence (EI). The term EI was coined by Mayer and Salovey (1990), and is now a well established measure of how individuals manage, perceive, understand and assimilate emotions. Comprehensive empirical research on EI has emerged over the years,

appearing in top peer-reviewed journals such as the *Academy of Management Review, Academy of Management Journal, Administrative Science Quarterly, Journal of Applied Psychology, Leadership Quarterly* and *Journal of Organisational Behaviour.* All demonstrate that EI is a 'predictor of significant outcomes across diverse samples of real world domains' (Mayer et al., 2008:527). EI is described as important in assisting leaders to make good decisions about new products, markets, managing followers, and the management of certain emotions and behaviours are key determinants when matching organisation values with those of employees (Gardner and Stough, 2002; Mandell and Pherwani, 2003; McGarvey, 1997). A review of the leadership literature may provide some suggestion regarding where to position EI within leadership behaviour.

3.2 Leadership Trends

Current leadership research no longer focuses on one individual leader, but considers the role of followers, supervisors, culture, work context, and citizenship behaviours (Avolio, Walumba and Weber, 2009). This trend is reflected in the new leadership models that examine symbolic leader behaviour, inspirational messages, emotional feelings, values, individual attention and intellectual stimulation (Avolio, 2007; Avolio, Walumba and Weber, 2000; Yukl, 2006). Avolio, Walumbwa and Weber (2009) examine these leadership theories, which mostly reflect behavioural requirements of successful leading. Among these is authentic leadership, which draws from 'positive psychological capacities and a highly developed organisational

context', which leads to greater leader self awareness and regulated behaviours, which in turn lead to positive self development (Luthans and Avolio, 2003:243). This is evidence of just one of the emerging styles of leadership, which combines rationality with complementary styles of thinking, such as intuition, creativity and emotion, which encourage insight and guide comprehensive decision making.

This new type of leading illustrates the continuing evolution of the theory of leadership since its origins as a science in the twentieth century. Since its foundation, the amount of academic research on the subject is enormous: 'there are almost as many definitions of leadership as there are persons who have tried to define the concept' (Stodgill, 1974:259). Some definitions include: 'Leadership is the behaviour of an individual, directing the activities of a group, towards a shared goal' (Hemphill and Coons, 1957:7); 'Leadership is exercised when persons mobilize institutional, political, psychological and other resources to arouse, engage and satisfy the motive of followers' (Burns, 1978:8) and 'Leadership is the ability of an individual to influence, motivate and enable others to contribute towards the effectiveness and success of the organisation' (House et al., 2004:184).

In the past half century, four main studies and classifications of leadership have emerged: the 'trait theory' approach, which focuses solely on the pattern of personal characteristics of the leader (Stodgill, 1948); the 'behavioural theories' approach, which focuses on the behaviours of leaders

(Hemphill and Coons, 1957); the 'contingency theories' approach, which explains how situational variables affect leadership effectiveness (Fiedler, 1964) and finally the 'charismatic theories' approach, which considers the emotional and symbolic aspects of leadership (House, 1977). The outcomes of earlier research (trait and behavioural) tends to focus on answering narrow scholarly questions that examine how individual traits affect leadership performance. These examine how dual patterns of activities such as initiation versus consideration, or task versus people oriented activities affect organisational performance. One such theory is the Leader Member Exchange (LMX) theory (Graen and Uhl-Bien, 1995), which examines the relationship between leaders and their followers, and its link to positive organisational outcomes. The subordinate must offer commitment, initiative and effort (organisational citizenship behaviour) to carry out the tasks entrusted to him by the leader. The leader must provide attention and remain responsive to the subordinate's needs and feelings, using influencing methods such as persuasion and consultation.

Contingency theories state that previous leadership studies ignored situational factors while assessing leadership success (Riggio, Murphy and Pirozzolo, 2002). Similarly, Burke et al. (2002) state that individual leaders who are recognised as emergent leaders should be evaluated in accordance with the context, as opposed to fitting with more generic leadership categories. Bolden and Goslin (2006) also state that organisations are looking to move beyond the individualistic notions of leadership towards

more inclusive and collective forms. They also state that failure to consider the broader social context of leadership is to miss the significant role played by other factors, including 'followers, managerial rewards, organisational systems, nature of work and cultural environment' (2006:151). The charismatic theories outline the psychological processes of how leaders influence their followers (House, 1977; Shamir, House and Arthur, 1993). Weber (1947) defines charisma as a form of influence that the leader has, most of which is based on the perceptions of followers. The most well documented of the charismatic theories is transformational leadership. Transformational leaders are said to transform organisations through influencing their followers to achieve positive and visionary goals. This motivates followers because their thinking is challenged and they look beyond the current status quo (Ashkanasy, Hartel and Zerbe, 2000). The opposite to this type of leader are transactional leaders who are focused on reward-task oriented goals, and employee compliance (Burns, 1978).

Modern leadership theorists call for research of leadership at multiple levels of analysis, 'from cognitive through to organisational climates' (Avolio, Walumbwa and Weber, 2009:426). Such research would help us to understand the contextual variables that mediate the relationship between leaders and followers. This will help us to understand the role of environmental complexities and social networks in this relationship (Bono and Anderson, 2005). One such theory, which encapsulates both the

relationship and the context, is the theory of strategic leadership, to which the discussion now turns.

3.3 Strategic Leadership

The study of strategic leadership differs from the singular study of leadership, because it focuses on not just one, but all the executives who have overall responsibility for the organisation and its characteristics. These executives can include the leader or chief executive (CEO), top management team or board of directors. Finkelstein and Hambrick (1996) found that CEO dominance may increase team homogeneity and team size, but will decrease team agreement, which can lead to problems in strategy formulation and implementation. Miles and Snow (1978:6) state that top teams have a vantage point that gives them an opportunity and requirement to view the organisation as a total system, and therefore, this 'collection of people, structures, and processes must be aligned with the organisations' chosen environment'. Another benefit of focusing on the top team is where the team members interact collectively as a group, making decisions to influence the outcome of the strategic decision-making process (Wiersema and Bantel, 1993).

Top management teams are defined as a set of executives who are most active on a particular issue (Jackson, 1992). They are multi-dimensional, composed of: 'composition' (values, cognitive bases and experiences); 'structure' (role of members and their relationships) and 'process' (nature of

interaction among the members) (Finkelstein and Hambrick, 1996:162). Strategic leadership resides at the intersection of cognitive, social and political concepts (Finkelstein and Hambrick, 1996). Upper echelon theory refers to the observable demographics that reflect the psychological and cognitive aspects of executives (Hambrick and Mason, 1984). Top management teams impose a fundamental influence on strategic choices across the organisation and it is their cognitive basis that guide and support decisions determining organisational effectiveness (Knight et al., 1999; Smith et al., 1994). Eisenhardt and Zbaracki (1992) propose opening up the cognition debate, which examines insight, cognition and emotion, to enhance the understanding of the rational and political processes of strategic leadership. The theory of Emotional Intelligence provides a means to open this debate.

3.4 Emotional Intelligence

Emotional intelligence (EI) is a competency that enables people to use emotions advantageously to achieve desired outcomes (Fox and Spector, 2000). Mayer and Salovey (1990) define EI as the ability to understand and to control both personal emotions and the emotions of others. The *Annual Review of Psychology* (2008) defines EI as the 'ability to carry out accurate reasoning about emotions, and the ability to use emotions and emotional knowledge to enhance thought' (Mayer, Roberts and Barsade, 2008:511). Early research on emotions assumed that emotions prioritise thinking and allow people to become better decision makers. The research states that an

individual who has an ability to respond emotionally will attend to the more crucial aspects of his or her life (Mandler, 1975). The reverse of this is the person constantly frustrated with minor issues, who ends up neglecting broader and often more important concerns (Parrott, 2002). EI represents abilities that join intelligence and emotion to enhance thought, combined with elements of cognition to help to understand the process. All three will be outlined by an examination of the literature on emotion, cognition and intelligence.

3.4.1 Emotions

Emotional feeling is a phase of neurobiological activity and plays a critical role in the evolution of consciousness and the operations of all mental processes (Izard, 2009). Emotions are essential for motivating actions that are critical for adapting to challenges of survival or well-being. In Whyte's (1956) classic book, *The Organization Man*, effective business people are described as logical, reasoned and rational decision makers. He found that emotions deflect objectivity and are a force within individuals that need to be controlled. Emotions are also associated with weakness and instability, and are unwanted and unsociable sets of characteristics (Muchinsky, 2000). In accordance with this thinking, emotions are usually the exclusive arena of experimental psychologists, but have recently come to the attention of sociologists, anthropologists and social psychologists who highlight the potential of emotions to achieve desired outcomes (Fineman, 1996). Recent studies suggest that the study of emotions should become a legitimate

domain of social enquiry (Muchinsky, 2000). Muchinsky states that studying emotions may further the science and practice of organisational behaviour. Solomon (2004) states that part of knowing ourselves and our own natures is an understanding of our emotions, which are much of what makes life worth living.

Much research has since shown that emotion is an integral part of daily life and is inseparable from the work environment (Ashfort and Humphrey, 1995; Ashkanasy, 1996). There are two categories for the study of emotions. The first is 'basic emotions', which have been categorised by various studies. For example, Izard (1972) proposes ten discrete emotions: fear, anger, enjoyment, disgust, interest, surprise, contempt, shame, sadness and guilt. Shaver, Schwartz and Wu (1992) offer six emotion categories: relief, fear, hurt, bitterness, disappointment, and worry. Fisher (1997) lists 13 emotions: affection, pleasure, happiness, pride, optimism, enthusiasm, frustration, anger, disgust, unhappiness, disappointment, embarrassment and worry.

The second category for studying emotions is 'emotion schemas', which are dynamic emotion-cognition interactions that may consist of situational responses or more enduring personality traits that emerge over time (Izard, 2009). Utilisation of emotion is dependent on emotion-cognition interaction, which occurs partly from experiencing the emotion, and partly from learned cognitive, social and behavioural skills (Izard, 2009:3). It is also assumed

that emotions can be passed on from leader to follower by the following means: ‘conscious cognitive process’ (where empathy is expressed toward the leader displaying the emotion), ‘conditioned or unconditioned emotional response’ (response based on prior or similar emotional experiences) and ‘mimicry/feedback’ (where followers mimic the leader expressing the emotion) (Hatfield et al., 1994). In the past, the dominant literature on the psychological human experience consisted of three realms, which were: thinking, feeling and acting (Hilgard, 1980). This separates the psychological human experience into cognition, emotion and motivation. Since then, the separation has led to more of a focus on cognition and has neglected emotion (Ashkanasy, Hartel and Zerbe, 2000).

3.4.2 Cognition

Individual cognitions are described by Finkelstein and Hambrick (1996:45) as ‘an interwoven set of psychological and observable characteristics which engages the filtering process and gives rise to construed reality and strategic choices’. Cognitions lack an evaluative component, because they are simply beliefs about what is. However, emotions are internal processes that occur from external inputs. In other words, we react emotionally to situations we find ourselves in (Ashkanasy, Hartel and Zerbe, 2000:65). This is referred to as affective events theory, which proposes that organisational events are proximal causes for affective reactions, and these affective experiences have a direct influence on our behaviours and attitudes (Weiss and Cropanzano, 1996:11). Ortony, Clore and Collins (1988:18) define these events as

‘people’s construal about things which happen, considered independently of any beliefs which they may have about possible or actual causes’. Muchinsky (2000) suggests that the study of emotions should be elevated to the same plane as cognitions. This prompts discussions on whether emotional reactions give rise to intellectual ones or vice versa. This leads to the debate on the primacy of affect over cognition, which examines how preferences (affect) and inference (cognition) affect consciousness. However, which comes first, cognition or emotion?

The segregation of all three elements has led to an idea that there is a sequence along cognition, emotion and affect. Studies have shown that through cognitive and physiological components, emotions can feed back and modify emotional reaction. This emotional experience can modify cognitive appraisal and future emotional experience, which can subsequently modify physiological reactions (Ashkanasy, Hartel and Zerbe, 2000:160). These authors concur that emotion has cognitive aspects, and that it is not valid to debate the direction of the relationships between the two. However, the authors agree that an interplay between the two exist and that is what influences behaviour. It is now generally accepted throughout the literature that cognition and emotion are inseparable (Avia, 1997). Ashkanasy et al. (2000) suggests that research into the dynamic interplay between cognition and emotion in organisations could be brought to a new level. However, Zajonc (1984) says that we process information both affectively and cognitively: we experience a feeling toward something in a

split second before we intellectualise it. This leads us to an examination of the intelligence construct.

3.4.3 Intelligence

Intelligence is defined as a type of mental ability that concerns the handling and reasoning of information (Carroll, 1993). Mayer, Roberts and Barsade (2008:510) view intelligence as a term referring to the hierarchy of mental abilities. They state that the lower level of the hierarchy is the ability to recognise words or meanings, and at the middle level are verbal-comprehension abilities that understand verbal information. The highest level of the hierarchy is general intelligence, which involves reasoning across all domains. Generally, it is assumed that there is only one type of intelligence, which is 'general intelligence'. This is thought to sufficiently represent an individual's cognitive ability, which predicts occupational, educational and life successes (Jensen, 1998). Evidence that other types of intelligence exist began to emerge as early as the fifteenth century, when a monk named Mastenbrook called for 'even temperedness', which we now refer to as a type of emotional intelligence (Ashkanasy, Hartel and Zerbe, 2000). In the early twentieth century, Thorndike (1920) conceptualised social intelligence, and Wechsler (1940) followed this by examining the notion of non-intellectual abilities. Gardner (1983) developed the construct of interpersonal and intrapersonal intelligence, and proposed eight types, including: spatial, musical, intrapersonal, interpersonal, bodily, kinaesthetic, naturalistic and academic intelligence. Sternberg (1985) identified three

types of intelligence: analytical intelligence, creative intelligence, and practical intelligence. All theories share a common attempt to de-emphasise general intelligence and undermine its position and promote alternatives (Murphy, 2006). One such alternative is emotional intelligence, which indicates that those with average, as opposed to a high intelligence quotient (IQ), succeed better in life through their ability to be politically astute and network their way through social situations. Although intelligence and emotion are often considered in opposition (De Sousa, 1990), research demonstrates how cognition and affect are integrated processes, and affect can influence many aspects of cognitive functioning, including memory, attention and decision making (Damasio, 1994). EI posits that the information value of emotions can make thought processes more intelligent and it is also seen as distinguishable from other mental skills, such as verbal-propositional intelligence that operates on 'cold' cognitive processes (Brackett et al., 2006:781). This emotional aspect of intelligence is now discussed.

3.4.4 Defining Emotional Intelligence

Mayer and Salovey (1990) argue that individuals who are highly emotionally intelligent will be able to understand their own emotions and those of others, regulate these emotions and use them to solve problems. Some researchers simply define EI as the ability to reason about emotion, while others select a number of traits that enhance the concept, such as achievement, motivation, happiness and self regard (Locke, 2005). Goleman

(1995) globally popularised the concept of EI and allowed it to filter into the minds of both academics and practitioners through his bestselling book on the topic. He describes EI as knowing how one is feeling and being able to handle emotions without becoming swamped, being able to motivate oneself to get jobs done, being creative and performing at one's peak, sensing what others are feeling and handling relationships effectively. EI is often described as temperament, character, and basic information processing adaptiveness, insightful self awareness and good person-environment fit (Mathews et al., 2002). Bar-On (1997) defines EI as an array of 'non-cognitive capabilities, competencies and skills that influence one's ability to succeed in coping with environmental demands and pressures'. EI has been found to correlate with better social relationships and lead to fewer problem social behaviours, which often originate in childhood and continue through to adulthood (Mayer, Roberts and Barsade, 2008). In addition, EI may be linked to emotionally supportive features of the environment, such as social support, positive reputation among others and an absence of emotionally damaging relationships (Zeidner, Mathews and Roberts, 2003). These authors state that EI may be viewed as the 'goodness of fit' between a person and their social environment. This refers to the fact that our emotional functioning is optimal when our beliefs are congruent with others in our current situation (Murphy, 2006). The literature demonstrates that EI has grown from an abstract notion of an alternative intelligence measure of IQ, to one that is emerging at the forefront of our understanding of human emotion and behaviours and their subsequent impact on the inhabitants of

the work environment (Cacioppo and Gardner, 1999; Eisenburg, 2000; Lubinski, 2000).

According to Mayer and Salovey (2002), EI has four major components: self awareness, self management, social awareness and emotion management. Mayer and Salovey (1997) describe self awareness as effectively expressing and understanding the emotional needs of oneself and others. It usually allows people to identify between accurate and inaccurate expressions of emotion. This is demonstrated in Ekman's research into nonverbal (facial) expressions and communication of emotion (Ekman and Friesen, 1975). Ashkanasy and Nicholson (2003) describe self awareness or emotion perception as a set of abilities that are restricted by individual differences in the structure and function of neurobiological mechanisms (Murphy, 2006:193). Emotional assimilation or self management allows the individual to understand how they are feeling and to prioritise those emotions that are influencing their thoughts. This allows individuals to determine the appropriate emotional state to solve a particular problem (Jordan et al., 2002). This is illustrated in research on the emotional aspects of motivation (Hamilton, Bower and Frijda, 1988), commitment (Allen and Meyer, 1990) and emotional contagion (Barsade, 2002). Social awareness or emotional understanding is the ability to understand complex emotions, such as loyalty and betrayal, and understand how this same set of emotions may be affecting colleagues. This component also refers to an ability to recognise transitions between emotions, including, for example, moving

from the emotions of betrayal to sadness. Emotion management is not completely new, as understanding emotion progressions and cycles have been central to cognitive behavioural therapy (McMullin and Giles, 1981) and psychological counselling (Bordin, 1965) for many years.

Emotion management is an individual's ability to regulate their emotions. This can lead to emotional labour, which occurs when there is conflict between the felt and displayed emotions. Emotional labour is a term used to describe emotional displays that are contrary to, and mask, real feelings (Fineman, 1996:19). An example of emotion management emerges from Hochschild's (1983) study of flight attendants who wore a 'company prescribed mask' denoting enjoyment at all times during in-flight service, irrespective of their true feelings. This research found that some flight attendants perform their emotional duties in line with their own feelings, which caused a minor division between themselves and their roles. On the other hand, some defined their roles separately from how they were feeling, which required acting, to switch on expressions of concern and enthusiasm when required. Such excessive emotion management or emotional labour can take its toll and lead to stress, with personal feelings 'leaking' through the mask. In addition, the stronger the hierarchical domination of the firm, and the more prolonged the imposition of emotional performance, the more demanding these pseudo emotions become (Fineman, 1996). Often, emotional labour can become an intrinsic element of the work role, leading to the blurring of boundaries between internal and external emotions, which

leads to merging of work demeanour and self. This process reduces emotion to a form of labour and separates the mind and body, which leads to the alienation of the individual. This is illustrated by Ferguson (1984:54) who states: 'Like prostitutes, flight attendants often estrange themselves from their work to prevent being swallowed by it, only to suffer from a sense of being false, mechanical and no longer a whole integrated self'. This is also evident from the qualitative findings, which state that architects have to portray an image of happiness around a design, which they had to modify due to a client's conservative nature, or due to the firm's strategy which may advocate a more 'sensible' approach to the project.

However, there are many critics of EI who argue that emotions in organisations reduce effectiveness in a managerial setting (Ashforth and Humphrey, 1995; Putnma and Mumby, 1993). Shiv et al. (2005) suggest that feelings are a source of unwanted bias and thus need to be properly regulated (Gross and John, 2003). It is also argued that EI is a misinterpretation of the intelligence construct, and should be relabelled and referred to as a skill (Locke, 2005). Some argue that the definition of EI ignores the role of contextual information in emotional processing and judgement, as well as excluding emotional expressiveness, empathy, perspective taking and self control (Murphy, 2006). Rode et al. (2007) state that placing an employee with low EI into a highly motivating work environment could potentially elicit a host of undesirable behaviours, including manipulation and aggression, or simply withdrawal to deal with

the increased stress of the situation. Although there are critical questions surrounding certain aspects of EI, the majority of the empirical research validates the concept and demonstrates its importance (Brackett and Salovey, 2004; Day and Carroll, 2008; Lopes et al., 2006; Mayer and Salovey, 2002). This importance is evident from the inclusion of the definition of emotional intelligence (Mayer and Salovey, 1997) in the American Psychological Association (APA) journal, *Emotion* (2009), which is a recognised forum for scholarly discourse.

3.4.5 Empirical research on Emotional Intelligence

As previously outlined, empirical research on EI is steadily accumulating in top ranking journals, such as the *Administrative Science Quarterly*, the *Academy of Management* and the *Journal of Organisational Behaviour*. Goleman (1998) says that EI training can help managers to deal with subordinate insecurity, encourage teamwork and establish productive relationships. This, according to George (2000), will ensure that leaders have the skills to manage employee emotional states (Jordan, Ashkanasy and Hartel, 2002). This is illustrated by many studies, which include Cote and Miners (2006), who found that EI predicts supervisor assessed task performance in a sample of 175 university employees. In a study of the link between EI and leadership, Sirkwoo, Myeong-Gu and Shapiro (2008) found a positive relationship between EI and emotional intensity of transformational leaders in a sample of 192 managers undertaking an MBA programme. They found that in periods of high emotional intensity, there is

a tendency for the cognitive resources of leaders to become drained and subsequently cause them to lose focus on their followers. Law, Wong and Song (2004) note a positive relationship between EI and job performance, where those who have high levels perform better than those with a lower EI. Rode et al. (2007) examined the direct and moderated effects of EI on interpersonal effectiveness and academic performance on a sample of 378 university students. They found that the effects of EI on performance are more indirect than direct in nature, because those individuals must not only have EI but also be motivated to use it. Similarly, Dasborough (2006) found that highly emotionally intelligent individuals report less intense emotional responses to leader-follower interactions. In studies of the organisational effects of EI, Goleman's (1998) empirical research of 121 global companies reveals that EI abilities rank more than twice as crucial for excellence as technical abilities (Moorehead, 2006). Ashkanasy, Hartel and Jordan (1998) imply that emotional intelligence has a wide ranging effect across a large number of organisational variables and parameters.

In other studies EI is positively linked to groups and team performance. Stubbs, Koman and Wolff (2008) collected data from 422 respondents representing 81 teams in a military organisation, and found that emotionally intelligent managers and leaders foster and support emotional competence, leading to the creation of emotionally competent group norms. Jordan et al. (2002) studied the link between EI and two measures of team performance: team process effectiveness and team goal focus, in a sample of 448

Australian undergraduate students. They found that low EI teams perform at a lower level than those with higher levels. In studies of change, Tsaousis, Vakola and Nikolaou (2004) found a significant relationship between EI and attitudes to change in a sample of 137 professionals. In terms of encouraging employer employee relations, Rossete and Ciarrochi (2005) examined 41 executives from a large Australian public service organisation, and found that executives with high EI helped cultivate productive working relationships. Daus et al. (2005) also carried out quantitative research on EI and found that it predicts job satisfaction and inversely, turnover intentions. Mayer et al. (2003) found that women often scored higher on the measure of EI than men but there were no differences reported for ethnicity. Conte (2005) states that EI is likely to be culture bound, and calls for a study of cross cultural similarities and differences. Kerr et al. (2006) tested 38 supervisors in a large manufacturing organisation and found that supervisory EI was positively related to supervisor rating effectiveness. Lopes et al. (2006) examined the work performances of 44 analysts and clerical employees of a US based insurance company, and found that EI was linked to company rank, peer and supervisor rated sociability and contribution to a positive work environment. Further empirical evidence demonstrates links between EI and strategic leadership, which includes: team performance, attitudes to change, job satisfaction, leadership type and effectiveness, and the creativity aspect of innovation. These studies will now be examined.

3.4.6 Strategic Leadership and Emotional Intelligence

Research focusing on the merits of EI on leadership activities and behaviours has increased since the late 1990s (Boyatiz and McKee, 2002; Caruso, Mayer and Salovey, 2002; Cooper and Sawaf, 1997; Kerr et al., 2006). Burgoyne et al. (2004) states that the key elements of leadership should include the creation of opportunities for assisting self awareness and reflection in followers, and support the shift from individualistic notions of leadership to inclusive relational perspectives. This approach will 'breathe new life into the practice and performance of leadership' (Bolden and Gosling, 2006:160). When leaders are aware of their own emotions, they can establish stronger relationships with employees (George, 2000). This usually fosters trust and improves well-being because leaders are seen as role models and subsequently gain trust and respect (Avolio and Gardner, 2005; Gardner et al., 2005). Emotions expressed by transformational leaders can often provide blueprints for their followers on how to emotionally react in similar situations (Lewis, 2000). Sirkwoo, Myeong-Gu and Shapiro (2008) discovered that leaders with high levels of EI were often perceived as transformational leaders. Gardner and Stough (2002) studied 250 high level managers and found that EI correlated with all components of transformational leading. Transformational leaders can arouse heightened awareness in a group and de-emphasise any narrow self interest and rationality. Mandell and Pherwani (2003) studied 32 managers in mid sized organisations in the US, and found significant relationships between transformational leadership style and EI. Ashkanasy, Hartel and Jordan

(1998) argue that EI impacts on leadership styles and the relationship between leaders and members. In linking EI with innovation, Amabile et al. (2005) found that positive emotions have been demonstrated to promote increased creativity in some contexts, and emotionally intelligent leaders explain significant variance of creativity dimensions. Yuvaraj and Srivastava (2007) found that, in a sample of 90 Indian executives, managerial innovation was positively related to EI.

Other empirical research demonstrates that EI abilities are critical in determining an individual's and organisation's success. (Gardner and Stough, 2002; Mandell and Pherwani, 2003; McGarvey, 1997; Moorhead and Neck, 1995). McGarvey (1997) argues that EI is the key element that employees and leaders require to build successful organisations. Emotional intelligence abilities will help to develop a clear understanding of the true organisational processes that are taking place beneath the surface (Kets de Vries, 2001). People at every level of the organisation are 'hungry for direct, emotionally straightforward interaction' (Johnson and Indvik, 1997:84). When Kets de Vries (2001) seeks to identify successful leaders, the first thing he looks for is EI or how self reflective the person is. Also considered are negative emotions of leaders that can have an adverse effect on followers' emotional state, and their perception of the leaders' credibility and coping skills in stressful situations (Lewis, 2000). However, some negative emotions such as expressions of anger by the leader towards outside parties may also evoke powerful feelings of unity and cohesion

among the team through adversity. Certain emotions displayed by leaders can be interpreted by followers as representing desirable or undesirable traits (Lewis, 2000). A leader consumed by sadness may be perceived as lacking in self confidence, while anger is often associated with strong leadership (Bass, 1990), but also can mean a lack of control, which Goleman (1998) links with leader ineffectiveness.

When studying relationship quality, Brackett et al. (2006) found that it is necessary to test the EI of all team members. When measuring team EI, Jordan et al. (2002) were keen to evaluate which aspects of team performance are influenced by EI. They indicate the importance of team processes that can often be more of a predictor of value than a measure of the output. Weiss and Cropanzo (1996) state that emotional factors can have a long-term effect on team performance. They used a sample of 448 Australian management and communication undergraduates, and discovered that average team EI predicts team performance. The high EI teams appeared to have the requisite skills to perform well against goals and criteria, whereas low EI teams did not.

Thus, as the research illustrates, the concept of EI creates a platform to help deepen our understanding of emotions, cognition and intelligence, enriching our sense of the functionality of human emotion and the breadth of human intelligence (Mayer, Roberts and Barsade, 2008). Carroll (1993) describes EI as a term parallel to verbal comprehension intelligence and general

intelligence. Empirical research demonstrates that EI is a proven and valuable addition to contemporary science and practice. EI theory 'has raised awareness of the importance of emotional components in diverse domains of human abilities and their applications in peoples lives' (Mayers, Roberts and Barsade, 2008:526). It is evident from the literature that leader EI is linked with creativity and performance outcomes. A study of EI in architectural firms would allow the sector to assess their management team capabilities and evaluate if these behaviours drive performance (Conte, 2005).

The final section of this chapter will examine innovation, its definitions, components, innovation context and the leadership of innovation.

3.5 Innovation

Scholars have been unable to fix on an agreed definition of innovation in the literature. Shipton at el. (2006) describe innovation as the generation and implementation of a creative idea. West and Farr (1990:9) define it as 'the intentional introduction and application within an organisation of ideas, processes, products or procedures designed to significantly benefit the organisation or wider society'. Roper and Love (2004) describe innovation as that which evokes and promotes new knowledge among group members. Innovation is identified by West (1987) as a process that occurs at individual and group levels. The term innovation is used to explain the creation of a new product or the rejuvenation of existing processes or

products. Damanpour and Evan (1984) assess technical and administrative innovations; technical innovations can pertain to products and services, as well as operation processes central to the organisation, whereas administrative innovation refers to the changes in the organisational structure and the people who populate the organisation. Cainelli et al. (2006) conclude that innovative firms out-perform non innovators, and these better performing firms are more likely to further innovate and subsequently devote more resources to innovation. They describe it as a self–reinforcing mechanism. Roper, Dundas and Love (2008) argue that although the merits of innovation are evident in terms of performance, process innovation has little or no effect on innovation, while product innovation can often reduce productivity. Freel and Robson (2004) observed similar effects and found that the introduction of new products can reduce productivity in the short term.

One of the important aspects of measuring innovation outputs is to examine inputs. Hage (1999) points to the limitations of a number of studies that do not control the amount of investment in research and development, in order to test whether the structure and size of the organisation has had an effect on the amount of innovation generated. Hull (1988) highlights the importance of inserting some controls such as firm size and investment in innovation research so that knowledge companies can be fairly compared. In their study of innovation indicators of 38 research and development (R&D) firms, Bain et al. (2001) call for a replication of the study with larger R&D teams and

‘360 degree feedback’ on innovation performance from customers, external suppliers, and scientific experts. This involves examining the role of stakeholders in the innovation process. Grabowski (1979) found growing evidence that larger firms are proportionately less innovative than smaller firms. This is surprising at first glance, because larger firms will have greater R&D resources, but Acs and Audretsch (1988) found that the number of innovations in an industry increases with R&D expenditures, but at a decreasing rate. The reason for this is that highly creative individuals can become discouraged in large R&D laboratory operations, while small firms are usually cost conscious, and the same project might be conducted with less waste of resources (Kaimen and Schwartz, 1982). Bantel and Jackson (1989) argue that innovation requires large investments that small firms cannot afford. In addition, when firms grow, they develop norms and values over time that can affect the organisation’s ability to adapt to change and initiate innovative developments. On the other hand, in a longitudinal study of 463 semiconductor firms, Leiblein and Madsen (2009) found that small firms can benefit more from their operating experience, because they are more in tune with the elements of the process. These authors state that although previous attention has been given to firm size and its link with innovation, there is also a renewed focus on the outputs, measures and context of innovation.

3.5.1 Innovation in Service Firms

When considering innovation, it is important to assess the context in which it is being examined. Innovation in service firms is very different to innovation in manufacturing firms. Cainelli, Evangelista and Savona (2006) state that service firms have long been deemed technologically backward, with innovation playing a minor role in explaining the performance of the sector. Mansury and Love (2008) describe the level of research on service sector innovation as limited. This is due to the huge focus on the merits of innovation within manufacturing firms and a consequent lack of focus of innovation in service-led industries. Cainelli, Evangelista and Savona (2006) state that in order to study the relationship between technological change and economic performance in service firms, a more comprehensive and different means than what is used in manufacturing is required. Manufacturing firms emphasise R&D capabilities while service providers stress soft skills, such as 'workforce skills and collaborative interactions' (Mansury and Love, 2008:52). Data has shown, in the case of services, that R&D and patents only play a minor role, because their innovation activities tend to be more incremental in nature. In Tether's (2005) study of 3,000 firms, he found substantial differences in how manufacturing and service firms innovate. He cites that service firms are more likely to collaborate with suppliers and customers, while manufacturing firms stress the importance of R&D spend and links with universities. Service industries are likely to focus on soft skills, whereas manufacturing industries value the more technical skills. Tether (2005) states that service firms are known to

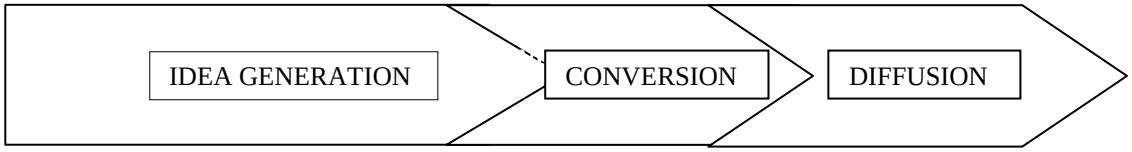
constantly adapt and change their offerings to provide solutions to changing and differentiated customer requirements. This often leads to the co-production of services, where the client and firm work together to create an innovative and dynamic solution, which makes it difficult to measure the true source of the innovation activity. Due to the uniqueness of the stakeholder inputs of service firm innovation, Coombs and Miles (2000) state that innovation activities in service firms require newer measures and approaches to capture innovation than those developed to measure innovation in manufacturing firms.

3.5.2 Capturing Innovation

Camelo Ordaz, Hernandez-Lara and Valle Cabrera (2005) devised three stages of innovation that illustrate the multitude of definitions of the concept. These are: 'innovation in process', which examines the creative activities in motion, 'innovation in results', which examines the creation of new products or patents in the business and 'innovation status', which examines innovation as a built-in attribute of the organisation. Bantel and Jackson (1989) describe these three separate approaches as different aspects of the same reality, which do not necessarily denote a linear process, but their segregation allows ease of examination. West (2002) describes innovation as a two stage process often referred to as ambidextrous. The first involves exploration, where employees can take risks, experiment and enjoy flexibility while uncovering new and varying phenomena of interest. The second is where employees work within an environment where

exploitation is valued and where they are encouraged to follow rules that enhance efficiency (Shipton et al., 2006:4). In his study of innovation, Janssen (2000) use nine items based on Scott and Bruce's (1994) scale for individual innovative behaviour in the workplace. Janssen (2000) assigned three items to measure idea generation, three to idea promotion and three to idea realisation. Idea generation is described as the production of novel ideas in any domain (Amabile et al., 1996). These include solving work-related problems, as well as awareness of contextual drivers such as emerging trends that force the generation of novel ideas. Idea promotion involves championing the idea to colleagues and allies in order to build support for it (Galbraith, 1982). Idea realisation is the later stage, and usually involves the generation of a prototype that can eventually be replicated for mass production, if necessary. These three stages of the innovation process are reflected in Figure 3.1, which views innovation as an end-to-end process, where the weakest and strongest links can be observed through assessing each link in the chain.

Figure 3.1 Stages of Innovation

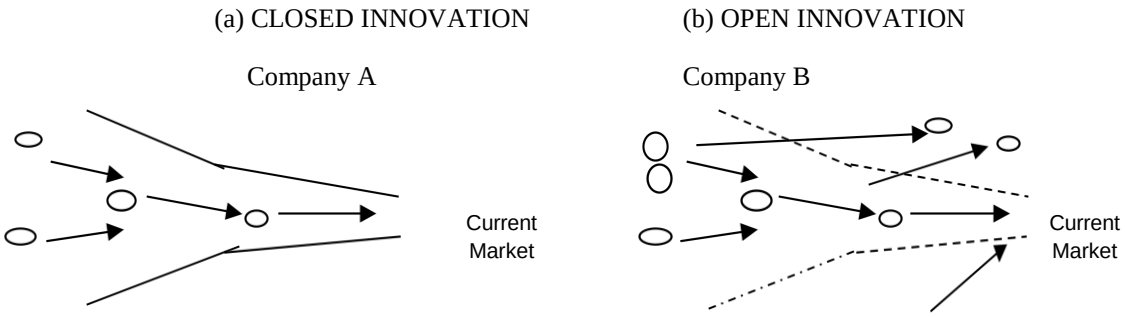


	In-house	Cross Pollination	External	Selection	Development	Spread
Process	Creation within a unit	Collaboration across units	Collaboration with parties outside the firm	Screening and initial funding	Movement from idea to first result	Dissemination
Key Questions	Do people in our unit create good ideas on their own?	Do we create good ideas by working across the company?	Do we source enough good ideas from outside the firm?	Are we good at screening and funding new ideas?	Are we good at turning ideas into viable products, businesses and best practice?	Are we good at diffusing developed ideas across the company?
Key performance indicators	Number of high quality ideas generated within a unit	Number of high quality ideas generated across units	Number of high quality ideas generated from outside the firm	% of all ideas generated that end up being selected and funded	% of funded ideas that lead to revenues; no. of months to first sale	Penetration in desired markets, channels, customer groups

Source: Janssen (2000)

One of the key aspects of this approach to measuring innovation activity is the importance of not becoming obsessed with core innovation capabilities, but to pay attention to the weak links in the chain. Hansen and Birkinshaw (2007) state that a company's capacity to innovate is only as good as the weakest link in its innovation value chain. A similar approach to innovation is the open approach, described by Chesborough (2003), which examines innovation in the eco system outside of the company boundaries. This is displayed diagrammatically in Figure 3.2.

Figure 3.2: Model of Closed and Open Innovation



Source:Chesborough(2003)

The models demonstrate a closed innovation process for company A, which is wide in terms of idea generation and narrows at the idea commercialisation stage. For company B, the open innovation process illustrates a permeable funnel, with ideas being introduced right throughout the innovation process. The open model of innovation is used by many organisations, the most evident of which is Procter and Gamble's 'Connect and Develop' model of innovation (Huston and Sakkab, 2006). They use knowledge sharing across teams, where networks are established to explore and create innovation opportunities. The main merits of the open innovation model are the reduction in cost for the firm, as R&D investments can be spread or shared across collaborators. It also allows smaller firms access to sophisticated technology that may be prohibited by internal resource limitations (Freel, 2005). Dundas-Hewitt and Love (2008) state that such alliances enable firms to cope with external uncertainties through the internalisation of a range of resources, while strengthening supply-chain relationships. This spread of knowledge across teams can build trust and mutual learning (Creed et al., 1996).

Laursen and Salter (2006) refer to an open innovation framework that uses a wide range of external actors and sources to help achieve and sustain innovation. This framework is called the innovation value chain (IVC), which is 'a diagnostic tool for companies to access innovative capabilities' (Hansen and Birkinshaw, 2007; NESTA, 2009:14). The IVC allows these companies to examine the distribution of their innovative abilities throughout the firm and captures those aspects of innovation that are neglected by traditional innovation measures. This provides the researcher with a front-to-back view of the three valid components of innovation: 'accessing', 'building' and 'commercialising innovation'. This measure also provides a useful lens through which to examine the role of stakeholders in architectural firms in the generation, conversion and diffusion of ideas. Each of these components will now be examined in more detail.

3.5.3 Accessing Innovation

'Accessing innovation' concerns the extent of in-house open innovation activities with other organisations. This may include the firm's research and development activities, or the use of external knowledge sources. This aspect of the chain highlights the sector's 'level of engagement with open innovation activities' (NESTA, 2009:15). Such engagement is described throughout the literature as a driver of innovation. McDonough (2000) found that co-operative, cross-boundary and cross-cultural interaction has a positive outcome on innovation activities. This is illustrated in the

multinational firm Procter and Gamble's (P&G) model of innovation, which involves the circulation of innovation project briefs to their global network of individuals and institutions. This allows the company to tap into ready-made solutions, which save time and money on in-house innovation. Bartlett and Goshal (1989) describe this process as 'managing across borders'. Universities and government laboratories are often willing to work closely with private corporations to complement each other's knowledge and enhance both intellectual property and people. P&G proposed to acquire 50% of future innovations externally. The company re-orientated its existing 7,500 researchers to work with external collaborators and move away from the 'Not Invented Here' syndrome (Huston and Sakab, 2006). As a result, the company's innovation success rate doubled, and the cost of innovation as a percentage of sales fell by 1.5%. However, one limitation of open innovation, which has not been dealt with, is the ownership of the intellectual capital arising from the strategy. Also, Laursen and Salter (2006) found that the 'open model of innovation' is subject to decreasing returns, indicating that there is a stage where ongoing knowledge-seeking becomes unproductive. In addition, open innovation takes time and an ability to build trust and understand norms and habits with external organisations.

However, the benefits of collaboration have been extensively examined by authors such as Cassiman and Veugleler (2002), who discovered a complementary relationship between a firm's internal research and

development, and the benefits of external knowledge sources. Additionally, Mansury and Love's (2008) study of 206 US firms found that external linkages with collaborators had an overwhelmingly positive effect on firm performance. Leiponen (2005) supported this view in a study of Finnish firms where external knowledge sourcing from customers and competitors affected the levels of innovation in comparison to those of R&D that had no discernible effect. Laursen and Salter's (2006) study of managers in manufacturing firms found that openness to outside sources allows firms to deepen the pool of technological knowledge open to them. Roper and Dundas-Hewitt (2004:3) describe innovation in services as 'best seen as a form of collective or collaborative problem solving, in which networks of companies work together to meet a need or opportunity'. The importance of external collaborators as a source of innovation is very relevant to the architectural sector. Yet the qualitative findings of this study suggest that the sector has little formed capacity to capture this knowledge. Although the literature encourages such open innovation, there is very little mention of the human skills required in the building of such relationships. Tapping into the insights and knowledge of end users, competitors and customers requires innovators to work with unfamiliar people and to generate ideas of mutual benefit. This requires building extensive personal networks where knowledge can be combined and ultimately translated into a service that meets client requirements and is cost effective for the firm (Hansen and Birkinshaw, 2007). In addition, innovation managers may need to

emotionally assess the benefit of external relationships, because collaborations may result in no valuable outcome.

3.5.4 Building Innovation

'Building innovation' is the translation of knowledge investments into innovation inputs in the form of products or processes. Creativity has strong associations with innovation activities in the workplace and has been defined as the production of novel and useful ideas or solutions (Amabile, 1988; Oldham and Cummings, 1996; Zhou and George, 2003). However, simply being creative is usually not the solitary goal of organisations; this creativity must help generate new products and services, take advantage of opportunities and enhance existing organisational processes (Rego et al., 2007). Creativity is often generated by work-related problems that employees are confronted with (Drucker, 1985), and such creativity is the starting point for building innovation and is critical for organisational success (Zhou and George, 2003). Innovation, change, learning, high performance and commitment can be achieved when organisations take advantage of the creative potential of their employees (Woodman, Sawyer and Griffin, 1993). In addition, the generation of new products and technology can enhance market share and stock market value, as well as ensuring ongoing survival (Banbury and Mitchell, 1995; Chaney and Devinney, 1992). Roper et al. (2008) state that in order to generate innovation, employers need people who can combine technical abilities with a wider set of skills, such as team working and communication abilities,

which will allow them to work across a range of activities within companies. Employees who are encouraged to question and challenge existing systems and processes are engaging in innovative work behaviours (IWB). These behaviours are instrumental to the successful building of innovation across both service and manufacturing firms. Scott and Bruce (1994) identify the root of innovation as those creative ideas of individual groups who generate, discuss, modify and simply realise these ideas. Although the literature advocates the benefits of building innovation across internal and external stakeholders, there is little mention of the behaviours required to manage the idea conversion process among these groups.

3.5.5 Commercialising Innovation

'Commercialising innovation' examines the exploitation of innovations in the market place, and is recorded as productivity or increased sales. This can include spend on branding and the use of patent or intellectual property protection. Within this aspect of innovation, sales and marketing skills are very important in order to maximise the commercial returns from innovative activity (NESTA, 2009). Roper, Dundon and Love (2008) describe this stage as the process of exploitation in which the innovation is translated into productivity or sales gains. Hansen and Birkinshaw (2007) refer to this stage as the idea diffusion stage, where firms must get the relevant stakeholders to spread their offerings to desirable customers across geographical locations. This requires strong leadership behaviours, such as awareness and understanding of customer needs, if trust is to be gained and relationships

built with the customer. Hansen and Birkinshaw (2007) provide an example of a company whose engineers were offering strong innovative ideas, but became frustrated because the conversion of the idea into a tangible output failed to materialise due to the weaknesses in the final link in the chain. These are known as diffusion poor companies who have trouble 'monetising its good ideas' (2007:125). Such a weak link in the commercialising component of the IVC can be detrimental to the realisation of returns on investment and a failure to build or keep good customer relations. Maintaining good relationships in the architectural sector is important because client referral is a core mechanism for generating future work.

The IVC offers a comprehensive means to study innovation, and is particularly relevant in the study of service firms that are most likely to collaborate with suppliers and customers (Tether, 2005). Tether suggests that cross functional interaction is necessary for communication during the innovation process, and this internal and external sharing of information is critical for the success of projects in the firm (Pinto and Pinto, 1990). McDonough (2000) states that such interaction has a strong impact on the success of innovation activities, while Gadrey et el. (1995) argue that economic and innovation theorists have failed to consider the soft skills (motivation, communication, human resource management) and hard skills (technology, equipment) that are necessary leadership skills to facilitate successful accessing, building and commercialising innovation in service firms. Roper, Dundas and Love (2008) acknowledge that social, human

relations and communication skills are necessary attributes to encourage a more interactive and social workplace that is conducive to innovation. Skills such as leadership, team-working and networking enable employees to work flexibly across a range of departments and external collaborators during the innovation process (2008:19). The skills required to lead a climate of innovation that encourages accessing, building and commercialising innovation in service firms are now examined.

3.5.6 Leading Innovation

Research demonstrates that there are a number of elements which need to be considered when assessing the drivers of innovation. The social and environmental aspects required for generating innovation are dealt with throughout the literature (Bain et al., 2001; Cainelli, Evangelista and Savona, 2006; Hull, 1988; Mansury and Love, 2008). However, promotion of innovative activities is not something that can be formally built into employee contracts, even if the role is in R&D. Leaders and managers cannot extract creativity or idea generation through force. Organisational culture, driven by leadership behaviours, can consciously, and often subconsciously destroy innovative work behaviours. The reason for this is that most innovative behaviours are purely discretionary and occur when the basics of the psychological contract and meritocracy are satisfied, and when employees feel motivated to be innovative (Ramamoorthy et al., 2005). Gilley, Dixon and Gilley (2008) suggest that leaders can sabotage innovation and effective teamwork by creating hostile environments,

communicating poorly, setting unrealistic expectations and being coercive. Roper et al. (2008) argue that in order to generate innovation, employers require people who can combine technical abilities with a wider set of skills, such as team working and good communication that allows them to work across a range of areas within companies. Employee willingness to innovate is explored in various management theories, such as 'continuous improvement' schemes (Boer and Rijnders, 1998), 'Kaizen' (Imai, 1985) and 'organisational learning' (Senge, 1990). The environment in which firms compete can also play a part in determining innovative behaviours, because hostile external environments usually generate more demands for innovation (Myers and Marquis, 1969). Peters and Waterman (1982) found that strict bureaucracy and rational organisational models breed complex and rigid work environments and result in reduced business success and increased change resistance. Their research examined successful firms which demonstrate that organisational and individual flexibility leads to product innovation and enthusiastic employees. They found that these merits were achieved by encouraging risk taking, spontaneity and experimentation. Material and intrinsic rewards, which include: long-term job security, material and symbolic rewards for risk taking, respect, peer support and support networks, are also thought to encourage innovation (Fineman, 1996). An assessment of the leadership requirements in accessing, building and commercialising innovation are now examined.

In terms of accessing innovation, Boer et al. (2001) advocate a collaborative management approach that facilitates knowledge transfer and learning across partner organisations. This may involve abandoning traditional management views of regarding every firm as a competitor, and adopting new approaches where they are seen as collaborators. In order to access this innovation, leaders must have the ability to identify positive or negative moods, as well as stimulate and coach employees to persist and use their social networks to establish compromise with others through team work (Zhou and George, 2003). This encourages intrinsic motivation, which is a powerful tool for developing creativity. Intrinsically motivated employees tend to be curious and learning oriented, cognitively flexible, willing to take risks and overcome challenges and obstacles. One such leadership behaviour, which could be useful during moments of frustration during the creative process, is emotion management, which ensures that each stakeholder is heard and respected. Leaders with low levels of emotion management can easily become frustrated and irritated, believing that employee creativity is a challenge to their own authority and credibility (Staw, 1995). For some employees, there may be a level of adjustment required for new innovative processes, which can often require renewal and restructuring of cognitions and emotions, in order to enhance collaborative activities (Anderson et al., 2004). On the one hand, technological developments in innovation have minimised the need for human interaction, but on the other, these same advances make the perception, understanding,

assimilation and management of emotions even more critical for innovation success (Yuvaraj and Srivastava, 2007).

In order to build innovation, one of the main dichotomies with which leaders must wrestle with, is control and creativity. Both are necessary for success, but problems can arise if one is more dominant than the other (Rego et al., 2007). However, if standards and controls are too aggressive, then creativity is stifled. This can lead to frustration and irritation, which can reduce scope for creativity. Also, the innovator can develop negative feelings towards co-workers and supervisors during complex innovative initiatives, which can lead to frustration, antagonism, and animosity within a team (Janssen et al., 2004). If, on the other hand, leaders have high emotional intelligence, they can manage negative emotions and guide employees through difficult times (Zhou and George, 2003). Hage and Dewar (1973) found that the values held by the top management team also affect their organisation's subsequent level of innovation. Bantel and Jackson (1989) conclude that innovation is more strongly associated with team composition than with either organisational size or location. Gilley et al. (2008) state that leadership skills, such as communication and motivation, are closely related to the ability to manage innovation. EI is said to play an important role in creating norms between employees and leaders, where employees feel free and committed to channelling creativity through to performance, while leaders create the environment to nourish the creative and social capital of the organisation (Rego et al., 2007). The role of EI in

this instance will allow the innovator to manage those negative feelings, and ultimately achieve a positive outcome during the building innovation phase. Convincing employees of the anticipated benefits of innovative work practices can be emotionally taxing, and may give rise to stress reactions (Janssen, Van de Vliert and West, 2004). This can also be helped by high levels of EI among the innovators, or their supervisors, who can help channel these emotions into positive outcomes.

In order to commercialise innovation, group cohesiveness or reflexivity is necessary to exploit innovation. Strong interpersonal skills are vital for leaders in developing appropriate networks for commercialising innovation. Organisational structures must exist to facilitate the sharing of knowledge and its ultimate translation. This, combined with strong relationships between internal and external stakeholders, is necessary in order to make tough decisions on whether to terminate or alter the innovation at launch stage. The leader's ability to manage the emotions of key stakeholders plays a vital part in determining the success or failure of a project. The ability to rationalise the personal and emotional feelings occurring during the lengthy innovation process must be recognised and managed to ensure its success within the market. For successful projects, service firms must have the ability to form sustainable relationships with their customers, and establish trust and recognition. In architecture, this involves firstly an ability to communicate a firm's unique abilities, and secondly, a capacity to build a relationship with potential customers who may be unacquainted with the

sector. The lack of advertising and dependence on referrals means that architects must be willing to extensively network, using strong communication skills and an ability to manage client fears regarding a new project. The management of this relationship requires patience and a keen understanding of the lifestyle and potential risk aversion of the client. It is often the architect who has to soothe client anxiety when embarking on a project, especially those that are domestic or personal to the client. There is scant literature examining the role of leadership behaviours at such an integral stage of the innovation process.

A review of the innovation literature suggests multiple definitions, and offers a framework with which to examine innovation in the architectural sector context, along with some evidence of the importance of leadership behaviours to create a climate for innovation. The research gaps relating to these leadership behaviours will now be examined and a research question and hypotheses are proposed.

3.6 Research Gaps

This chapter provides an extensive review of the literature and points to a number of gaps in the literature that will form the basis for the quantitative enquiry. The main research gaps relate to EI and innovation. The existing literature concerning EI has grown significantly in recent years. A number of studies have been published in high ranking peer-reviewed journals, which point to links between EI and task performance of teams,

transformational leadership and interpersonal effectiveness. However, there is a distinct lack of empirical data linking EI with measures of firm performance such as innovation, especially in small firms. While the innovation literature suggests a positive outcome in combining leadership behaviours and innovation, there is little evidence to establish a link between the role of leadership EI and innovation. Elenkov, Judge and Wright (2005) state that strategic leadership and innovation strategy are essential for maintaining competitiveness in the current climate. Terziovski and Morgan (2006) state that exploring opportunities requires a disciplined and strategic management approach. Woodman, Sawyer and Griffin (1993) suggest that if organisations take advantage of, and manage the creative potential of their employees, innovation, change, learning, high performance and commitment can be achieved. Omta and Bouter (1997) suggest that if organisations are to be innovative, scientific performance goals must be met, along with the satisfaction and motivation of those who are innovating. They refer to this as socio-technical performance. Laursen and Foss (2003) point to the lack of literature and empirical research on how these socio-technical performances are managed, and how they affect innovation performance. Finkelstein and Hambrick (1996) and Drucker (1985) all recognise that strategic leaders are the key instigators of decisions that affect the innovation process. There is also evidence suggesting the importance of management practices in the innovation activity process (Kets de Vries, 1996; West et al., 2003), and some deciding research on the role of leader behaviours on supporting or suppressing innovation (Oldham and

Cummings, 1996). These behaviours include: transformational leadership, developmental feedback, supportive supervision, and controlling supervision (Rego et al., 2007). However, Zhou and George (2003) state that little theory has been developed to highlight the roots of these behaviours, while Terziovski and Morgan (2006) suggest there is a distinct lack of empirical research that highlights their importance in the management of the innovation process.

Following an extensive review of the EI, leadership and innovation literature, it is argued here that leader EI would greatly enhance the outcomes of the three components of innovation offered by the IVC framework. Firstly, the role of leader EI in accessing innovation, which examines the formation of essential relationships between departments and suppliers to generate ideas and knowledge, would be greatly assisted by strong emotionally intelligent behaviours in the formation of these relationships. Leader EI could also play an essential role in building innovation, because the creative periods during the innovative process can often involve emotions such as creativity or frustration, which need to be recognised and controlled to ensure a successful building phase. Finally, the role of leader EI during the commercialising process of innovation is vital for the understanding of client emotions and managing the execution of the innovation process. In addition, the commercialising of the firm's outputs, especially in the architectural context, requires strong communication and networking abilities with potential clients to build and sustain relationships.

Overall, there has been little empirical research of the role of EI across these components of innovation, and their exploration aims to uncover valuable insight.

3.7 Research Question and Hypotheses

Following an assessment of the literature on emotional intelligence, strategic leadership and innovation, and a review of the most effective research frameworks for enquiry, the following research question and hypotheses for the quantitative study are now proposed. EM is selected as a component of EI with which to examine the relationships. The reasons for the selection of this component are explained in Chapter 4. The main research gap will be assessed using a direct effects model to examine the effects of leader EM on the three components of innovation, namely, accessing, building and commercialising innovation. The following research question will examine these relationships.

Research Question 1a, b and c:

1(a) Is leader emotion management positively related to accessing innovation?

1(b) Is leader emotion management positively related to building innovation?

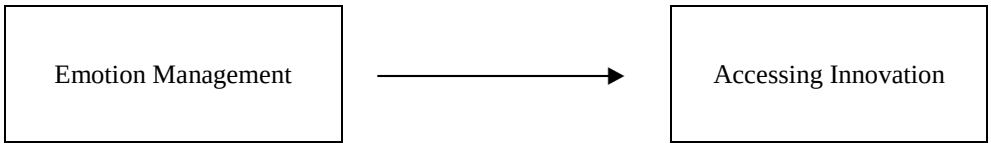
1(c) Is leader emotion management positively related to commercialising innovation?

In order to answer all parts of research question 1, some hypotheses will test these relationships.

Hypothesis 1a

H1a: Leader emotion management will be positively related to accessing innovation in architecture firms. Figure 3.3 depicts the proposed relationship for H1a.

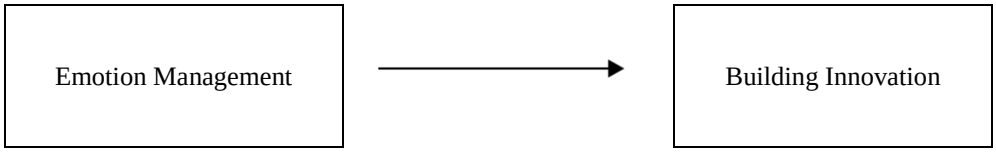
Figure 3.3 Exploring the relationship between Emotion Management and Accessing Innovation



Hypothesis 1b

H1b: Leader emotion management will be positively related to building innovation in architecture firms. Figure 3.4 depicts the proposed relationship for H1b.

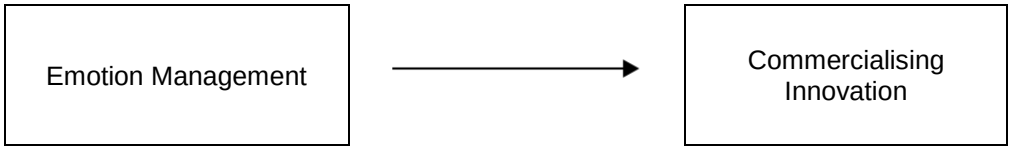
Figure 3.4 Exploring the relationship between Emotion Management and Building Innovation



Hypothesis 1c

H1c: Leader emotion management will be positively related to commercialising innovation in architecture firms. Figure 3.5 depicts the proposed relationship for H1c.

Figure 3.5 Exploring the relationship between Emotion Management and Commercialising Innovation



The next chapter presents the methodology to explore the research question and hypotheses.

CHAPTER FOUR

Methodology

This chapter outlines the philosophy behind the two methods chosen to answer the research question. Firstly, an inductive study using qualitative methods provides some research context for the study. Secondly, deductive methods will be used to quantitatively test the hypotheses that reflect the research gaps on EM and innovation. This section discusses the sample selection, pilot study, questionnaire structure, survey procedure and offers some descriptive statistics. The chapter concludes with a review of the research process that includes the measures, along with their respective reliabilities and validities.

4.1 Research Philosophy

This research uses a quasi grounded theory approach to explore the business landscape of contemporary architectural practices. This approach is exploratory in nature, and consequently, grounds theory in reality (Glaser and Strauss, 1987). Unlike other qualitative approaches that are highly descriptive in their intent (for example, phenomenological analysis), grounded theory generates a set of integrated concepts that set the foundation for a theoretical exploration of the research context (Corbin and Strauss, 1990). There are a set of guidelines that must be followed in the data collection in order to fulfil a grounded theory approach. The first guidelines are the sources for the data collection, which includes:

interviews, observations, government documents, newspapers, letters and books or anything that sheds light on the question under study. The second guidelines relate to the appropriate collection and analysis of the data (Corbin and Strauss, 1990:4). The coding and analysis of the data must also use a series of empirical and conceptual comparisons in the existing literature. These will provide context for a quantitative approach that will scientifically examine the relationships between the emerging theories. Grounded theory approach will serve as 'the backbone of this researcher's story' (La Rossa, 2005:838).

4.2 Inductive Research Enquiry

There are a multitude of means to collect qualitative research, which include: biography, phenomenology, grounded theory, ethnography and case studies (Creswell, 1998). All of these methods provide a range of ways to capture varying aspects of the qualitative data source. This research will follow a grounded theory approach to gain insight into the business processes in the architectural sector. Semi-structured interviews are used to explore the contemporary landscape of the architecture profession and offer a rich research context to the study. Burgess (1984:102) describes these types of interviews as 'conversations with a purpose'. Potter (1996:96) defines interviewing as a 'technique of gathering data from humans and getting them to react verbally'. Semi-structured interviews are usually characterised by a relatively informal style where the researcher has a range of topics they wish to cover, in order to elicit further information on those

items. Seidman (1990) advocates a sequence of three interviews with each participant to elicit a true depth to the process; however, time and resources of the research study do not allow such scope. The survey instrument contains questions that varied according to the experience level of the interviewee, but maintains a commonality of enquiry. These questions are listed in Appendix A. The aim is to gather a range of perspectives from different levels of the firm, so as to create a picture of the business processes of contemporary architectural firms. Some demographic characteristics, described by Dearbon and Simon (1959) and Vroom and Pahl (1971), including underlying experiences, attitude and perspectives, were assessed. Additional information on positions, work activities and key challenges faced by each interviewee in their sector was assessed. One example of such questions concerned teams. Senior partners were asked how they managed their teams, and those who were in teams were asked how they were managed. The collection of the data follows Glaser and Strauss' (1987) guidelines, where the systematic and sequential collection of the data and analysis allows the researcher to evaluate the relevant aspects of the topic as soon as they are perceived (Corbin and Strauss, 1990). Kvale and Brinkmann's (2009) seven steps to conduct qualitative interviews are also followed, which include: thematising, designing, interviewing, transcribing, analysing, verifying and reporting. The analytical approach follows the procedure outlined by King (2004) of a template analysis, where the researcher produces a list of codes representing themes based on the research objectives and the interview questions (Symon and Cassell, 2006).

In terms of reliability, this study followed Mason's (1996) assessment of reliability in qualitative methods. This includes that the data generation is appropriate to the research question, as well as conducting the qualitative survey with honesty, carefulness and accuracy. In terms of validity, the logic of the method is reflected in the questions asked by the interviewer. The study itself is mostly concerned with identifying issues, making sense of the context, and stimulating discussion around the business processes of architectural practices.

4.2.1 Sample Selection

The sample for the inductive study is selected based on the breadth of experience of the individual and the variety in firm size and purpose. The chosen sample helps to understand the process rather than to represent the population (Mason 1996). The sample consists of four large firms, three small firms and one third level institution. Nine architects of varying demography and position were interviewed. Polkinghorne (2005:140) describes this type of selection as a choice in which 'the researcher can learn substantially from the experience', while Patton (1990) describes this type of selection as information rich that one can learn a great deal from. The diversity of interviewees allows the researcher to capture the experience of the participants, both as managing directors and as subordinates, and provides multiple accounts from varying perspectives, which will 'adequately reflect on their experience and describe it' (Polkinghorne, 2005). Six of the interviewees were male, and three were female. The nine

individuals were selected through networking and profiling of suitable subjects to help inform the study. A profile of the respondents is outlined in Appendix B. The individuals were informed about the purpose of the study by letter and email. Many of the interviewees expressed an interest in the topic, and were happy that it would contribute to a greater understanding of the difficulties facing architecture firms. The majority of interviews were carried out at the interviewee's place of work, with two being conducted in more informal settings. The duration of each interview was between 40 and 60 minutes. Because ethics are high on the agenda for researchers, the importance of producing an ethical research design is just as important as the production of compelling outcome (Mason, 1996). Therefore, prior to commencing the study, an application that outlined the detail of the study, the involvement of the participant, the benefits to the participants and confidentiality was submitted to the Ethics Committee of Dublin City University, in order to ensure the protection of the University and the participant. The application and approval documents are listed in Appendix C and Appendix D. Permission was granted to record most interviews, which reduced the amount of writing by the interviewer, and eliminated the distraction of note taking from the interview experience. Following the ethics committee guidelines, the transcripts do not refer to the participants by name, and the files containing the interviews are password protected. The findings from the inductive study are discussed in Chapter 5.

4.3 Deductive Research Method

The next section describes the research process of the deductive method, which examines the effects of leader emotion management on the three components of innovation. The sample selection is explained, and the pilot study and the Dillman (2007) approach to administering the survey are discussed.

4.3.1 Sample Selection

For the deductive study, members of the architecture profession were selected from the RIAI official directory of architects. The information in this directory is held by the Institute and is generally not available to the public. This represents 100% of all firms registered in the Republic of Ireland and Northern Ireland.

4.3.2 Pilot Study of Questionnaire

To improve the validity of the survey (Robson, 2002), a pilot was designed containing the independent and dependent variables of the research design. A pilot survey was sent to a selection of 12 architects, some of which had been interviewed, and others who had not. The purpose of the pilot was to ensure clarity and accuracy in the design phase of the survey instrument. Eight (66%) responses were returned. Due to the small sample size, statistical analysis could not be performed. However, some qualitative findings were obtained, and comments from the pilot survey were

incorporated into the main survey instrument. These related to the phrasing of questions on the language style of the sector. The inability to answer some of the questions, and the use of alternative or preferred answers as solutions to the scenarios presented, was also noted. As a result, some of the questions were slightly adjusted.

4.3.3 Questionnaire Structure

An eight page questionnaire, containing 61 questions spread over six sections, was designed, and includes questions on the following: Demography (8 questions), The Practice (4 questions), Innovation (19 questions), Strategic Approach (22 questions) and Managing Emotions (8 scenario type questions). A copy of this survey can be found in Appendix E.

In the first two sections, the respondents were asked to what extent they agreed with the items by ticking the appropriate answer. The third section combined ticking the appropriate answer with open ended questions around percentages and monetary figures. Some questions used a seven point Likert scale, from 1 = 'strongly agree' to 7 = 'strongly disagree'. The fourth section used some questions from a Likert scale from 1 = 'very effective' to 5 = 'very ineffective'. Some questions on firm size, sales turnover and number of architectural awards offered a choice of time points for measures, both in 2010 and 2007. This comparison offered an assessment of the profession in Ireland during a recessionary period (2010) and a boom period (2007).

4.3.4 Survey Preparation

In order to ensure maximum participation in the study, Mr. John Graby, Director of the RIAI, agreed to endorse the study to his members. In a crucial and significant move, Mr. Graby offered 0.5 unstructured 'Continuous Professional Development' (CPD) points to any architect who completed the questionnaire. CPD is the term used to describe lifelong learning or continuing education within certain professions. The main aim of CPD is to ensure professionals are kept up to date in their field. A copy of the questionnaire was sent to each managing partner or director in autumn 2010. The time taken to complete each questionnaire was estimated at 20 minutes.

4.3.5 Sampling Procedure

The survey procedure follows Dillman's (2007) Tailored Survey Design Method. This method has five steps: invitation letter, cover letter with questionnaire, acknowledgement and reminder postcard, first replacement questionnaire and final letter with second replacement questionnaire. Steps four and five, which involve re-administering the questionnaire on two occasions, were modified to lessen the environmental impact of administering large amounts of paper. This is a huge concern for architects in their design and administration activities. Therefore the survey procedure took the following steps:

1. Invitation email

   An invitation email (Appendix F) was sent to RIAI registered architects, informing them of the study, offering CPD points in return for participation.

2. Cover letter with questionnaire

   A number of days later, a cover letter (Appendix G) and a questionnaire (Appendix E) were mailed to respondents. A prepaid and return envelope was provided.

3. Acknowledgement and reminder postcard

   Two weeks later, a postcard (Appendix H) was sent to thank the respondents who had returned the completed questionnaire, and served as a reminder to those who had not filled in the questionnaire.

4. Email with electronic link to survey

   One month after the initial survey had been administered; the RIAI sent a thank you email with a reminder to fill out the survey. An electronic link to the survey was included for the first time, and members were encouraged to fill in the survey online or return the hard copy by post (Appendix I).

5. Letter with first replacement of questionnaire to targeted firms

   Five weeks after the initial survey, about 60 large firms were selected to receive a second copy of the questionnaire, based on the fact that a response had already been received from at least one of the members of the firm. The requirement for multiple responses from one firm originated from a proposed multi-level study that was later removed from the thesis. A letter outlining the importance of receiving a firm level response was sent, with an additional promise of a company report if they responded to the survey (Appendix J).

6. Thank you letter and CPD points

   Those who had filled out the survey received a letter thanking them for their participation, with details on how they could use the letter to obtain their CPD points. They were also informed that a report, which would outline the results, would be emailed to every registered architect in Ireland.

4.3.6 Survey Response Details

Surveys were mailed to the managing director and/or senior partner of 611 Irish registered architect firms. This represented 529 small firms and 82 large firms. 51(8%) firm surveys were returned indicating that they were no longer in existence at the RIAI registered address. This resulted in a final sample population of 560 firms. In total, 210 individual surveys from the most senior respondents were used to represent 210 firms (37%). Table 4.1

provides a timetable for the sequence of the survey returns following Dillman's (2007) steps.

Table 4.1 Survey phases responses

Dillman's Steps	Phase	Return date	Number Undelivered	Number Completed
2	Mail survey	16 November 2010	41	41
2	Mail survey	18 November	5	18
2	Mail survey	22 November	0	12
2	Mail survey	23 November	4	13
2	Mail survey	25 November	0	10
3	Postcard reminder	29 November	0	13
3	Postcard reminder	30 November	0	8
3	Postcard reminder	06 December	0	11
3	Postcard reminder	07 December	0	12
3	Postcard reminder	09 December	1	14
4	Online survey	10 December	0	37
3	Postcard reminder	15 December	0	8
5	Target Firms letter	22 December	0	7
5	Target Firms letter	14 January 2011	0	6
		Total	51	210
		Final Sample size		560
		Response rate		37%

Following Dillman's (2007) survey approach, the second phase, using the mail survey, yielded 94 usable surveys. The third phase of the sampling procedure, using a postcard reminder, yielded a further 66. The fourth phase offered architects an online link to the survey, which yielded 37 completed surveys. The fifth phase targeted large firms who had yet to respond, and yielded an additional 13 responses. This process took almost two months to complete. The pencil-and-paper version yielded more results than the electronic alternative.

Table 4.2 provides frequency statistics of the typical firm size of those responding.

Table 4.2 Firm size in 2007 and 2010

Total No. of Employees	2007 (%)	2010 (%)
1	27	45
2	9	14
3	13	14
4	6	8
5	7	5
6 -10	14	8
11-20	12	4
21 +	12	2

In 2010, the sample mostly comprised sole trader architectural firms, with 94 (45%) firms having just one employee. Twenty-nine (28%) firms had either two or three employees, which would be representative of a small firm in the profession, while 10 (5%) had five employees. The remaining sample, which documented medium to large firms with between six and 90 employees, made up the remaining 14% of firms. Therefore, the sample was mainly representative of single owner firms, or small firms with between one and three employees. According to the RIAI, this is a representative profile of the architectural sector in Ireland in current times. Information from the surveys indicated a dramatic change in firms between 2007 and 2010. In 2007, there was an equal distribution of large firms with over five employees (51%) and those with less than five (49%). This was reflective of the market demand for large scale architectural firms who mostly focused

on substantial commercial and housing developments, which have since dramatically declined. This has resulted in the reduction of the size of architectural firms to cut costs and ensure survival in the current economic climate.

4.3.7 Descriptive Results

This section provides an overview of the descriptive results, which includes the demographics of the respondents, firm performance and size. Of the individual respondents, 195 (70%) were male, and 45 (30%) were female. In terms of education, 47 (11%) respondents had a Masters Degree qualification, while 165 (59%) had a Bachelors Degree. Eight (3%) respondents had an Advanced Certificate, and the remaining 14 (5%) had various combinations of qualifications including a Diploma in Architecture, Members of RIAI and RIBA, and postgraduate Diplomas.

In terms of levels of responsibility across the sample, a profile of respondents is outlined in Table 4.3.

Table 4.3 Profile of respondents

Position	%
Managing Principal/Director	78
Partner	10
Architect	10
Other	2

The majority of respondents, numbering 164 (78%), identified themselves as managing principals or directors who had sole responsibility for managing the practice. 21 (10%) identified themselves as partners, while a further 25 (12%) selected the term architect or another non-management title.

Table 4.4 provides the means and standard deviations for firm age, size, revenue, education and tenure.

Table 4.4 Means and standard deviation (SD) for descriptive statistics

Variables	Measures	Mean	S.D
Firm Age	Years since founding	20.25	17.086
Firm size in 2010	Number of Staff 2010	4	8.184
Firm size in 2007	Number of staff 2007	10	21.92
Sales revenue in 2010	Euro (Sales Turnover)	320K	837K
Sales revenue in 2007	Euro (Sales Turnover)	867K	2.11M
Education	Years (Avge Post Sec. Educ)	6.51	2.86
Company tenure	Years	16.71	11.05
Industry tenure	Years	26.26	10.77

Listwise deletion method was employed to deal with missing data, which reduced the sample size from 210 to 170. K=thousand, M=million.

205 (98%) practices were Irish owned; the remaining practices were joint Irish and/or foreign owned. 40% fewer employees were in employment in 2010 than in 2007. One hundred and nineteen (57%) firms provide a range of services to clients that included designs, project-build management, urban

planning and other services. Some of these services included planning and conservation expertise, environmental services and interior design services. The remaining firms offered just one particular service. In terms of accolades, 35 (17%) firms won architectural awards in 2007, contrasting with 25 (12%) in 2010. The comparison data across 2007 and 2010 illustrate a decline in operating activities, as well as a reduction in the pursuit of architectural awards, mostly due to the sharp decline in staff numbers.

4.4 Measurement of Deductive Study Variables

This section describes the rationale for the selection of measures of emotion management and innovation for the present study. Validated measures that have been used successfully in previous research on EM and Innovation were included in the questionnaire.

4.4.1 Measures of Emotional Intelligence

Multiple measures of EI have been developed since its inception, but two main approaches have emerged. The first is the mixed model, which measures a multitude of things from self-rated leadership to empathy, to teamwork, to decision making (Daus, 2005). The second is the ability model that focuses exclusively on cognitive abilities. These models have little in common other than the use of the term. The response format of self-report, or ability scale, is the main distinguishing feature between the two approaches, outlined in Figure 4.1.

Figure 4.1 Mixed and ability measures of emotional intelligence

EI Measure	No. of items	Dimension Description	Response Format	Reliability Evidence
Mixed Models				
Emotional Competence Inventory (ECI) (Goleman, 1995)	72	Self Awareness Social Awareness Self Management Social Skills	Self Report, Informant Report (peer supervisor)	Internal consistency reliability rages from 0.45 to 0.77 for self, and from 0.54 to 0.90 for peer and supervisor assessment.
Emotional Quotient Inventory (EQi) (Bar-On, 1997)	133	Intrapersonal Interpersonal Stress Management Adaptability General Mood	Self Report	Alpha=0/76 for overall scale; has been independently confirmed outside of Bar-On's lab
Wong Law Emotional Intelligence Scales (WLEIS) (Law et al., 2001)	16	Self Emotions Appraisal Others Emotions Appraisal Use of Emotion Regulation of Emotion	Self Report	Adequate internal consistency reliability for scale scores ranging from 0.79 to 0.93
Ability Models				
Multi-Factor Emotional Intelligence Scale (MEIS), (Mayer, Salovey and Caruso, 1999)	402	Perception Assimilation Understanding Managing Emotions	Ability Scale	Test-retest overall (2 weeks): 0.75, Overall scale has adequate internal consistency reliability (alpha =0.95) some scales have lower than adequate reliability
Mayer, Salovey, Caruso Emotional Intelligence Test MSCEIT (Mayer et al. 2003)	141	Perception of Emotions Emotional Facilitation Understanding Emotions Managing Emotions	Ability Scale	Adequate internal consistency reliability for overall scale. test-retest (2 weeks = 0.86)

Source: (Murphy, 2006)

4.4.2 Mixed and Ability Models

The mixed or self-report models are based on popular depictions of EI by Goleman (1995), and include three constructs: perceived emotional abilities, competencies and personality traits (Brackett et al., 2006). Mixed model approaches are often referred to as trait or personalities approaches, and use self reporting to report levels of EI. There are many associated problems with self-reporting survey instruments. Paulhaus et al. (1998) states that self-reporting measures are biased, and results on personality inventories are contaminated by enhanced self perception, and compares it to asking

someone ‘Do you think you are pretty smart?’. Day and Carroll (2008) investigate the ability to fake the answers on both the mixed and ability models, and found that the mixed models were more open to faking than the ability models. The reason is that participants are able to increase their emotional quotient (EQ-I) scores when motivated to do so, but cannot do the same for the ability model scores with the same motivation. In addition, Roberts, Zeidner and Matthews (2001) state that the overlap which exists between the EI self-report scales and existing personality scales is a serious challenge to the conceptualisation of EI as a cognitive ability rather than a personality trait.

This study has selected an ability model to measure emotional intelligence due to the fact that it can ‘capture the integrity and distinctiveness of emotion from cognition and has demonstrated that both are critical independent predictors of life and work outcomes’ (Daus, 2005:307). Mayer, Salovey and Caruso (2002) state that ability models are the gold standard in intelligence research, because intelligence refers to the actual capacity to perform well at mental problems, and not just beliefs about one’s capacities. The reason is that the ability test asks participants to take relevant questions and measure their answers against a criterion of correctness (Carroll, 1993). The ability models conceptualise EI as a set of mental skills that can be assessed with a performance test, which has reasonable correlations with conventional psychometric intelligence measures such as General Mental Ability (GMA) (McCann, Roberts, Matthews and Zeidner, 2004; Schulte, Ree and Caretta, 2004), while the

self-report or mixed models have weak correlations with GMA. The empirical evidence points to the ability model, and in particular, the MSCEIT model as an effective measure of EI. The 'Mayer, Salovey and Caruso Emotional Intelligence Test' (MSCEIT) (Mayer, Salovey and Caruso, 2002) is an ability model that assesses the ability to manage emotions, asking participants to rate a number of possible actions on the scale, ranging from very effective to very ineffective. The structure, validity and empirical findings using the measures will now be examined in more detail.

4.4.3 MSCEIT Model

The MSCEIT model has 141 questions around four branch scores: 'perceiving or identifying emotions'; 'using emotions'; 'understanding emotions' and 'managing emotions'. 'Perceiving' refers to the ability to identify emotions in oneself and others, as well as other stimuli such as voice, stories, music and works of art (Eckman and Friesman, 1975). 'Using emotion' involves the ability to harness feelings that assist in cognitive processes, such as reasoning, problem solving, decision making and interpersonal communication (Brackett et al., 2006). 'Understanding' emotion involves language and thoughts that enhance the capacity to analyse emotions. This involves understanding the manner in which emotions combine, progress and move from one to the other (Frijda, 1986). 'Managing' emotion refers to the ability to 'reduce, enhance or modify an emotional response' in oneself and others (Brackett et al., 2006:781). This

also includes an ability to experience a range of emotions while making decisions about the usefulness of emotions in a given situation (Gross, 1998). The MSCEIT comprises eight tasks and two dimensions (experiential and strategic EI) to test each of the four abilities. The four emotional abilities within the EI model are arranged so that the more basic psychological processes (that is, perceiving emotions) are the foundation, whereas the more advanced processes (that is, management of emotion) are at the higher end of the model (Brackett et al., 2006).

The total time to complete the MSCEIT can take between 30 and 40 minutes. This is regarded as the maximum a total survey instrument should take in business research. Because other questions were required to measure the remaining variables, the number of the MSCEIT questions had to be reduced. One of the authors of the MSCEIT model, Dr, David Caruso recommends isolating the emotion management (EM) branch scores of the survey. This reduces the survey time to 10 minutes, and also offers a suitable measure for emotion management abilities of architects. This branch of the MSCEIT has been cited as the most superior, because management of emotions is what encourages individuals to conserve their scarce cognitive abilities and not become distracted by intense emotions (Ashkanasy and Dasborough, 2009). Mayer and Salovey (1997) describe this branch of EI as the capacity to connect or disconnect from an emotion, depending on its usefulness in any given situation. This helps facilitate detachment from the feeling of extreme stress and promotes ability to focus on the task at hand (Rode et al., 2007). Brackett et al. (2006) describe this

branch of EI as the ability to reduce, enhance or modify emotional responses in oneself and others, as well as the ability to experience a range of emotions, while also deciding about the usefulness of a particular emotion in any given situation (Eisenberg et al., 2000). The questions from the EM branch present various scenarios that examine respondents' ability to manage their emotions. One question outlines a scenario in which 'John has developed a close friendship at work and that friend leaves the company suddenly and unexpectedly for another job, and therefore John is upset'. The questions present three scenarios of action for John to select. Examples of this question and more can be seen in page 6-8 of the survey instrument in Appendix E.

In terms of validity, the Standards for Education and Psychological Testing state that response processes provide validity evidence for ability tests. Mayer, Salovey and Caruso (2008) state that the MSCEIT meets these standards, as well as the structural, convergent and discriminate validities. The split-half reliabilities for the management of emotion subscale, which are reported in the test manual for the MSCEIT, 2nd edition (Mayer et al. 2002), are acceptable (r=.83) (Mayer et al., 2002; Palmer, Gignac, Manocha and Stough, 2005). Brackett et al. (2006) state that the MSCEIT has a supported factor structure congruent with the theory which the model is based on, and is distinct from reliable measures of personality (Day and Carroll, 2004; Mayer et al., 2000). The subscales of the MSCEIT converge with one another, ranging from .16 to .58. The incremental validity of EI demonstrates that it promotes better attention to mental and physical

processes, as well as improved social competency and enhanced quality relationships (Brackett et al., 2006; Lopes et al., 2004). These variables remain significant even after the control of traditional personality variables and general intelligence on the measured outcome (Mayer, Salovey and Caruso, 2008). The MSCEIT purports to have right or wrong answers, and thus is difficult to 'fake'.

When calculating the scores for EI, a statistical firm associated with the test publisher, Multi-Health Systems (MHS) utilises a general consensus or expert scoring method to calculate item and task scores. Consensus and expert scoring methods determine the most effective answers for the test. Consensus scoring is based on the number of respondents in the normative sample (N=5,000), which involves pooling together the judgements of hundreds of people and examines if the test respondents' answers correlate with the majority of opinions. This method is in direct contrast to scoring general measures of intelligence, where objective truths are considered (Mathews et al., 2002:186). Task level scores for emotion management are calculated based on the proportion of the consensus sample (general in this case) who selected the response. If response 'A' is selected and 33% (proportion=.33) of the consensus sample selects 'A', then a score of .33 is assigned to that response. Expert scoring involves determining the best answers to the scenarios by pooling the judgement of 21 expert emotion researchers. The scored responses are then used to derive the average response score, which are the unadjusted raw scores for the two task scores of emotion management and emotion relations. The emotion management

task (Task D) measures the respondent's ability to incorporate his or her own emotions into decision making, and rate the effectiveness of alternative scenarios where a person must regulate his or her own emotions. The emotion relations task (Task H) measures the respondent's ability to incorporate emotions into decision making that involves other people, through assessing how different actions are used to achieve positive outcomes (Mayer, Salovey and Caruso, 2002:20). The initial scores are unadjusted for gender and/or ethnic group (Mayer, Salovey and Caruso, 2002). A study of test scores across a sample of 2,000 individuals indicate that both consensus and expert scoring methods correlate (r=0.98) (Mayer et al., 2003). This denotes that the two methods converge well on correct answers. However, critics of this method point to a lack of consideration of cultural differences. For example, in Britain, the traditional belief may be to use the 'stiff upper lip' to respond to emotional problems, whereas this may differ in other cultures (Roberts, Zeidner and Mathews, 2001). Fernandez-Berrocal and Extremera (2006) also state that the consensus answers for the MSCEIT model should reflect cultural considerations of emotion expression in different contexts. They call for a means to identify which cultural dimensions interact with an individual's ability to attend to, understand and manage his or her emotions.

There are other limitations of the MSCEIT. McCann et al. (2002) question the lack of scientific standards that determine the accuracy of such ability tests. Another limitation is that it may be insufficient to assess a person's accuracy in emotion perception (Roberts et al., 2006). Even Mayer et al.

(2003:104), who developed the MSCEIT, have stated that 'the applied use of EI test must proceed with great caution'. Roberts, Zeidner and Matthews (2001) question the methodological approach of the consensus scoring procedure. In an open letter to the *Leadership Quarterly Journal*, Ashkanasy and Dasborough (2009) criticise the scoring of EI, which is measured against expert judgements (expert scoring) and response ratings, while IQ tests are measured against objective answers that are less biased. However, Ashkanasy and Dasborough (2009) argue that the validity issues associated with the scoring of the MSCEIT are currently being investigated and dealt with in high-ranking peer-reviewed journals. Limitations of the management of emotions branch have also been highlighted. These include the fact that certain emotional reactions may only be assessed by reference to social and personal standards (Mathews and Zeidner, 2002). For example, if one is being mocked by a co-worker, is there a specific correct response? The answer is often no, because it depends on the situation, the person's experience and their position in the organisation. Also, the emotional response felt depends on the preservation of self-esteem, maintaining co-worker relations, and career advancement.

Although the mixed models such as the EQi model (Bar-On, 1997) incorporate a diverse range of abilities, behaviours and personality traits using self-report EI, the ability model (MSCEIT) focuses exclusively on cognitive aptitudes, referring to EI as a form of intelligence, which reflects the ability to process emotional information (Kerr et al., 2006: 266). The MSCEIT also has solid empirical and psychometric history based in classic

psychological literature (Ekman and Friesen, 1975; Isen, 2001; Ortony, Clore and Collins, 1988; Thayer, 1966). In a review of the EI literature in the last decade, the MSCEIT model has generated the largest number of research articles on EI that are published in peer-reviewed journals (Mathews et al., 2002). The main reason for this is the solid theoretical base, the novelty of the measure compared to other approaches and the support of the empirical data obtained from the applied field (Fernandez-Berrocal and Extremera, 2006). Jordan et al. (2006) suggest further testing of EI using the MSCEIT model, which this research provides.

4.5 Measuring Innovation in Service Firms

There are many different measures of innovation at individual, team and firm level, some of which have strong validity, such as the Team Climate Innovation (TCI) measure developed by West and Anderson (1996), the Innovative Work Behaviours (IWB) measure by Oldham and Cummings (1996) and Scott and Bruce (1994). The study seeks a measure that can capture the role of multiple stakeholders during the innovation process of professional service firms such as architectural firms. However, many of the innovation measures have been created for manufacturing organisations, where R&D spend, number of patents, and labour productivity are cited as the most popular ways of measuring innovation. A measure that initially presents itself as a suitable assessment of innovation in service firms is the 'Community Innovation Survey' (CIS). This survey instrument is used to evaluate levels of service and manufacturing firm innovation in Ireland by

Forfás/Central Statistics Office (CSO), and is used widely across Europe to measure levels of innovation at a national level. The strength of the measure in comparison to other studies lies in its ability to measure product and process innovation, as well as organisational innovation. The data from CIS provide the ability to link a firm's financial performance with innovation activity. It distinguishes between product and process innovation, which provides valuable insight into the firm's strategies. It questions aspects of new and improved products and services, as well as processes, logistics and distribution methods. Although the CIS corrects the imbalance between recording innovation across manufacturing and service firms, some observers question the validity of the CIS measure (NESTA, 2009). One criticism is regarding how firms perform at different stages of the innovation process. Tether (2005) notes that service firms are unlikely to record their innovation activities within the CIS surveys, due to a number of factors. Firstly, services tend to operate incremental change as opposed to step changes, which are more common in manufacturing. The CIS model is designed around the step change model, and hence will miss some incremental-type innovation that typically happens in service firms. Also, although the survey distinguishes between product and process innovation, service firms often find it difficult to categorise their innovation within these limited categories. This is reflected in Tether's (2005) research that used the CIS instrument and found that service firms are less likely to engage in new product developments and processes, and are more likely to describe their innovation as developing new organisational changes. In addition, the CIS is 'a generic framework which ignores sectoral differences, resulting in a

paucity of sector specific metrics, which slows the generation of data reflecting those hidden aspects of innovation' (NESTA, 2009:12). This led the researcher to the innovation value chain as a measure of innovation that is sector specific, but also captures the whole process of innovation in service firms.

4.5.1 Innovation Value Chain

In a 2009 survey commissioned by the UK government, the National Endowment Science Technology and Arts (NESTA) aimed to provide a holistic measure of innovation of firms across all sectors. NESTA surveyed nine sectors, surveying 1,500 companies by a telephone survey. In its findings, NESTA state that although the CIS index examines some aspects of the innovation process that include the use of external knowledge sources to gain ideas for innovation, their study provides more detailed metrics, broken down by sector across the whole innovation process. They introduce an activity based framework, called the Innovation Value Chain (IVC) (Hansen and Birkinshaw, 2007) to assess companies. The IVC is derived from a decade of five large research projects across 30 multinational organisations in North America and Europe, and has its foundations in Porter's value chain measure (1985). The IVC framework has been described as 'a diagnostic tool for companies to access innovative capabilities' (NESTA, 2009:14), and it allows these companies to examine the distribution of their innovative abilities throughout the firm. Laursen and Salter (2006) refer to this as an open innovation model. Cassiman and

Veugleler's (2002) research discovered a complementary relationship between a firm's internal research and development, and the benefits of external knowledge sources. The IVC captures those aspects of innovation that are neglected by traditional innovation measures, providing the researcher with a front-to-back view of the three most valid aspects of innovation: 'accessing innovation', 'building innovation' and 'commercialising innovation'. 'Accessing innovation' focuses on the scale of financial investment in knowledge. This may be the firm's in-house research and development activities, or the external knowledge sources used. This aspect of the chain highlights the sector's 'level of engagement with open innovation activities' (NESTA, 2009: 15). 'Building innovation' is the translation of knowledge investments into innovation inputs in the form of products or processes. This examines the organisational activities that are often invisible using traditional innovation measures. The third part of the IVC framework is 'commercialising innovation' where the exploitation of innovations in the market place is recorded as productivity or increased sales. This can include spend on branding and the use of patent or intellectual property protection. The individual findings from each link in the chain are then collectively combined to provide a measure for each sector. This measure also provides a useful lens through which to examine the role of stakeholders in architectural firms for accessing, building and commercialising innovation. The difference between the IVC and the CIS survey is that the NESTA (2009) study developed a sector-specific measure that truly reflects innovation activities in architectural firms. It also allows a measure of 'multi-functional team activity' and provides an idea of the

diverse nature of such innovation activity. Roper, Love and Dundon (2008) use the IVC model to explain firms' knowledge sourcing, transformation and exploitation capability. They found that firms with larger resources have greater capabilities in each stage of the IVC, while firms in slow growing markets are reluctant to invest in each IVC stage. These authors establish causal links between the three stages of the IVC, which include synergies between firms' internal and external knowledge gathering activities, links between knowledge sourcing and innovation outputs and finally, links between innovation activity and business growth. The IVC assists in understanding of strengths and weaknesses of firms' innovation processes. This allows weak links in the chain to be identified and necessary interventions can be put in place to overcome such weaknesses. Roper, Love and Dundon (2008) state that the IVC process can provide firms with a means to communicate and share information across multifunctional areas, which can prompt innovation outcomes.

4.5.2 Scoring and Validity of the Innovative Value Chain

Roper et al. (2008) formalised the work of the IVC through econometric modelling. This approach provides a practical interpretation through the categorisation of innovation activities into 'accessing', 'building' and 'commercialisation' of innovation. Within these three categories, 16 metrics have emerged to measure these activities across each sector. These metrics are validated from findings of exploratory interviews with 1,500 firms and sector representatives (NESTA, 2009:16). The 16 metrics are divided into five items that relate to access of knowledge, six that relate to building knowledge, and five that relate to commercialising innovation. Some of the measures are asked across all firms, and some are sector-specific. In order to compare innovation activities across sectors, it is necessary to weight the metrics of accessing, building and commercialising innovation to normalise the ranges between nought and 100. Once normalised, the metrics are averaged to give three sectoral indices for each sector. A1 to A5 were averaged to give the innovation index for Accessing Innovation. B1 to B5 were averaged to give the index for Building Innovation. C1 to C5 were averaged to give the index for Commercialising Innovation. An overview of these components is provided in Figure 4.2.

Figure 4.2 Components Accessing, Building and Commercialising Innovation

Accessing Innovation

A1. Proportion of externally sourced ideas %

A2. R&D intensity % (A measure of firm's commitment to technological innovation)

A3. Design Intensity % (A measure of firm's commitment to design as part of their innovation activities)

A4. Multi functionality in accessing knowledge % (firm's use of multiple skills groups in accessing knowledge)

A5. External knowledge sources % (and their importance for innovation)

Building Innovation

B1. Process Innovation Intensity % (a non standard measure of a firm's commitment to process innovation)

B2. Sales of innovative products % (standard measure of the percentage of a firm's sales from new or improved products throughout the year)

B3. Diversity of Innovation activity% (this reflects the diversity of firm's innovation activity)

B4. Examines who in the firm are involved in new or improved products or services

B5. Embeddedness of teamwork in building innovation % (measures the extent of commitment to teamwork as part of a firm's building innovation)

Commercialising Innovation

C1. Range of customer relation modes % (reflects the range of customer interaction which firm's employ.

C2. Branding, marketing intensity (measure of a firms commitment to commercialisation through their spend on marketing and branding)

C3. Examines who in the firm is involved in marketing or selling new or improved products

C4. Explores range of partners who assist them in selling new products and services

C5. Form of Intellectual Property protection on the firm's innovation activities

Source: NESTA Study, 2009

Using tests for normality in innovation for architectural firms, the trimmed mean and Kolmogorov-Smirnov test of normality demonstrates a mean for the IVC of M=26.27, and a trimmed mean of M=26.02, indicating that the data are normally distributed. The Kolmogorov-Smirnov test indicates a result of above .5 indicating normality. This was also explored using a histogram, box plot and normality plot, where a normal distribution for this dataset was observed. Three items of the IVC measure are answered using a Likert scale from 1 to 7, with 1 = 'strongly agree' and 7 = 'strongly disagree'. When tested for reliability using the Cronbach alpha, all scales have reliabilities of above .70. For the question on external collaborators, 'accessing knowledge' is measured using item 'Innov3.15' (see survey in Appendix E). A PCA factor analysis was conducted, and the six items from 'Innov3.15' (see survey in Appendix E) loaded onto one factor with factor loadings of .3 and above. The factor of external collaborators explained 41.1% of the variance, with an Eigenvalue of 2.49. These results are displayed in the Component Matrix and Total Variance Explained, which are provided in Table 4.5 and Table 4.6 in Appendix K.

An example of a question from 'building innovation' is: 'In comparison to other firms of your size, how would you rate your firm in terms of creating intellectual property?' The respondents select their answer using a Likert scale. For this scale the Kaiser-Meyer-Olkin value was .813 exceeding the recommended value of .6 (Kaiser, 1958) and Bartlett's test of Sphericity

(Bartlett, 1954) reached statistical significance p=.000 supporting the factorability of the correlation matrix. A PCA factor analysis was conducted and ten items from building innovation loaded onto one factor with factor loadings of .4 and above. The 'building innovation' factor explained 42% of the variance with an Eigenvalue of 4.2. These results are provided in the Component Matrix and Total Variance Explained Table 4.7 and Table 4.8 in Appendix K.

The total innovation scale in conjunction with the EI measure was deemed too long. Following consultation with Professor Jim Love (one of the authors of the NESTA study), some adjustments on the number of components of the innovation measure were made. It was decided that questions B4, C4 and C5 were unnecessary for inclusion in this research. For all firms, the response of the managing director of the organisation represents the firm response.

Overall, the literature does not endorse a single, universally acceptable indicator of innovation (Cohen, 2003). Yet it is important to assess how innovation is conceived and operationalised. All types of innovation must be acknowledged, not just that which measures outputs, but also the intangible processes that can reflect highly innovative patterns. The measure that has emerged most strongly for the purpose of this study is the IVC, which measures innovation at sector level, and also takes into consideration external collaboration partners and other networks that enhance the innovation process.

4.6 Cross Level Effects

As outlined in the previous section, the leader EM variable is measured at individual level, while the innovation variable is measured at organisational level. This would normally produce some difficulties in theorising across two levels of analysis. However, the cross level effect of the individual measures of leader EM and the organisational measure of innovation is justified due to the acutely small size of the majority of firms in the sample. This is outlined in Table 4.2. Seventy three per cent of the firms surveyed had three employees or less, which included the managing director, while 45% of firms were composed of the managing director alone. This suggests that most of those leaders surveyed were the sole voice within the organisation, and therefore had a high level of influence over the levels of innovation in the firm. This supports McNamara, Lucie and Thompson (2002) who state that the managing director viewpoint is considerable when it comes to evaluating the firm's performance. In addition, Calori et al. (1994) state that the managing director is the strategic leader of the firm, and he or she digests the thinking of other members of the top team on strategic matters, and thereby incorporates their viewpoints into his or her own strategic knowledge structures.

4.7 Control Variable

The inclusion of a control variable in the statistical test of the relationship between EM and innovation satisfies Hage's (1999) call for controlling for

firm size to assess for impact on innovation. Firm size was measured using sales revenue and number of employees. This helped to provide some insight into the sector in terms of its financial and competitive performance, in addition to providing controls for hierarchical regression tests.

This chapter explored the philosophical approach to the research, which includes an inductive approach to offer context to the study, followed by a deductive approach to answer the hypotheses prompted by the research question. The research process for both methods was also examined. This included: the selection of sampling framework, the pilot study, the survey design and some descriptive statistics. This was followed by a description of the EI and innovation measures. The limitations of using the measures were outlined and some adjustments to the length of the survey were outlined. The next chapter presents findings from the qualitative study, which provides some context to the study.

CHAPTER FIVE

Qualitative findings

Although, the architectural profession shares similar business processes with other service firms, there are several unique aspects to the work of architects. This chapter examines how architectural firms manage these processes, using evidence gathered from nine architects. This provides rich context regarding how contemporary architectural firms manage their business processes.

5.1 Findings

Following a quasi grounded theory approach, semi-structured interviews provided a rich source of information of the business landscape of the architecture. Six main themes emerged from the study: organisational structure and teams, leadership, emotions, strategy and business processes, commercialising and promotion, and the architect and image. In order to capture the true essence of the profession, some quotations from the interviews will be used to provide context to the findings. The use of quotes follows the guidelines set out by Kvale and Brinkmann (2009) regarding relevance, brevity, selection and rendering of quotations into a written style.

5.1.1 Organisational Structure and Teams

The first theme to emerge relates to how architectural firms are structured. Pinnington and Morris (2002) describe two distinct types of architectural practices: Managed Professional Business (MPB) and Professional firm (P^2). MPBs are usually large bureaucratic firms with specialised divisions, where quantity of outputs is often more desirable than design. These firms usually attract talented architects who help to secure large commissions, but high levels of bureaucracy can cause communication breakdowns. P^2s are usually small firms with an informal structure and promote themselves as preservers of creativity over capitalism (Pinnington and Morris, 2002). They maintain constant contact with their client and build up strong relationships, which allow creativity and design to sit comfortably together. Blau (1984) believes that these firms do outstanding work in comparison to larger ones. Of the nine architects interviewed, most had gained work experience in large firms but now manage small firms. However, some had strong feelings around the characteristics of large firms. Most architects are educated in studio environments in architecture schools and subsequently complete their apprenticeships in large firm office environments. Architect 3 described large practices as hierarchical, which were not cosy or friendly places to work. He stated that the bigger the name, the crueller it was. In describing the origins and behaviours of large practices, Architect 8 described his previous firm:

> ‘The junior people didn’t know Mr. X at the top. It was very hierarchical. It was seen in a traditional way. The result was that the place worked in a traditional pyramid.’

This senior architect, who now leads an alternative type of firm, has created an environment that is more conducive to learning and sharing of information and ideas. He did this by opening up all the studios to encourage all of the senior partners and associates to work in an open plan environment. This studio environment appears to be the preferred choice for some architects, with Architect 5 stated that he had a major problem with office environments, and much prefers a studio. Architect 9 also complimented the merit of studio type environments, in that architects are all in one room working together, which tends to generate accidental cross fertilisation of ideas. Communication is also enriched, as Architect 4 described:

> ‘We work in an open plan office, we all sit near each other and we are talking all the time. It is very difficult for one person to keep track of every detail, so when someone puts down the phone, we might say; ‘And you know something else happened which might affect X, or the client said this or the engineer said the other’. We are always communicating, it is hugely important.’

A move away from the more traditional organisational structure into studio and open plan working environments encourages team innovative

behaviours to emerge, allowing the transfer of knowledge around the firm. NESTA's (2009) survey of UK architectural firms found that innovation is mostly produced through teamwork, where internal and external partners with varying skill-sets collaborate. Bantel and Jackson's (1989) cognitive resource perspective, which states that levels and diversity of expertise are beneficial for complex problem solving, also emerges from the findings. Architect 3 described his firm's hierarchy as one where the senior team was composed of the most experienced architects, and the junior team was comprised graduates with two to five years experience. This leads to large amounts of diversity, illustrated by Architect 8, who stated that there were people with varying levels of qualifications who always bring particular expertise to the firm. Architect 6 states that diverse collaborations of architectural students and art students on common assignments in architectural schools provide strong results. Architect 8 stated that diverse teams can be encouraged through the lack of specialisation in genres of architecture, which leads to great cross fertilisation. This concurs with Blau's (1984) work, which advocates the benefits of vertical project teams to encourage integrated design concepts, and often results in more responsible handling of the project. This is reflected in a comment from the same architect:

> 'When there is a team meeting, there is a representative at all levels at the meeting. The guy in his t-shirt and jeans (well, we dress casually anyway) who is starting out as a young technician will also attend the meeting. In-

put in a team tends to prevent a clash situation, because we all have a different set of influences helping out.'

The empirical findings around organisational structure, and teams of contemporary architectural firms, present some informed insight into the role of the organisational structure in generating fertilisation of knowledge across teams. Large firms are powerful in that they have the resources and capacity to attract talented architects and win large commissions. However, bureaucracy in large firms can lead to problems with communication and cross fertilisation of ideas. This can be offset by the creation of a studio environment that allows multi-skilled teams to generate ideas and take more responsibility for handling projects. The leadership required for various firm sizes within architectural practices is now examined.

5.1.2 Leadership

In her study of architects, Blau (1984) found that the main priorities of the leaders or principals of architectural firms were: financial success, client satisfaction, aesthetics, personal satisfaction, logic and function, utilitarian, amicable contractor relationships, professional recognition, the improvement of life and pleasure to the occupier. Blau's findings reflect a strong leaning towards a transactional style of leadership, which focuses on reward-task oriented goals, and employee compliance (Burns, 1978). This is contrary to House et al.'s (2004) description of transformational leadership that involves influencing, motivating and enabling others to contribute

towards the effectiveness of the organisation. The empirical findings from contemporary Irish architectural practices also reflect a transactional style of leadership. Architect 1 described the leadership style in his firm as very dominant, where the practice was dominated by one individual, which he felt was unique to the profession. He illustrated this behaviour:

> 'Once he had an idea, it was difficult to challenge. What used to horrify me were the four or five senior architects sitting with him for two, three or four hours watching him working with a pencil. We were basically just watching him, instead of him calling us in for a quick 20 minute meeting for some ideas and getting us to work on them.'

This dominant style of leadership is also favoured by star architects or 'starchitects', who are experts and are highly sought after by clients. Architect 2 described a well known female architect in the profession as a 'starchitect':

> 'She is a luxury architect and many rich sheiks want her to design buildings for them. She doesn't have to pay her staff, as they want to have prestigious projects in their portfolio. In fact, she can afford to charge staff for the honour of working for her, so usually only the rich can afford to work for her. She doesn't care about her staff. She has a very bad name and she is cold hearted.'

Other styles of leadership also emerged from the findings. Architect 9 described her leadership style as very focused and open, where she was

confident to open up discussions and challenge the status quo. Architect 5, who led a very small creative design architectural firm, spoke of this abhorrence of formal leading, and felt the team need to have fun while they do their work. However, further questioning reveals the presence of a *laissez faire* approach to leadership, which shows the reluctance of Architect 5 to delegate and mentor his team. Architect 8, who previously advocated the importance of a studio environment and team cross fertilisation, shows self awareness of his selective approach to leading a diverse team. He usually selects the best people to lead and admits failing to mentor those who lack his levels of motivation about the job.

While exploring the leadership styles in architectural practices, an overarching theme began to emerge. This relates to the role of emotions, both in the creative process of design, and also the management of emotions of the multiple stakeholders in the practice of architecture.

5.1.3 Emotions

Contemporary architecture emerges as a highly emotive profession mostly due to the role of emotions as a component of the design process. Emotion management emerges as an inherent part of the profession, and is regularly used to manage internal and external stakeholder interests during a project.

The first clue to the emotive status of the profession came from the use of language, and, in particular, adjectives around emotional states which

include: happy, sad, hate, horror, tension, fear, and worry. Some of these emotions are common to Fisher's (1997) emotion scale, which lists 13 emotions: affection, pleasure, happiness, pride, optimism, enthusiasm, frustration, anger, disgust, unhappiness, disappointment, embarrassment and worry. Evidence of these emotions first emerged from the role of emotion in the design process. Architect 9 described architecture as a profession that is different to other fields because it is creative, and therefore, emotional. She illustrated the relationship between creativity and emotion:

> 'If you didn't get some pleasure, which is the creative part, only in the making and the realisation of it, it is not worth it. You know, the emotional and the actual material things are all one as an architect, they are not separate. There are not a lot of buildings that really move you.'

There have been many descriptions of creativity in the workplace (Amabile, 1988; Oldham and Cummings, 1996; West and Farr, 1990; Zhou and George, 2003). In general, it has been described as the production of novel and useful ideas or solutions. This was very evident from the responses from some, such as Architect 5 who described materials as the blocks and the building, but architecture as a form of creation to make these things beautiful. There were many references to the arts in terms of the source of creativity. Architect 5 described a fellow architect as someone who draws inspiration from unrelated fields, such as poetry and Greek mythology. Similarly, Architect 9 described architecture as the mother of the arts, and draws inspiration from contemporary music:

> ‘When we are trying to work something out, the alteration of building, we think about music and rhythm. Listening to contemporary type music usually makes me thing about the rhythm of the wall, you know, like John Adams or Philip Glass, brilliant (hums the tune), you know. If you think about it, music and architecture are very similar; they both make you feel emotion.’

This also echoes Blau’s (1984:6) findings who describe architects as ‘educated, skilful with the pencil, instructed in geometry, know history, follow philosophers with attention, and understand music’. Further evidence of emotion management abilities emerge in the descriptions of the architect and client relationship. Architect 2 described a situation in which a client could not commit to a design which the firm has proposed, as very sad, and feels that the client’s happiness is affected by the lack of decision on the project. Architect 3 illustrated the emotions which emerge during the client project process:

> ‘The client becomes emotional and it can become quite strange or tense, because their money is going into this thing. They lean on us a lot more than you would imagine they should. It is not trust, but they need to feel that they are in control of it.’

Architect 4 stated that emotions are never really far away from the surface, and although there is a need for sensitivity, rationality is also used by the architect to decipher the real intentions of the client. This architect also

described her own fears around spending the boss's money and ensuring she was following the company strategy, which suggests that architects must manage their own emotions during projects. When Architect 4 was asked how she felt when the client rejects ideas, she demonstrated a strong ability to manage her own emotions, and acknowledges that there can be frustration, but she simply tells herself to 'get over it'. Architect 8 similarly described how he managed periods of frustration: through injecting humour into the situation to remove the seriousness of the role. Management of internal stakeholder emotions includes the management of creative individuals in the team who can become highly emotional during the creative process. Wynch and Schneider (1993) refer to the difficulties of managing architectural practices, not solely because of the financial aspects of the business, but because of the creative professionals who resist being managed. Architect 9 managed her team's emotions by constantly observing the behaviours of the team and if someone became upset, she would quickly sort it out, so that it would not escalate.

These findings illustrate a profession that requires an understanding and management of the emotions. The management of the architects' own emotions became necessary when creative ideas inspired by feelings have to be reigned back during certain projects when they do not meet with the firm's direction or focus. Stakeholder emotions must also be managed, because positive relationships between them and the firm may be a determinant of a project success. The next section will examine these stakeholders, along with the findings on strategy.

5.1.4 Strategy and Stakeholder Knowledge

Blau (1984) describes an architectural firm strategy as where the practice wants to go, where the opportunities are, how to go there, and what resources and skills are required to get there. This is not about devising a complex plan from a drawer, but a process of critical thinking and flexibility. Evidence of strategy from the nine architects surveyed was sparse, and such language was alien to them. On a number of occasions when the word strategy was mentioned, it was quickly changed to a word like 'ethos' of the practice. Architect 8 described strategy as something that happens unconsciously or by proxy. His firm's strategy was not deliberate because the firm simply reacted to changing markets and the changing needs of clients. For other participants there was some evidence of a resource-led strategy, with Architect 1 describing that his firm's ethos is to supply the highest architecture possible. Architect 4 described her firm's strategy as giving the client what they are looking for. When Architect 2 was asked about her target market, she stated 'anyone who has a project'. Although this flexible approach to strategy is evident throughout the findings, this reduces a definite purpose or strategy of the firm (Koren, 2005). Wynch and Schneider (1993) advocate that architectural practices should design a strategy that reflects their distinctive abilities. They state that firms who pursue this method of strategy design would most likely survive a recessionary period.

Overall, the findings suggest an incremental approach to strategy, where strategies emerge according to the needs of the client or the demands of the market. This approach to strategy is worrying, due to its lack of focus on the firm's internal abilities or competencies that would provide a resource-led strategy in the firm (Barney, 1991; Wernerfelt, 1984). Although they are not captured, evidence of these unique competencies emerges during an enquiry into the translation of creative abilities into performance outcomes. Architect 4 states:

> 'I like to use my creativity and my experience and knowledge to decipher what the client is saying and give him something that doesn't necessarily look like how he thought it would look like, but answers to his needs in a way that is hopefully better than he imagined.'

What also emerges from an enquiry into these competencies is the long list of stakeholders that are involved in every project and contribute unique knowledge to the architectural firm. Stakeholders are defined by Freeman (1983:46) as 'any group or individual who can affect or is affected by the achievement of the organisation's objectives'. Architect 7 provided a list of these stakeholders, which included: quantity surveyors, fire safety officers, engineers, project managers, planners, environmental officers, electrical contractors, plumbing contractors and mechanical and electrical engineers. Some practices work well with these stakeholders and promote collaboration on projects with their external contractors. Architect 2 described the rapport between herself and a building contractor who was

doing deals with suppliers on her behalf. This provided innovative resolutions on detailing, of which she had no knowledge. Architect 4 described a similar experience during a hospital design project where she welcomed builders both asking her opinion and offering their own. She stated that she may not have always listened to them, but she respected their knowledge as a source of innovative ideas for the firm. She also described her working relationship with a microbiologist who was part of the project team on site during the design and building of a hospital wing:

> 'I work with an infection control officer who has power of veto over our design. There are times when we butt heads and don't agree, and it can be quite frustrating but it is actually very good that there is a microbiologist watching over what needs to be done. It is very important for us to have good guidance when it comes to infection control.'

This provides a good example of how knowledge from external stakeholders can be captured by the architectural practice for use in future projects as an innovative concept for designing similar buildings. This form of external collaboration often occurs between architectural firms and stakeholders during formal and informal feedback, movement of stakeholders across various activities, long-standing relationships with suppliers, informal networks and collaborations, use of IT tools to support information sharing and communication' (Kamara, et al. 2002). Tether's (2005) empirical research found that collaborations with stakeholders are an important source of innovation for service firms. Architect 8 described this flow of

knowledge from stakeholders as taking a design from one project, such as a university, and applying some of its components to other projects to inject blue-sky thinking on the project. The course director from the School of Architecture, Architect 6, described the importance of capturing this knowledge in an education setting:

> 'It is important to link up information that is derived from different sources, and represent it in different ways. We might draw them, map them and chart them. This allows people to see things differently. This type of activity has its location in graduate work.'

The next set of findings relate to the commercialisation activities of the sector

5.1.5 Commercialising and Promoting Architecture

Harrigan and Neel (1996) describe architects as creative introverts who mumble through drawings and are often unable to bring the drawings to fruition. This striving for commercial focus is reflected in the sentiment of Architect 3:

> 'The architect has to become more business-like or commercial in a way, well, not commercial, but more entrepreneurial, and look for more opportunity, because people will not come to you if they don't know you exist.'

Architect 8 described the importance of being commercially astute, and stated that an architect's career will be short lived if they are solely consumed by the beauty of the sketch with no understanding of how to commercialise the idea. Some firms are attempting to market the firm but in a rather passive manner. Architect 2 described her firm as a presence in the background, which she makes people aware of, and then waits for clients to approach her. Architect 5 described a similar approach, and admits to not doing very much, and hoping that work published in a magazine would encourage clients to contact him. The demand for architects during the Irish economic boom years did little to sharpen their marketing skills. This is illustrated by Architect 7:

> 'During the good times you looked at 6 or 7 projects and you simply had to decide which one you were going after, Which one would bring the largest amount of money into the business? Now with times the way they are, architects are out there looking for work.'

The reluctance among architects to actively seek business from clients is linked to the code of professional conduct stipulated by the Royal Institute of British Architects (RIBA) from 1979, which prohibited architects from approaching potential clients (Guttman, 1988:81). Although this code of practice ended for Irish architects in 2004 (RIAI, 2004), there is still a lack of enthusiasm around marketing and promoting the firm. Architect 2 stated:

> 'You can't really advertise; it looks cheap.'

This offers some insights into the architect's perspective of marketing the firm. However, some alternative approaches to marketing the firm are emerging in the form of exhibitions. Architect 3 describes the success of a creative exhibition in the city that informed the public of the work of the profession through a display of models and demonstrations. This allows the firm to meet potential clients who may not have previously approached an architect, and also helped to improve the public image of the work of architects, which is often perceived as an intimidating and costly experience.

5.1.6 The Architect and Image

A review of the literature in Chapter 2 found that architecture is often grouped with other high standing occupations such as medicine, law, and engineering. Architect 6 revealed a stark truth:

> 'In popular culture, the architect is esteemed for large amounts of praise. Architecture is seen as a high level and fashionable profession and there always seems to be a sense of architects making a lot of money. Some would say it is related to a certain class and portrayed as a sexy profession, just like doctors and lawyers. The reality is nowhere near as glamorous as it tends to be portrayed.'

He described some of the prescribed characteristics of architects:

> ‘Very often, architects are depicted as rather well dressed and rather fancy, have a posh car, usually good looking, even a nice golfer as it so happens, or a successful and beautiful woman. That is the perception.’

Architect 8 demonstrated how architects continue to create this false impression, by sending the senior partners, often dressed in suits, to meet the clients, and states that this perception can contribute to the difficulties of selling a creative concept to someone who assumes that you are a ‘ponce’ anyway. But other architects seemed progressive in their thinking, such as Architect 2:

> ‘Architects need to become more wily, the days of the gentleman architect with the tweed suit is gone, saying ‘I am the town architect’, that day is gone.’

This chapter set out to map the business landscape of contemporary architecture firms, and demonstrates a unique sector that must consider client emotions, stakeholder knowledge and creativity as inherent parts of the profession. This evidence is discussed at length in Chapter 7.

CHAPTER SIX

Quantitative data analysis

This chapter provides an overview of the quantitative findings from research question 1(a): Is leader emotion management positively related to accessing innovation? research question 1(b): Is leader emotion management positively related to building innovation? and finally, research question 1(c): Is leader emotion management positively related to commercialising innovation? Firstly, findings on the levels of EM and innovation are examined, along with some international comparisons. Secondly, the results of the multivariate analysis are presented. Statistical package SPSS version 18, along with Microsoft Excel, was used for multiple response calculations.

6.1 Levels of Emotional Management among Irish Architects

This survey assessed levels of emotion management among Irish architects using the subscales “emotion management” and “emotion relationships” of the MSCEIT. Table 6.1 provides the mean consensus raw scores of the architect sample in Ireland, compared with a general sample in the US by Mayer and Salovey (2002).

Table 6.1 Means and standard deviations for consensus scoring of the MSCEIT management of emotions branch

	Architects sample Ireland		Mayer et al. sample USA	
Managing Emotions	M	SD	M	SD
D: Emotion Management	0.39	0.07	0.44	0.09
H: Emotion Relationships	0.39	0.09	0.46	0.11
Total Emotion Management	0.39	0.07	0.45	0.08

Source: (Author) and (Mayer and Salovey, 2002)

The results showed that Irish architects scored lower on than the normative sample by Mayer and Salovey, both in terms of how well they manage emotions in their own life (M=.39 versus M=.44), and how well they manage emotional relationships (M=.39 versus M=.46).

A further study of the means from both samples, using an independent t-test, provided further insight into the comparability of both samples, assuming an equal distribution of the data. There was a small difference in the scores for Task D between the Irish sample (M=0.39, SD=0.07) and the US sample (M=0.44, SD=0.09); ($t = 6.202$, $p < .05$). For Task H, there was no real difference in the scores between the Irish sample (M=0.39, SD=0.09) and the US sample (M=0.46, SD=0.11); ($t = 6.965$, $p > .05$). There was also no difference in the scores for the total emotion management between the Irish sample (M=0.39, SD=0.07) and the US sample (M=0.45, SD=0.08); ($t = 7.982$, $p > .05$), which demonstrates that no meaningful differences exist

between the total emotion management branches exist between both samples.

While this comparison used raw scores, statistical calculations used by MHS (the publisher of MSCEIT) provide percentile scores for the test taker. For example, an adjusted raw score of .38 on Branch 4 may be higher or equal to 55% of those tested on the normative sample; therefore the raw score of .38 would be at the 55^{th} percentile. The percentiles are then converted to scores, with a mean of 100 and a standard deviation of 15. The overall mean (.33) and standard deviation (.44) are used for this conversion of percentile to standard scores to 'utilize the standard inverse normal function in most statistical packages' (Mayer, Salovey and Caruso, 2002:68). This provides a more comfortable metric for users, and allows the use of standard inverse normal function in most statistical packages (Mayer, Salovey and Caruso, 2002:68). Table 6.2 provides a range for interpreting MSCEIT scores along the EIQ range. Those who score below 90 are considered to be in the 'development' or 'improvement range'.

Table 6.2 Interpreting MSCEIT scores

EIQ Range	Qualitative Range
130+	Significant Strength
120-129	Strength
110-119	Competent
100-109	High Average Score
90-99	Low Average Score
70-89	Consider Improvement
69 or less	Consider Development

Source: (Mayer and Salovey, 2002)

In order to assess how the Irish sample compared internationally using the percentile scoring, the results were compared with three other samples measuring the management of emotions branch. The contexts for comparison were one American context, one German context and one international context. Table 6.3 shows the means and standard deviations (SD) for the Irish sample and the international samples.

Table 6.3 International comparison using MSCEIT percentile scoring

MSCEIT	Irish Sample			Lopes & Brackett (2004) (USA)			Lopes & Salovey (2006) (Germany)			Normative Sample (International-English Speaking)		
Branch 4	M	SD	N	M	SD	N	M	SD	N	M	SD	N
Management of Emotions	93.41	8.30	180	103	12.91	90	102	13.01	44	100	15	5000

The scores for the management of emotions branch for the Irish sample was 93.4 (*M*=93.41, *SD*=8.3) which is classified as a low average score. The second sample from Lopes and Brackett's US empirical study demonstrated a score of 103 (*M*=102.9, *SD*=12.91), which was a high average score. Lopes and Salovey's (2006) empirical study of a German sample showed an average of 102 (*M*=102.41, *SD*=13.01), which was also a high average score. The Normative sample represented 5,000 individuals from various English-speaking countries (63% United States, 17% Canada, 7% Western Europe, 5% Israel) demonstrated a score of 100 (*M*=100, *SD*=15), which was a high average score. When the Irish sample was compared to all three, the sample was one EIQ range lower than international samples scores in

the low average score range. Some possible explanations for this score will be discussed in Chapter 7.

6.2 Levels of Innovation in Irish Architecture firms

The survey also assessed levels of innovation for Irish architectural firms, and the results were compared to UK architects (data taken from the NESTA 2009 report). The sample size for the NESTA study was 217 UK architectural firms, and the responses included 95 firms with between five and 19 employees (44% of the total) and 54 firms employing over 100 employees (24% of the total) (NESTA, 2009:29). The remaining 69 firms (32%) were those who had between 20 and 99 employees. A comparison of the mean and standard deviation scores of innovation for both countries is listed in Table 6.4.

Table 6.4 Means (M) and standard deviation (SD) for levels of innovation in Ireland and UK architectural firms

	Ireland		UK	
	M	SD	M	SD
ACCESSING KNOWLEDGE				
A1 = Proportion of externally sourced ideas%	9.9	15.4	13.0	26.4
A2 = R&D intensity% (A measure of firm's commitment to technological innovation)	11.3	21.0	2.7	9.3
A3 = Design Intensity% (A measure of firm's commitment to design as part of their innovation activities)	3.7	4.6	1.4	5.8
A4 = Multi functionality in accessing knowledge% (firm's use of multiple skill groups in accessing knowledge)	29.1	34.2	22.0	28.6
A5= External knowledge sources% (and their importance for innovation)	73.1	26.3	21.0	31.4
BUILDING INNOVATION				
B1 = Process Innovation Intensity% (a non standard measure of a firm's commitment to process innovation)	3.9	8.0	3.8	14.6
B2 = Percentage of sales of innovative products (% of a firms sales from new or improved products annually)	11.9	21.9	12.0	23.9
B3 = Diversity of Innovation activity% (this reflects the diversity of firm's innovation activity)	46.9	23.9	28.0	29.6
B5 = Embeddedness of teamwork in building innovation% (commitment to teamwork as to build innovation)	51.6	27.5	17.0	32.8
COMMERCIALISING INNOVATION				
C1 = Range of customer relation modes% (reflects the range of customer interaction which firm's employ)	46.6	20.2	38.0	25.7
C2 = Branding, marketing intensity (marketing and branding spend)	2.7	2.8	1.8	7.9
N	210		217	

The results of the survey showed that Ireland performed stronger in all areas of 'accessing knowledge'. The most notable differences were in accessing external knowledge sources; 73% of Irish firms in comparison to 21% of UK firms avail of external knowledge sources (*M*=73, *SD* 26.3) versus *(M*=21.0, *SD*=31.4). For building innovation, the Irish sample also showed a similar performance to the UK for process innovation intensity and percentage of sales of innovative products. However, the average level of diversity of innovation activity in the Irish sample was 47% in comparison to the UK sample of 28% *(M*=47, *SD*=24) versus *(M*=28, *SD*=29.6*)*. Embeddedness of teamwork showed a similar trend with 51% of Irish firms having committed to teamwork as part of building the firm's innovation, in comparison to the UK sample of 17% of firms showing the same commitment *(M*=51.6, *SD*=27.5) versus *(M*=17.0, *SD*=32.8).

For commercialising innovation, the Irish sample showed that 46% of firms have an interest in the range of customer interaction which the firm employs, in comparison to only 38% of UK firms (*M*=46.6, *SD*=20.6) versus (*M*=38, *SD*=25.7). For branding and marketing intensity, both UK and Irish firms showed low levels of commitment. The Irish sample showed that 2.7% of firms rank branding as a priority, in comparison to 1.8% of UK firms (*M*=2.7, *SD*=2.8) versus (*M*=1.8, *SD*=7.9).

However, some of the main differences between the Irish and UK architectural sample may be explained by the difference in firm sizes for both samples. The NESTA report (2009:25) states that the UK sample has

‘an over representation of large firms’, and these firms tend to be more innovative and also export more of their services compared to smaller firms. The Irish sample consists of mostly small firms whose focus is different in terms of scope across projects, geographical regions and target clients. These differences may account for some of the findings on external knowledge sources, where large firms have access to large amounts of expertise on site, whereas the smaller Irish firms have to seek out external knowledge sources to access innovation. The diversity in innovation activity may also be reflected from firm size, because the Irish firms operate across a spectrum of activities in order to gain market share across a wide range of markets, whereas larger UK firms may focus on a particular area, such as commercial or education projects, and therefore remain narrow in their focus on innovation activities. The differences in the Irish and UK samples on the embeddedness of teamwork across both samples, which examines the extent of commitment to teamwork as part of a firm’s building innovation, may be accounted for by team composition. O’Reilly, Snyder and Boothe (1993) state that higher levels of executive diversity in large firms can result in poor communication among executives, less effective decision making and less positive organisational outcomes. This may account for the significant differences across both samples, and warrants further exploration which goes beyond the scope of this study.

Calculation of ranges of high to low levels of innovation for accessing, building and commercialising innovation was carried out using the NESTA measure, where the gap behind best practice was calculated by subtracting

the mean for the sector from the highest sectoral mean for each element (NESTA, 2009:83). The frequency of firms performing in the high, medium or low categories of accessing, building and commercialising innovation are presented in Table 6.5. The highest scores are highlighted in bold.

Table 6.5 Frequency and range of accessing, building and commercialising innovation in Irish architect sample

Accessing Knowledge			Building Innovation		Commercialising Innovation	
Range	Frequency	%	Frequency	%	Frequency	%
Low	0	0	33	15.7	52	24.7
Medium	85	40.9	76	36.1	**132**	**62.8**
High	**125**	**59.5**	**101**	**48.1**	26	12.3

Note: Sample size 210 firms

In terms of accessing knowledge, 125 (60%) firms scored in the high range. For building innovation 101 (48%) firms also scored in the high range. For commercialising innovation, 132 (62%) firms scored in the low range.

Overall, the majority of the Irish architect sample had medium levels of innovation. Table 6.6 illustrates the frequency of firms in each category of low, medium and high levels of innovation.

Table 6.6 Range of innovation levels for architectural practices in Ireland

Range	**Frequency**	**%**
High Innovation	48	22.7
Medium Innovation	95	45.2
Low Innovation	67	32.1

Sample size 210 firms

The findings showed that 23% of firms scored in the high range of innovation, while 32% of firms scored in the low range of innovation. The majority (45%) of firms were in the medium innovation range of innovation. In summary, the findings showed that Irish architectural firms had medium levels of innovation. These figures also suggest that the sample of Irish architects perform better in accessing, building and commercialising innovation than their UK counterparts. However, these differences may be simply explained by firm size differentials across both geographical areas.

The next section reports the findings of the correlation and regression analyses which were carried out in order to test the author's hypotheses.

6.3 Correlation and Regression Analysis

Correlation analysis and regression analysis were performed in order to test the following hypotheses:

H1a: Leader emotion management will be positively related to accessing innovation in architecture firms.

H1b: Leader emotion management will be positively related to building innovation in architecture firms.

H1c: Leader emotion management will be positively related to commercialising innovation in architecture firms.

Table 6.7 provides the inter-correlations among the key variables of the present study.

Table 6.7 Correlations matrix of the study variables

	Variables	1	2	3	4	5	6	7	8	9	10	11
1	Level of Education											
2	Company Tenure	-.116										
3	Industry Tenure	-.165*	.776**									
4	Age of Practice	-.094	.739**	.563**								
5	No. of Employees	.022	.175*	.097	.331**							
6	Sales Revenue	.078	.180*	.103	.340**	.941**						
7	No. of Architectural awards	-.077	.045	-.006	.007	.173*	.110					
8	Emotion management	-.032	-.217**	-.148	-.134	-.062	-.040	-.008				
9	Innovation	.003	.013	-.061	.036	.360**	.318**	.182*	.105			
10	Accessing Innovation	-.018	.007	-.031	-.012	.163*	.135	.154	.003	.596**		
11	Building Innovation	.066	-.050	-.151*	-.046	.301**	.284**	.170*	-.067	.722**	.213**	
12	Commercialising Innovation	-.025	.040	.080	.106	.192**	.200**	.074	.194*	.566**	.157*	.127

*** p<0.001, **p<0.01, *p<0.05. Listwise deletion method was employed to deal with missing data, which reduced the sample size from 210 to 170.

EM showed a small but insignificant relationship with innovation (r =.105, p>.05). However, although EM did not show a significant relationship with 'accessing' and 'building' innovation, it had a positive and significant relationship with commercialising innovation (r =.194, p<.05). The results further showed that EM was correlated with company tenure (r =-.217, p<.001). Innovation was significantly correlated with firm size measured by number of employees (r = .360, p<.001), firm sales revenue (r=.318, p<.001) and number of architecture awards (r=.182, p<.05). All correlations between the components of innovation were significant - accessing (r=.596, p<.001), building (r=.722, p<.001) and commercialising innovation (r=.566, p<.001). Linear regression showed no significant relationship between EM and Innovation (β=.105, p>.05). The beta coefficient for EM and 'accessing' innovation (β=.003, p>.05) and 'building innovation' was also not significant (β=-.067, p>.05). However, there was a small but significant relationship between EM and 'commercialising innovation' (β=.196, p<.05). Some multiple regressions were conducted in order to further test these relationships.

6.4 Multiple Regression Analysis

In order to investigate the role of EM as a predictor of innovation, several hierarchical regression analyses were performed. The sample of 210 firms was used to test hypotheses: H1a, H1b, and H1c.

H1a: Leader emotion management abilities will be positively linked to levels of accessing innovation.

Hypothesis 1a proposed that leaders' emotion management abilities are positively associated with accessing innovation in Irish architectural firms. Two steps of multiple hierarchical regression were conducted. In the first step, control variables, including firm size and sales revenue were entered. In the second step, the independent variable of leaders' emotion management abilities was entered. Table 6.8 presents the results of the regression analysis.

Table 6.8 Standard multiple regression to assess the predictors of 'accessing innovation'

Variable	Step 1	Step 2
Controls		
Firm Size (No. of Employees)	.429	.434
Sales Revenue	-.299	-.302
Independent		
EM		.630
R^2	.030	.032
Adjusted R^2	.016	.010
F	2.102	1.471

*Note: Standardised coefficients were reported. Listwise deletion method was employed to deal with missing data in hierarchical multiple regression analysis, which reduced the sample from 210 to 170 **p<.001, *p<.05, All tests were two tailed*

The results of Step 1 showed that firm size was positively related to firm innovation (β=.429, p<.05), which also supports Bantel and Jackson's (1989) evidence that innovation is related to firm size. The results of Step 2 showed that after controlling for firm size, and sales revenue, leaders' emotion

management abilities were not related to accessing innovation (β=.630, p>.05) (see Step 2 of Table 6.8). Therefore, H1a is not accepted.

H1b: Leader emotion management will be positively related to building innovation in architecture firms.

Hypothesis 1b proposed that leaders' emotion management abilities are positively associated with building innovation in Irish architectural firms. Two steps of multiple hierarchical regression were conducted. In the first step, control variables, including firm size and sales revenue were entered. In the second step, the independent variable of leaders' emotion management abilities was entered. Table 6.9 presents the results of the regression analysis.

Table 6.9 Standard multiple regression to assess the predictors of 'building innovation'

Variable	Step 1	Step 2
Controls		
Firm Size (No. of Employees)	.409	.402
Sales Revenue	-.102	-.097
Independent		
EM		.600
R^2	.099	.101
Adjusted R^2	.085	.079
F	7.054	4.768

*Note: Standardised coefficients were reported. Listwise deletion method was employed to deal with missing data in hierarchical multiple regression analysis, which reduced the sample from 210 to 170 **p<.001, *p<.05, All tests were two tailed*

The results of Step 1 showed that firm size was positively related to firm's innovation (β=.409, p<.05), which again supports Bantel and Jackson's (1989) evidence that innovation is related to firm size. The results of Step 2 showed that after controlling for firm size, and sales revenue, leaders' emotion management abilities were not related to building innovation (β=.600, p>.05) (see Step 2 of Table 6.9). Therefore, H1b is not accepted.

H1c: Leader emotion management will be positively related to commercialising innovation in architecture firms.

Hypothesis 1c proposed that leaders' emotion management abilities are positively associated with commercialising innovation in Irish architectural firms. Two steps of multiple hierarchical regression were conducted. In the first step, control variables, including firm size and sales revenue were entered. In the second step, the independent variable of leaders' emotion management abilities was entered. Table 6.10 presents the results of the regression analysis.

Table 6.10 Standard multiple regression to assess the predictors of 'commercialising innovation'

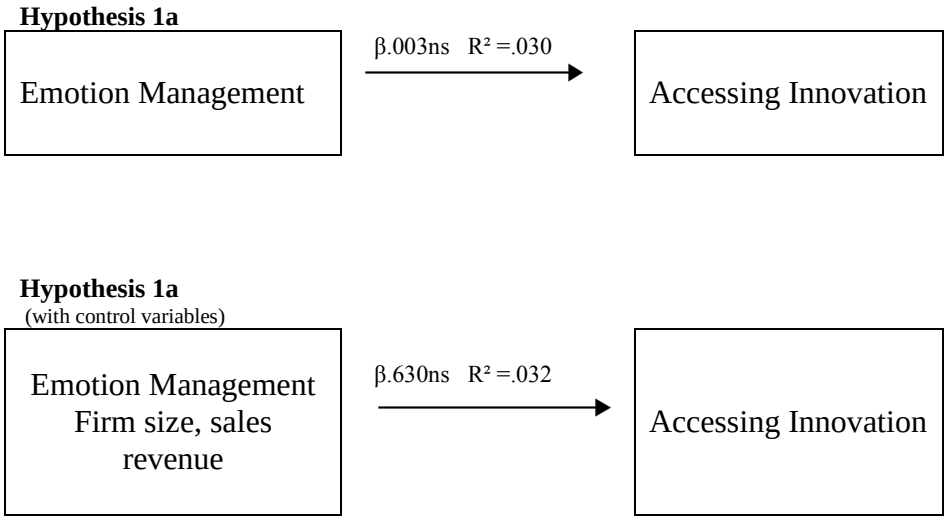
Variable	Step 1	Step 2
Controls		
Firm Size (No. of Employees)	.098	.127
Sales Revenue	.133	.114
Independent		
EM		.222*
R^2	.052	.101
Adjusted R^2	.037	.080
F	3.648	4.965

*Note: Standardised coefficients were reported. Listwise deletion method was employed to deal with missing data in hierarchical multiple regression analysis, which reduced the sample from 210 to 170 **p<.001, *p<.05, All tests were two tailed*

The results of Step 1 showed that firm size was positively related to firm's innovation (β=.098, p<.05). The results of Step 2 showed that after controlling for firm size, and sales revenue, leaders' emotion management abilities were related to commercialising innovation (β=*.222*, p<.05) (see Step 2 of Table 6.10). Therefore, H1c is accepted.

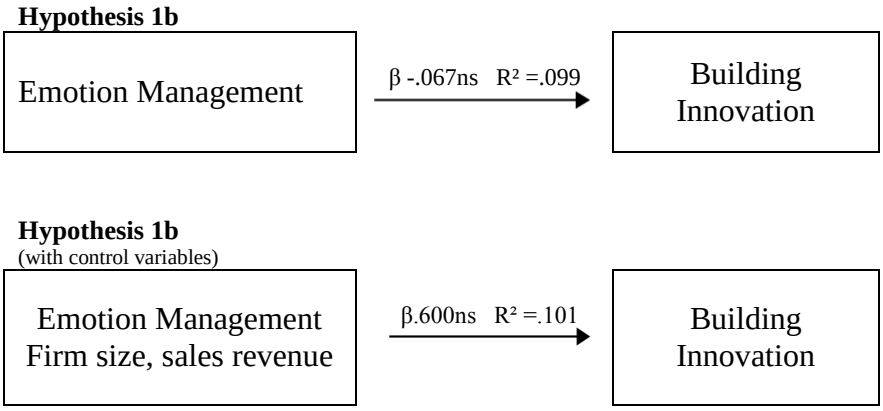
In summary, the findings of the linear regression showed that EM had no significant effect on accessing innovation. However, when controlling for firm size and sales revenue, the relationship between EM and accessing innovation marginally increased but not significantly. See Figure 6.1, hypothesis 1a.(with control variables).

Figure 6.1 Results of regression analysis exploring relationship between EM and accessing innovation



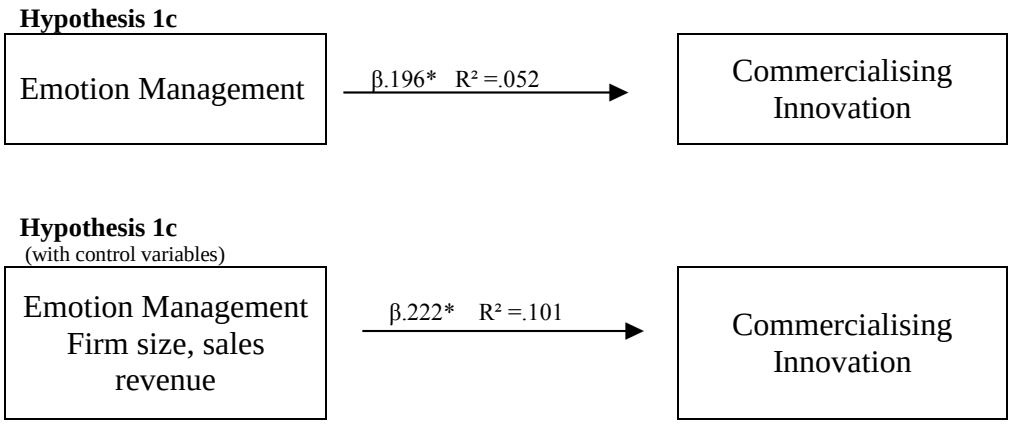
The findings of the linear regression showed that EM had no significant effect on building innovation. When controlling for firm size and sales revenue, the relationship between EM and building innovation marginally increased but not significantly. See Figure 6.2, hypothesis 1b (with control variables).

Figure 6.2 Results of regression analysis exploring relationship between EM and building innovation



Finally, the findings of the linear regression showed that EM had a small but significant effect on commercialising innovation. When controlling for firm size and sales revenue, the relationship between EM and commercialising innovation increased. See Figure 6.3, hypothesis 1c (with control variables).

Figure 6.3 Results of regression analysis exploring relationship between EM and commercialising innovation



In conclusion, the findings of the linear regression analysis results showed the relationship between leader EM and levels of accessing and building innovation in Irish Architectural firms marginally increased when firm size and sales revenue were controlled for, but not significantly. Further enquiry demonstrated a direct effect between EM and the commercialising component of innovation and demonstrated the most significant of all the hypotheses (See Figure 6.3)

Possible explanations and implications for these findings will be discussed in Chapter 7, which analyses the findings from the qualitative and quantitative enquiry. The research question will be answered, along with the research contributions of the study, implications for practice and limitations of the study.

CHAPTER SEVEN

Discussion and research contribution

7.1 Introduction

As outlined in Chapter one, this thesis had two primary objectives. The first was to provide some research context for the quantitative study, while exploring the business processes employed by contemporary architecture firms. The second was to explore the effects of leader emotion management on innovation. This chapter discusses the findings of the thesis in the context of these objectives. The contributions made to the literature are highlighted, as well as the implications for the profession. The chapter concludes by identifying the limitations of the study, and proposes future research.

7.2. Architects and Business

Architectural practices provide an excellent example of a services sector in Ireland which has generally been unable to respond effectively to the economic downturn. In order to gain a greater understanding of the underlying causes for this lack of response, this research focused on how contemporary architectural practices conduct their business processes. A literature review of the profession reveals a sector which has many creative components underlying business processes, but one which is ultimately lacking in commercial aptitude. The main differentiating feature between architects and other professional service firms is the management of this creativity, and the multiple stakeholders which are involved. If these unique features are not managed in a balanced way, the

firm's commercial activities can be compromised. Although a review of the literature on the profession provides a useful insight, there is a distinct lack of empirical studies which could provide a holistic picture of how contemporary architecture firms conduct their business. Blau (1984) provides a sociological study of the profession during the 1970s recessionary period, which outlines the desirable qualities of individual architects and their practice. However, very little work has been done since then. This research increases our understanding of a sector which is struggling to balance creativity with commercialisation. The reasons for this are many, and are discussed in detail below.

7.2.1 Business Landscape of Contemporary Architectural Firms

The first observation from the semi-structured interviews carried out with architects relates to the different types of organisational structures within the profession. A large number of the architects interviewed received their training or apprenticeships in large firms located in capital cities. These large firms offered a formal and bureaucratic organisational structure where cross fertilisation was discouraged. Moreover, these practices were often led by 'starchitects'. The evidence presented here shows that this dominant leadership style did little to encourage creative thinking or transfer knowledge across teams, which is similar to Peter and Waterman's (1982) findings on the restrictive nature of bureaucracy on creativity. However, the findings suggest that this structure and leadership style is slowly changing. The first evidence of this is the collective preference for a studio environment, which offers a place of learning across all levels of the practice, and encourages multi-disciplinary

teams to share knowledge across project domains. Secondly, the emergence of transformational styles of leadership, which include a deep understanding of the needs and behaviours of teams, indicates a more democratic workplace. However, for some architects, this style of leadership has not yet fully developed, and as a result manifests as an autocratic or *laissez faire* style of leadership, which does not dominate the team, but also does little to encourage or mentor young architects or team members who lack motivation. This new, transformational style of leadership appears to be largely driven by emotion management requirements, which are discussed next.

The second and most striking observation from the semi-structured interviews was the importance of the emotional aspects of the profession. These include the role of emotion during the creative design process, and the emotion management of teams and clients throughout the various stages of the project. When discussing emotion, the first reference which architects highlight is the concept that architecture is the mother of the arts, and that the inspiration for designing a building comes from music, culture, and other architecture. These sources of inspiration evoke strong feelings in architects and enhance the creative process. This supports Amabile et al.'s (2005) findings that positive emotions promote increased creativity in some contexts. However, the findings reveal that the creative process of some architects is interrupted by demanding or uncompromising clients and peers. These demands may result in creative ideas being reduced to suit functional and resource driven outcomes. This can evoke emotions such as frustration or anger which must be managed in order to fulfil the client brief (Baumeister, Heatherton and Tice, 1994). The second

reference to emotions concerns the handling of both internal and external stakeholder emotions. As discussed in Chapter 2, Winch and Schneider (1993) describe architects as creative professionals who often resist being managed. The leader of an architectural firm must be acutely aware of the team's behavioural tendencies, including the emotive nature of their colleagues, and manage the emotional difficulties which inevitably arise. This leadership style reflects elements of a transformational style of leadership. Zhou and George (2003) suggest that this leadership approach encourages the strong implementation of ideas at team level. The third reference to emotions in the findings relates to managing clients and their emotional reactions during a project. This unique area confers upon the profession a distinguishing feature. Unlike other professional service firms, such as accountancy and consultancy, architects are regularly exposed to a client's emotions throughout the project. This is as a result of both the financial and emotional investment which clients make when they decide to erect or alter a building. Emotion management abilities involve guiding the clients through doubts they may have over the project, or the fears of extraordinary creative dimensions within a brief. Although the findings reveal a profession which readily uses emotion management, it also appears that architects combine these emotions with rationality to put the needs of the firm and client first, in order to complete projects in a timely and cost effective manner.

The third observation regarding contemporary architectural practice is the number of stakeholders involved in a project from design to completion. These include internal stakeholders, such as professional peers in the practice, who

work on the design stage, and senior partners who secure the brief. External stakeholders include: builders, environmental officers, engineers, plumbers and the client. The findings denote that contemporary architects must be equipped with strong project management skills to ensure the efficient outcome of the project. Stakeholders have high levels of interest in the project. Their agendas can be diverse and, therefore, their needs must be managed carefully. This may involve ensuring the design is not compromised for functionality, and that cost and time efficiencies are preserved. Mansury and Love (2008) cite the importance of these external links with collaborators or stakeholders, because they have an important impact on firm performance. Although the number of stakeholders involved in the process is acknowledged, there is little evidence of the profession capturing knowledge from stakeholders in each project. Dundas-Hewitt and Love (2008) state that these types of alliances allow firms to cope with external uncertainties, through the strengthening of supply-chain relationships, which helps to build trust and mutual learning among stakeholders. Strategy research also identifies the role of internal and external factors in creating competitive advantage (Andrews, 1971; Hansen and Wernerfelt, 1989). These researchers state that if firms address demands made by stakeholders, and match them with internal resources and practices, the firm's strategy will have been enhanced (Kassinis and Vafeas, 2002).

This leads to a discussion regarding the strategy of architectural firms. The findings reveal a lack of knowledge regarding the meaning of strategy. This was evident from the discomfort around the language of strategy, which was redefined as the 'ethos' or 'focus' of the firm. This misinformed approach

reveals a sector which pursues an incremental approach to strategy which is highly emergent and fluid in response to turbulent markets. Harrigan and Neel (1996) suggest that a strategy for architectural firms should include identifying opportunities, the route to market and identifying and using resources and skills to achieve this. The findings indicate that these stages have not been developed by Irish architects. Although there is an awareness of the importance of developing internal knowledge, cross fertilisation across teams and promoting blue-sky thinking, there is little motivation to capture this knowledge as a resource. In fact, architects in many instances were reluctant to avail of the knowledge and expertise of external stakeholders. This reluctance often arises because the architect feels they have superior knowledge and are hesitant about taking advice from external stakeholders for fear it would dilute their status in the project. However, if some of this knowledge is accepted and captured, the profession can build up a set of competencies from which a unique strategy can be fashioned. This distinctive competencies approach is said to have increased firms' survival during the 1990s recession (Winch and Schneider, 1993), and could do so during the present economic difficulties.

The observations around commercialisation in contemporary architecture confirm that there has been little change. Although creative acclaim is still seen as desirable, business survival is craved by the profession. Architects continue to have a confused approach regarding promoting and commercialising themselves. Harrigan and Neel (1996) state that architects must be alert to opportunities and integrate themselves into the community, offering the benefits of their buildings to improve the quality of life of citizens. The

findings suggest a move towards this through involvement in exhibitions, open competitions and promoting the firm online using websites. However, the recession and limited bank credit continue to be cited as the main reasons for poor performance in these areas. This is partly true, but can be overcome with some intelligent business practices which capture existing resources, identify a strategy to deal with this market and actively promote the unique abilities of the practice to potential clients.

To conclude, interviews conducted with architects provide some rich context for the study and shed light on a profession which has embraced the studio environment as a forum for learning and team cross fertilisation. A transformational leadership style among architects is emerging in the sector, which demonstrates a move away from more dominant forms to one which offers unique emotion management abilities, both during the creative process and in dealings with internal and external stakeholders. These abilities, combined with capturing stakeholder knowledge, will provide resources to inform the firm strategy (Neel and Harrigan, 1996). This strategy, combined with a more commercial aptitude will provide the sector with a framework on how to improve market performance. A discussion of the quantitative findings will additionally add to this framework.

7.3 Leader Emotion Management and Innovation

Roper, Dundas and Love (2008) suggest that leadership skills which encourage and understand social and human relations are essential to promote innovation

in the workplace. Gadrey et al., (1995) suggest that strong leadership skills such as an ability to motivate and understand human resources are necessary to promote innovation. Leader EM is one such behaviour which can encourage innovation in the organisation. Research question 1 examines the direct effect between leaders' EM and the three components of firm innovation. Although, the findings are not significant, when firm size and firm performance are controlled for, those participants who are high in EM generate higher levels of innovation than those who are not. The findings support Rego et al. (2007), who state that leaders who are high in emotional intelligence create an environment to nourish the creative and social capital of the organisation. Similarly, this supports Zhou and George (2003), who state that leaders' emotion abilities stimulate social relationships with their teams, which lead to strong idea implementation. Therefore, leaders who are high in EM will enhance leader and follower relationships, resulting in greater creative activities (Wright and Cropanzano, 2004). The findings also support Yuvaraj and Srivastava's (2007) argument that EI is critical for firm success, which in this case is represented by innovation performance.

The research gaps suggested that the ability to form essential relationships in order to access innovation would be greatly assisted by strong emotionally intelligent behaviours. However, research question 1(a), which examined the relationship between leader EM and accessing innovation, yielded few findings, even when firm size and firm revenue were used as control variables. These findings may be explained by the fact that two out of the four metrics which examined accessing innovation were calculated using sales revenue,

which for this sector was quite low at the point of survey in 2010. In addition, the remaining variables for accessing innovation focused on the number of new services coming from outside the firm and the use of multiple skill groups in accessing the sector. The small size of the firms surveyed may reflect the reduced requirement for multiple skill groups and further reduced the scores for this component of innovation. However, further investigation may be required to assess these relationships.

Leader EI was also identified as a necessary behaviour to manage challenging emotions during the building phase of innovation in order to guide employee through difficult emotions (Gilley et al, 2008; Janssen et al., 2004). Research question 1(b), which examined this relationship between leader EM and building innovation, also yielded few results. This was surprising but may also be as a consequence of the small size of the firms surveyed, where the opportunity to construct large teams was minimal. In addition, three of the four measures for building innovation were calculated using sales revenue data of the firms which was often low due to the performance in the external market conditions in 2010. The fourth measure of building innovation measured team working activity, which was not relevant for a large percentage of small firms which answered the survey. However, some further studies across larger firms may provide some further insight into the relationship between leader EM and building innovation. The role of leader EM may also have affected the results for research question 1 (a) and 1 (b), where the overall levels of EM in architects was quite low in comparison to other empirical studies.

In order to commercialise innovation, an ability to manage key stakeholders such as customers and building contractors requires strong leadership abilities such as EM. The findings from research question 1(c) suggest a direct effect relationship between EM and commercialising innovation. This relationship increases when firm size or sales revenue are included as control variables. EM, which consists of emotion management and emotion relationship abilities, is strongly associated with the quality of everyday social interactions (Mayer and Salovey, 1997). Commercialising innovation involves examining the firm's customer relationship management and marketing and branding abilities. This research suggests that participants who have high levels of EM will be more effective at customer relationship management and branding, which will ultimately enhance the commercialisation of the firm's innovations. Although the effect sizes are small, the findings indicate that EM may encourage creative ideas to connect with the customer and marketing and branding of the firm. This provides Irish architects with a starting point to examine the weak link of commercialising innovation identified in their innovation value chain. This supports Zhou and George (2003) findings that EM encourages intrinsically motivated employees to be curious and learning oriented, cognitively flexible, willing to take risks and persist in overcoming challenges and obstacles. These motivations, coupled with EM, can translate innovation activities into commercial successes.

Overall, the quantitative findings provide evidence of a link between EM and innovation, when controlling for firm size. An understanding of this link will facilitate firms to identify and use resources to form the basis for a resource-led

strategy. An understanding of the link between EM and commercialising innovation will also provide the sector with an opportunity to increase customer relationship management initiatives and market the firm in a targeted and novel manner. These contributions to the literature are now discussed, along with the contributions of the qualitative findings.

7.4 Research Contributions

This research makes three key contributions. These relate to understanding the businesses processes in architecture, and to our understanding of the variables of EM and innovation and their relationships.

Firstly, this research represents the only comprehensive study of the sector since Blau's (1984) research almost three decades ago. The study reveals a P^2 firm which supports Pinnington and Morris's (2002) suggestion of a common firm type within the profession. The findings demonstrate leader awareness of the difficulties involved in leading creative individuals, which supports Winch and Schneider's (1993) similar findings. Blau's (1984) suggestion that transactional leadership is common in architecture firms is not supported; the qualitative findings suggest the emergence of a transformational style of leadership in the profession since her study. There is also no support for Jones et al.'s (2008) suggestion that strategies in architecture firms are an aggregation of the individual interests of the team. Furthermore, there is little support for Coxe et al.'s (1997) suggestion that strategies for professional firms incorporate technology and values. Instead, architectural practices simply react

to changing markets with little understanding of how their resources may increase the firm's offering to the market. The findings support Guttman's (1988) description of low earnings in the sector in the 1960s, and suggest that little has improved. The status of the profession outlined by Blau (1984) is supported by the findings, and also suggests that little has changed in terms of public perception of the profession.

The second contribution of this thesis relates to the link between EM and innovation, which supports previous empirical evidence relating EI to outcomes such as supervisor-rated performance, transformational leadership, academic performance, peer working relationships and team performance (Cote and Miners, 2006; Rode et al., 2007; Rosete and Ciarrochi, 2005; Sirkwoo Myeng-Gu and Shapiro, 2008; Stubbs, Koman and Wolff, 2007). However, there is little evidence of links between EI and tangible performance measures such as innovation (Van Rooy and Viswesvaran, 2004). Likewise, the research findings on EM provide a valuable contribution to the literature debates on the MSCEIT (Ashkanasy and Dasborough, 2009; Mayer, Salovey and Caruso, 2008; McCann et al., 2002), and propose an immediate consideration of the cultural bias of the consensus scoring sample of the measure. The findings also add to the literature which promotes EI as a behavioural tool in a social and work context (Mayer, Salovey and Barsade, 2002). The findings on leader EM and commercialising innovation also builds on the scant literature in this area and offers a starting point for further research, which has potential to yield useful information in the commercialisation of innovation for service firms. This research also

contributes to Hodgkinson and Healy's (2008) call for further studies on the less cognitive aspects of cognition (such as intuition and emotion) to help develop capabilities within organisations.

Thirdly, this study provides empirical data on service firm innovation. The findings contribute to the literature, which suggests a dearth of suitable measures to capture service firm innovation, and adds a bank of empirical findings to the innovation debate (Cainelli, Evangelista and Savona, 2006; Coombs and Miles, 2000; Evangelista, 2000; Mansury and Love, 2008; Tether, 2005). The application of the NESTA innovation scale to Irish architectural firms also contributes to the empirical evidence of the measure, and provides useful comparison data. These empirical findings prompt further cross-cultural research of this type of service innovation in countries other than Ireland and the UK.

7.5 Implications for Practice

These findings provide the architectural sector with a framework on how to optimise their business processes during difficult market conditions. The research has identified that EM, which forms a crucial part of the business processes in architecture, can be harnessed to improve innovation, especially commercialising innovative outputs. The quantitative scoring of EM shows that senior architects achieved 'low average' scores in their management of emotions, in comparison to their international counterparts who scored in the 'high average' score range (Lopes and Brackett, 2004; Lopes and Salovey, 2006; Mayer, Salovey and Caruso, 2002). This is worrying, given that EM measures the ability of individuals to capture information from feelings to make improved decisions and solve problems. Low scores may indicate conflict and antagonistic leader behaviours which damage social relationships in the work context (Lopes et al., 2004). Low EM scores may also reduce the motivational and communication powers of the senior team, which may affect social interaction between the leader and the team (Cunningham, 1988). One way to improve EM scores is to provide the profession with training in EI to increase their EM abilities over a period of time.

The measure of innovation used in the study uniquely captures the contribution of stakeholders to the innovation process and its translation into commercial outputs. This measure has been specially designed for architect firms and allows firms to capture hidden innovations. Empirical findings demonstrate that innovating firms experience five times the sales growth of non-innovating

firms (NESTA, 2009). Although the Irish architectural sector appears relatively strong in accessing and building innovation, the low scores on commercialising innovation are of concern for the sector. It is evident that architects must alter their attitudes to the promotion and branding of the profession. An improvement in EM levels will improve client relationship management. Evidence has shown that increased direct client contact promotes higher project quality, increased client repeat rate and high value projects (Blau, 1984). There is now an opportunity for Irish architectural practices to develop their capabilities and commence the process of developing their brand and promoting their specialised services. This business awareness must be incorporated as part of the curriculum at architectural schools, and can sit alongside the technical elements of the profession, because currently most architectural schools are focused primarily on design at the expense of client relationship management skills (Harrigan and Neel, 1996:71). The findings also provide the RIAI with quantitative data on financials and firm size, which can be used to track performance and chart a strategy for the sector.

To summarise, this thesis makes a contribution, not only to academic knowledge and debate but may also be useful to educators, the architectural profession, employers and individual architects.

7.6 Limitations of the Study

This study has several limitations. Firstly, although it identifies the impact of leader behaviours such as EM on innovation, there are many other unidentified

variables which could also contribute to the relationship between EM and innovation. These may include other leadership traits, such as personality and leadership styles (Bass, 1985; Burns, 1978). Future studies could examine the role of EM in leadership member exchange, which analyses the levels of trust between the leader and the top team (Graen and Uhl Bien, 1995). This could provide key insights into optimum team performance management.

The second limitation relates to the sample. Although the firms' level of response, 210 (37%), is relatively high, the study lacks generalisability due to its focus on a single industry and the relatively small size of architecture firms. Also, the architectural sector has distinct characteristics in terms of its reputation for creative employees who provide a distinct challenge for leaders, and therefore the findings may be specific to architects. Although a descriptive comparison of Irish architectural firms with UK counterparts was conducted, which helps to overcome the limitations of analysing one cultural context, a focus on other professional service firms, such as finance, consultancy and legal practices, would provide sample diversity and increase universal validity.

A third limitation is that the information gathered on the innovation data is self reporting in nature which could lead to the relationships examined being confounded. However, the use of the MSCEIT as an ability model, which tests the cognitive structures of the leaders in the examination of emotion management, may reduce the amount of bias which is associated with the self reported data in the innovation measure.

A fourth limitation is the effect size of the relationships. Although these relationships offer new and interesting insights into the relationships between leader emotion management and innovation, the results may not be meaningful in terms of effect sizes. This prompts a further enquiry into other professional service firms to further assess the size of the relationships between EM and innovation.

The other limitation concerns the variables used to measure EM. Although the use of the EM branch of the MSCEIT is a stronger predictor of the quality of social interactions than the other three branches (Lopes et al., 2004), a study to include the other three may provide valuable data with which to study the overall emotional intelligence of leaders. Despite these limitations, the results of this research contribute significantly to a much better understanding of the effects of EI (in particular, EM) on performance outcomes such as innovation. In addition, the innovation measure provides a useful means for capturing the stakeholder knowledge of architectural firms.

7.7 Future Research

Suggestions for future research are to extend the study across other professional service firms, including accountancy, consultancy and in particular, the legal profession. Of particular interest would be an exploration of emotion management abilities within the legal sector, because lawyers and solicitors deal with many clients who are often angry, frustrated or vulnerable, due to their or other individual's actions. Also, the innovation survey could be

extended across other Irish professional service firms, in order to understand how innovation is developed and implemented, which in turn could be compared with those firms identified in the NESTA (2009) study.

CHAPTER EIGHT

Conclusion

This thesis explored the strategic leadership of architectural firms in Ireland. It examined the role of emotion management (a component of emotional intelligence) in developing innovation in architecture firms.

This study used both qualitative and quantitative methods to address the primary research objectives set out in Chapter 1. The qualitative approach involved a series of nine interviews with architects to examine the business landscape and unique challenges facing the profession. This served to identify a profession which has unique emotion management requirements which arise from the need to manage a multitude of diverse stakeholders. The lack of a coherent strategy within most firms suggests a profession which is not fully utilising emotion management to harness this innovation potential. A lack of commercialisation aptitude is evident, and is linked to the regulation on the marketing and promotion of the profession. The implications of this are evident in a reduction of over 60% in sales revenue recorded during the study. The findings from the qualitative element of the study greatly contribute to the dated literature on the business activities of the profession and offer some rich context and informed the choice of variables which the quantitative study uses to deepen the enquiry into the profession.

A quantitative survey based approach was used to gather data from 210 architectural firms in Ireland. A review of the literature revealed little evidence

of the effects of EM on performance outcomes, which prompted an examination of the relationship between emotion management abilities on firm innovation. Hierarchical multiple regression results support the relationship between emotion management and innovation. The findings suggest that the leader's emotion management abilities positively relate to accessing and building innovation when firm size and sales revenue are controlled for. There is also evidence of a relationship between emotion management abilities and the commercialisation of innovation.

Overall, the study provides an introductory analysis of the direct effect of emotion management on innovation as a performance outcome, and how emotion management abilities can become a unique resource for architectural firms. The study provides theoretical support and adds to the current literature on the links between emotional intelligence and performance outcomes in the business context (Cote and Miners, 2006; Rode et al., 2007; Sirkwoo Myeng-Gu and Shapiro, 2008; Van Rooy and Viswesvaran, 2004), how to capture hidden innovation in professional service firms (Cainelli, Evangelista and Savona, 2006; Coombs and Miles, 2000; Evangelista, 2000; Mansury and Love, 2008; Tether, 2005). The study also provides useful guidelines for management practice in the profession.

The research findings from both the qualitative and quantitative phases of the study show a profession which offers unique abilities throughout its business processes. These unique emotion management abilities can be used to help increase the innovation of the firm, through capturing the flow of knowledge

from internal and external stakeholders during the business processes. This will increase its innovation performance outcomes, and in particular, sharpen commercialisation abilities of the profession during exceptionally difficult trading times.

BIBLIOGRAPHY

Acs, Z.J. and D.B. Audretsch (1988) 'Innovation in large and small firms: an empirical analysis about what they do', *American Economic Review,* 78, 678-690.

AIA (2007) 'Fostering Talent in an Architecture Firm' adapted from an article by Jack Train. October 2007.

Amabile, T.M. (1988) 'A model of creativity and innovation in organisations', *Research in Organisational Behaviour*, 10, 123-167.

Amabile, T.M., Conti, R., Coon, H. Lazenby, J. and Herron, M. (1996) 'Assessing the work environment for creativity', *Academy of Management Journal*, 39(5), 1154-1184.

Amabile, T.M., Barsade, S.G, Mueller, J.S., Staw, B.M. (2005) 'Affect and creativity at work', *Administrative Science Quarterly*, 50, 367-403.

Amason, A.C. (1996) 'Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: resolving a paradox for top management teams', *Academy of Management Journal*, 39, 123-148.

Ancona, D.G. (1990) 'Top Management Teams: preparing for the revolution'. In *Applied Social Psychology and Organisational Settings*, ed. J.Carroll, Erlbaum: Hillsdale, New Jersey, 99-128.

Anderson, C. and Thompson, L.L (2004) 'Affect from the top down: How powerful individuals' positive affect shapes negotiations' *Organizational Behaviour and Human Decision Processes Journal*, 95(2).

Andrews, K. (1971) *The Concept of Corporate Strategy*, Dow Jones: Homewood, Illinois.

Ansoff, H.I. (1965) *Corporate Strategy*. McGraw Hill: New York.

Ashfort, B.E. and Humphrey, R.H. (1995) 'Emotion in the workplace' *A Re-Appraisal. Human Relations,* 48, 97-125.

Ashkanasy, N.M (1996) '*Perceiving and Managing Change in the Workplace'*. Management Paper Series, Graduate School of Management, University of Queensland, Australia.

Ashkanasy, N. M., Hartel, C.E. and Jordan, P.J. (1998) '*Workgroup Emotional Intelligence Profile (WEIP): A measurement of emotional intelligence in work teams'.* In A. Grandy, (Chair) 'Emotion and well being in the workplace:

conceptual and psychometric advance'.

Ashkanasy, N.M., Hartel, C.E. and Zerbe, W.J. (2000) *Emotions in the workplace: developments in the study of the managed heart*. Quorum Books: Westport, CT.

Ashkanasy, N.M., and Nicholson, G.J. (2003) 'Climate of fear in organisational settings: construct definition, measurement and a test of theory', *Australian Journal of Psychology*, 55, 24-29.

Ashkanasy, N.J., and Dasborough, M.T. (2009) 'Does leadership need emotional intelligence?' *Leadership Quarterly*, 20(2), 247-261.

Avia, M.D. (1997) 'Personality and positive emotions', *European Journal of Personality*, 11, 33-56.

Avolio, B.J., Walumbwa, F.O., Weber, T.J. (2009) 'Leadership: Current theories, research and future directions', *Annual Review of Psychology*, 60, 421-49.

Avolio, B.J. (2007) 'Promoting more integrative strategies for leadership theory building', *American Psychologist*, 62, 25-33.

Avolio, B.J., Gardner, W.L., (2005) 'Authentic Leadership development: getting to the root of positive forms of leadership', *Leadership Quarterly*, 16, 315-38.

Bain, P.G, Mann, L., Pirola Merlo, A. (2001) 'The Innovation Imperative: the relationships between team climate innovation and performance in research and development', *Small group research*, 32(1), 55-73.

Banbury, C.M and Mitchell, W (1995) 'The effect of introducing important incremental innovations on market share and business survival' *Strategic Management Journal*, 16, 161-182.

Bantel, K. and Jackson, S. (1989) 'Top management and innovations in banking: Does the composition of the top team make a difference?' *Strategic Management Journal*, 10, (special issue), 107-124.

Bar-On, R. (1997) *Bar-on emotional quotient inventory: a measure of emotional intelligence*, Multi health systems: Toronto, ON

Barney, J.B. (1991) 'The resource based model of the firm: origins, implications and prospects', *Journal of Management*, 17(1), 97-98.

Bar On, R.M. and Kenny, D.A. (1986) 'The moderator-mediator variable distinction in social psychology research: conceptual strategic and statistical considerations', *Journal of Personality and Social Psychology*, 51, 1173-1182.

Barsade, S.G. (2002) 'The ripple effect: emotional contagion and its influence on group behaviour', *Administrative Science Quarterly*, 47, 644-75.

Bartlett, M.S. (1954) A note on the multiplying factors for various approximations, *Journal of the Royal Statistical Society*, 16(2), 296.

Bass, B.M. (1985) *Leadership and performance beyond expectations*. Free Press: New York.

Bass, B.M. (1990) *Handbook of leadership: A survey of theory and research*. Free Press: New York.

.

Bartlett, C.A., and Ghoshal, S. (1989) *Managing across borders: the transnational solution*. Harvard School Press: Boston.

Baumeister, R.F., Heatherton, T.F., and Tice, D.M. (1994) *Losing control: How and why people fail at self regulation*, Academic Press: San Diego, CA.

Blau, J. (1984) *Architects and firms*, MIT Press: Cambridge.

Boer, H., Caffyn, S., Corso, M. Coughlan, G.J., Magnussson, M., Pavesi, S., Roncho, S. (2001) 'Knowledge and continuous innovation', *International Journal of Operations and Production Management*, 21(4), 490-503.

Boer, H., Rijnders, S. (2004) 'A typology of continuous improvement implementation processes', *Knowledge and Process Management*, 11 (4), 283-296.

Bolden, R and Gosling, J. (2006) 'Leadership competencies: Time to change the tune?' *Leadership Journal*, 2 (2), 147-63.

Bono,E.,Anderson,M. (2005) 'The advice and influence networks of transformational leaders' *Journal of Applied Psychology*, 90(6).

Bordin, E.S. (1965) 'Simplification as strategy for research in psychotherapy' *Journal of Consulting Psychology*, 29(6), 493-503.

Bower, J. and Doz, Y. (1979) 'Strategy formulation: a social and political process'. In D Schendel and C. Hofer (eds) *Strategic Management*, Little, Brown: Boston, 152-166.

Boyatiz, R., McKee, A., Goleman, D. (2002) *Primal leadership, realising the power of emotional intelligence*. Harvard Business School Publishing: Boston, MA.

Brackett, MA., Rivers, S.E., Shiffman, S., Lerner, N., Salovey, P. (2006) 'Relating emotional abilities to social functioning: A comparison of self report and performance measures of emotional intelligence', *Journal of Personality and Social Psychology*, Vol. 91, (4), 780-795.

Brackett, M.A., Salovey, P. (2004) 'Measuring emotional intelligence with the Mater-Salovey-Caruso Test (MSCEIT)', in G. Geher (Ed.) *Measuring emotional intelligence: common ground and controversy,* Nova Science Publishers: Happauge, NY:, 179-194.

Burke, C.S, Sims, D.E., Lazzaro, E.H. and Salas, E. (2002) 'Trust in Leadership: a multi level review and integration', *The Leadership Quarterly,* 18, 606-632.

Burgess, R.G. (1984) '*Field Research: an introduction to field research,* Allen and Unwin: London.

Burgoyne, J., Hirsh, W., Williams,S. (2004) *The Development of Management and Leadership Capability and its Contribution to Performance: The evidence, the prospects and the research need,* Research Report, Lancaster University, UK.

Burns, J.M. (1978) *Leadership.* Harper and Row: New York.

Cacioppo, J.T., Gardner, W.L. (1999) 'Emotions', *Annual Review of Psychology,* 50, 191-214.

Cainelli, G., Evangelista, R., Savona, M. (2006) 'Innovation and economic performance in service firms', *Cambridge Journal of Economics,* 30(3), 435-458.

Calori, R., Johnson, G., Sarnin, P., (1994) 'CEO'S cognitive maps and the scope of the organisation', Strategic Management Journal, 15(6), 437-457.

Camelo-Ordaz, C., Hernandez-Lara, A.B., Valle-Cabrera, R., (2005) 'The relationship between top management teams and innovative capacity in companies', *Journal of Management Development,* 24, 8, 683-705.

Carroll, J. B. (1993). *Human cognitive abilities: A survey of factor analytic studies*. Cambridge Press: New York.

Caruso, D.R., Mayer, J.D. and Salovey, P.(2002), 'Relation of a measure of emotional intelligence to personality', *Journal of Personality Assessment,* Vol.79, 306-20.

Cassell, C. and Symon, G. (2006) 'Taking qualitative methods in organisation and management research seriously', *Qualitative Research in Organisations and Management: An International Journal,* 1, 4-12.

Cassiman, B. and Veugelers, R (2002) 'R&D cooperation and spillovers:some empirical evidence from Belgium', *The American Economic Review,* 92(4), 1169-1184.

Chesbrough, H. (2003) *Open Innovation: the new imperative for creating and profiting from technology*. Harvard Business School Press: Cambridge, MA.

Cohen, M.A (2003) 'Determinants of environmental innovation in US manufacturing industries' *Economics Journal of Environmental Economics and Management*, 45(2), 278-293.

Conte, J.M., (2005) 'A review and critique of emotional intelligence measures' *Journal of Organisational Behaviour*, 26, 433-440.

Coombs, R. and Miles, I. (2000) 'Innovation, measurement and services, the new problematique' in S.J Metcalfe and I. Miles, (Eds) *Innovation systems in the service sectors. Measurement and Case study Analysis*, Kluwer: Boston, Dordrecht and London, 85-104.

Cooper, R., and Sawaf, J. (1997) *Executive EQ: Emotional intelligence in leadership and organisations*. Grosset/Puntam: New York.

Corbin, J., Strauss, A., (1990) 'Grounded Theory Research: Procedures, Canons, and Evaluative criteria', *Qualitative Sociology*, 13, 1, 3-20.

Cote, S., Miners, C.T.H. (2006) 'Emotional Intelligence, cognitive intelligence and job performance', *Administrative Science Quarterly*, 51, 1-28.

Coxe, W. (1997) *Success strategies for designing professionals. Super positioning for architecture and engineering firms.* McGraw Hill: New York.

Creed, W. E.,D., Miles, R.E., Kramer, R., Tyler, T.R. (Eds) (1996). *Trust in organizations: Frontiers of theory and research.* Sage Publications: Thousand Oaks, California.

Creswell, J.W. (1998) *Qualitative inquiry and research design: choosing among five traditions*. Sage: Thousand Oaks, California.

Damasio, A.R. (1994) *Descartes' Error: Emotion, reason and the human brain*. Putnam: New York.

Damanpour, F., Evan, W., (1984) 'Organisational innovation and performance: the problem of organisational lag', *Administrative Science Quarterly*, 29, 392-409.

Dasborough, M.T. (2006) 'Cognitive asymmetry in employee emotional reactions to leadership behaviours', *The Leadership Quarterly*, 17(2), 163-178.

Daus, C.S. (2005) 'The case for the ability based model of emotional intelligence', *Journal of Organizational Behaviour*, 26(4), 453-464.

Daus, C.S., Rubin, R., Smith, R.K, and Cage, T., (2005), '*Police performance: Do emotional skills matter?*' Paper presented at the 19th Annual Meeting of the

Society for Industrial and Organisational Psychologists, Los Angeles, California.

Day, A.L. and Carroll, S.A., (2008) 'Faking emotional intelligence (EI) comparing response distortion on ability and trait based EI measures', *Journal of Organisational Behaviour*, 29, 761-784.

De Sousa, R. (1990) *The rationality of emotion.* MIT Press: MA.

Dearborn, D.C., Simon, HA. (1958) 'Selective perception: a note on the department identification of executives', *Sociometry,* 21, 140-144.

Dillman, D.A (2007) *Mail and internet surveys: the tailored design method 2007 update with new internet, visual, and mixed mode guide* (2nd Ed.) John Wiley and Sons: New York.

Drucker, P.F. (1985) *Innovation and entrepeneurship: Practice and principles*. Heinmann: London.

Dundas-Hewitt, N., Love, J. (2008) *Human facilitators of innovation in Northern Ireland Business*, Innovation Lab, Report for the Department of Employment and Learning, Northern Ireland.

Eckman, P. and Friesen, W.V. (1975) *Unmasking the face: A guide to recognising emotions from facial clues*. Prentice Hall: Englewood Cliffs, NJ.

Eisenberg, N. (2000) 'Emotion, regulation and moral development', *Annual Review of Psychology*, 51: 665-97.

Eisenberg, N., Fabes, R.A., Guthrie, I.K, Reiser, M., (2000) 'Dispositional emotionality and regulation: their role in predicting quality of social functioning'. *Journal of Personality and Social Psychology*, 78, 136-57.

Eisenhardt, K., Zbaracki, M.J (1992), 'Strategic decision making', *Strategic Management Journal,* 13, 17-37.

Ekman, P, Friesen, W.V. (1975) *Unmasking the Face: A guide to recognising the emotions from facial clues*. Prentice Hall: Englewood Cliffs, NJ.

Elenkov, D.T., Judge, W., and Wright, P. (2005) 'Strategic leadership and innovation influence: an international multi-cluster comparative study', *Strategic Management Journal*, 26, 665-682.

Evangelista, R. (2000) 'Sectoral Patterns of Technological changes in services', *Economics of Innovation and New Technology*, 9, 183-221.

Falconbridge, J.R. (2006) 'Stretching tacit knowledge beyond a local fix? Global spaces of learning in advertising professional service firms', *Journal of Economic Geography*, 6, 517-540.

Ferguson, K.E. (1984) *The feminist case against bureaucracy.* Temple University Press: Philadelphia.

Fernandez-Berrocal, P. and Extremera, N. (2006) 'Emotional Intelligence, A theoretical and empirical view of its first 15 years of history', *Psicothema,* 18, 7-12.

Fiedler, F.E. (1964) *A contingency model of leadership effectiveness. In L.Berkowitz (Ed.) Advances in attribution theory*. Academic Press: New York.

Fineman, S. (1996) *Emotion in Organisations*. 3rd ed. Sage: London.

Finkelstein, S. (1992) 'Power in top management teams: dimensions, measurement and validation'. *Academy of Management Journal* 35,505-38.

Finkelstein, S. and Hambrick, D. (1996) *Strategic leadership*. West Publishing Co: St. Paul, Minnesota.

Fisher, C.D (1997) *Moods and emotions while working- missing pieces of job satisfaction.* Bond University [Queensland] School of Business Discussion Papers (No.64).

Fox, S. and Spector, P.E. (2000) Relations of emotional intelligence, practical intelligence, general intelligence, and trait affectivity with interview outcomes: its not all just 'G'. *Journal of Organisational Behaviour,* 21, 203-220.

Freel, M.S. (2005) 'Patterns of innovation and skills in small firms', *Technovation,* 25, 123-134.

Freel, M.S. and Robson, P.J. (2004) 'Small firm innovation, growth and performance-evidence from Scotland and Northern England', *International Small Business Journal*, 22, 561-575.

Freeman, R.E R. Edward; Reed, David L (1983) 'Stockholders and stakeholders: A new perspective on corporate governance' *California Management Review*, 25(3), 88-106.

Frijda, N.H. (1986) *The emotions*, Cambridge University Press: Cambridge.

Gadrey, J., Gallouj, F., and Weinstein, O. (1995) 'New models of innovation-how services benefit industry', *International Journal of Service Industry Management*, 6, 3, 4-16.

Galbraith, J.R. (1982) 'Designing the innovating organisation', *Organisation Dynamics*. 10, 5-25.

Gardner, H. (1983) *Frames of Mind*, Basic Books: New York.

Gardner, L and Stough, C.(2002), 'Examining the relationship between leadership and emotional intelligence in senior level managers' *Leadership and Organisational Development*, 23, 68-79.

Gardner, W.L., Avolio, B.J., Luthans, F., May, D.R., and Walumbwa, F.O. (2005) 'Can you see the real me? A self based model of authentic leader and follower development', *Leadership Quartely*, 16, 343-372.

George, J.M. (2000) 'Emotions and Leadership: The role of emotional intelligence', *Human Relations*, 53, 1027-1055.

Glaser, B.G. and Strauss, A.L. (1967) *The discovery of grounded theory: strategies for qualitative research*. Aldine de Gruyter: New York.

Gilley, A., Dixon, P., Gilley, J. (2008) 'Characteristics of leadership effectiveness: Implementing change and driving innovation in organizations', *Human Resource Development Quarterly*, 19(2), 153-169.

Goleman, D. (1998) *Working with Emotional Intelligence*. Bantam: New York.

Goleman, D. (1995) *Emotional Intelligence: Why it can matter more than IQ* Bloomsbury Publishing: London.

Graen, G. B. and Uhl-Bien, M. (1995) 'Relationship based approach to leadership: Development of leader member exchange (LMX) theory of leadership over 25 years: Applying a multi-domain perspective', *Leadership Quarterly*, 6(2), 219-247.

Grabowski, R., (1979) 'The implications of an induced innovation model', *Economic Development and Cultural Change*, 27(4), 723-734.

Gross, J.J. (1998) 'Antecedent and response focused emotion regulation: divergent consequences for experience, expression and physiology', *Journal of Personality and Social Psychology*, 74, 224-237.

Gross, J.J, John, O.P. (2003) 'Individual differences in two emotion regulation processes: implications for affect, relationships, and well being'. *Journal of Personality and Social Psychology*, 85, 348-62.

Guttman, R., (1988) *Architectural practice, a critical view*. Princeton: New York.

Hage, J. (1999) 'Organisational innovation and organisational change', Annual Review of Sociology, 25, 597-622.

Hage, J. and Dewar, R. (1973) 'Elite values versus organisational structure in predicting innovations' *Administrative Science Quarterly*, 18, 279-90.

Hambrick, D.C. and Mason, P. (1984) 'Upper echelons: the organisation as a reflection of its top managers', *Academy of Management Review*, 9:193-206.

Hamilton, V., Bower, G.H., Fridja, N.H. (1988) *Cognitive perspectives on emotion and management*. Kluwer Academic Publishing: MA.

Hansen, M. and Birkinshaw, J. (2007) 'The Innovation Value Chain', *Harvard Business Review*, 121-130.

Hansen, G., Wernerfelt, B., (1989) 'Determinants of firm performance: The relative importance of economic and organizational factors', *Strategic Management Journal*, 10(5), 399-411.

Harrigan, J.E., and Neel, P.R., (1996) *The executive architect*. Wiley: Canada.

Hatfield, E., Cacioppo, J.T., Rapson, R.L. (1994) *Emotional contagion*, Cambridge University Press: New York.

Hemphill, J.K and Coons, A.E (1957) *Development of the leader behaviour description questionnaire*. In R.M Stodgill and A.E Coons (Eds), 'Leader Behaviour: its description and measurement. Columbus: Bureau of Business research, Ohio State University, 6-3.

Hilgard, E.R. (1980) 'The trilogy of mind, cognition, affection and conation', *Journal of the History of the Behavioural Sciences*, 16, 107-11.

Hochschild, A. R. (1983) *The Managed Heart*. Berkeley: University of California Press.

Hodgkinson, G. and Healey M. (2008) 'Cognition in organisations', *Annual Review of Psychology*, 59, 387-417.

House, R.J. (1977) '*A 1976 theory of charismatic leadership'*, IN J.G Hunt and L.L. Larson (eds) leadership: the cutting edge. Carbondale: Southern Illinois University Press, pp.189-207.

House, R.J. Hanges, P.J., Javidan, M., Doffman, P.W., Gupta, V. and Associates (2004). *Leadership, culture and organisations: The Globe study of 62 societies*. Sage: Thousand Oaks, California.

Hull, F. (1988) 'Inventions from R&D: organisational design for efficient research performance', *Sociology*, 22(3), 393-415.

Huston, L. and Sakab, N. (2006) 'Connect and Develop: Inside Procter and Gamble's new model for Innovation', *Harvard Business Review*, March.

Hrebiniak, L.G. and Snow, C.C (1982) 'Top management agreement and organisational performance' *Human Relations*, 35(12), 1139-1158.

Imai, K., Nonaka, I., Takeuchi, H. (1985) 'Making the new product development process, how Japanese companies learn and unlearn', in *The uneasy alliance* (eds) K. Clark, R. Hays, C.Lorentz, Harvard Graduate School of Business: Boston, 337-375.

Isen, A.M (2001) 'An influence of positive effect on decision making in complex situations: theoretical issues with practical implications', *Journal of Consumer Psychology*, 11, 75-86.

Ivy, R. (2010) 'The Architecture of Growth' *The Architectural Record*, 198 (5) 21

Izard, C.E (2009) 'Emotion theory and research: Highlights, unanswered questions, and emerging issues', *Annual Review of Psychology*, Issue 1, 1-25.

Jackson, S.E. (1992) 'Consequence of group compositions for the interpersonal dynamics of strategic issue processing'. In *Advances in strategic management*, (eds) P. Shrivastava, A.Huff, and J. Dutton. JAI Press: Greenwich, Conn, 8, 345-82.

Janssen, O., (2000) 'Job demands, perceptions of effort-reward fairness and innovative work behaviour', *Journal of Occupational and Organisational Psychology*, 73, 287-302.

Janssen, O., Van De Vliert, E., and West, M.A. (2004) 'The bright and dark sides of individual and group innovation: A special introduction'. *Journal of Organisational Behaviour*, 25, 129-145.

Jensen, A.R (1998) The *g factor: The Science of Mental Ability*. Praeger/Greenwood: Westport, Connecticut.

Johnson, P.R., and Indvik, J. (1999) 'Organisational benefits of having emotionally intelligent managers and employees', *Journal of Workplace Learning*, 11, 3, 84-88.

Jones, C., and Livne-Tarandach, R. (2008) 'Designing a frame: rhetorical strategies of architects', *Journal of Organizational Behavior*, 29(8), 1075-1099

Jordan, P.J., Ashkanasy, N.M., Hartel, C.E.J and Hooper, G.S. (2002), 'Workgroup emotional intelligence, scale development and relationship to team process effectiveness and goal focus' *Human Resource Management Review*, 12 (2), 195-214.

Kaiser, H.F (1958) 'The varimax criterion for analytic rotation in factor analysis' *Psychometrika*, 23(3), 187-200.

Kamara, J., Augenbroe, G., Anumba, C. and Carrillo, P. (2002) 'Knowledge management in the architecture, engineering and construction industry'. *Construction Innovation*, 2(1), 53-67.

Kamien, M. and Schwartz, N. (1982) *Market Structure and innovation*, University Press: Cambridge.

Kanter, R.M., (1977) *Men and women of the corporation,* Basic Books: New York.

Kassinis, G., Vafeas, N. (2002) 'Corporate boards and outside stakeholders as determinants of environmental litigation', *Strategic Management Journal*, 23(5), 399-415.

Keogh, P (2010) 'Letter from RIAI President Paul Keogh to Editor of Irish Times' *Irish Times*, 21st January.

Kerr, R., Garvin, J., Heaton, N., Boyle, E. (2006), 'Emotional Intelligence and leadership effectiveness', *Leadership and Organisational Development Journal*, 27, (4), 265-279.

Kets de Vries, M. (2001) *Leadership Mystique, A user manual for the human enterprise*. Pearson: London.

King, N. (2004) 'Template analysis' in Cassell, C.M., and Symon, G. (Eds), *Essential Guide to Qualitative methods in organisational research*, Sage Publications: London.

Knight, D., Pearce, C. L., Smith, K. G., Olian, J. D., Sims, H. P., Smith, K. A., (1999) 'Top management team diversity, group process and strategic consensus', *Strategic Management Journal*, 20, 445-465.

Koren, D., (2005) *Architects essentials of marketing*. Wiley: New Jersey.

Kvale, S., Brinkman, S. (2009) *Interviews: learning the craft of qualitative research interviewing*. Sage: California.

LaRossa, R. (2005) 'Grounded Theory Methods and Qualitative family research', *Journal of Marriage and Family*, 67, 837-857.

Larson, M.S., (1980) 'Proletarianisation and educated labour', *Theory and Society*, 9,131-176.

Laursen, K. and Foss, N.J, (2003) 'New human resource management practices, complementarities and the impact on innovation performance' *Cambridge Journal of Economics*, 27 (2), 243-263.

Laursen, K., Salter, A., (2005) 'Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms', *Strategic Management Journal*, 27, 131-150.

Law, K.S, Wong, C.S., Song, L.J., (2004) 'The construct and criterion validity of emotional intelligence and its potential utility for management studies', *Journal of Applied Psychology*, 89, 483-96.

Leiblein, M., Masden, T. (2009) 'Unbundling competitive heterogeneity: incentive structures and capability influences on technological innovation' *Strategic Management Journal*, 30, 711-735.

Leiponen, A. (2005) 'Skills and innovation', *International Journal of Industrial Organisation*, 23(5/6), 303-323.

Lewis, K.M. (2000) 'When leaders display emotion: how followers respond to negative emotional expression of male and female leaders' *Journal of Organisational Behaviour*, 21, 221-234.

Locke, E.A. (2005) 'Why Emotional intelligence is an invalid concept', *Journal of Organisational Behaviour*, Vol.26, 411-24.

Lopes, P.N., Brackett, M.A., Nezlek, J., Schutz, A., Sellin, I., and Salovey, P. (2004) 'Emotional intelligence and social interaction', *Personality and Social Psychology Bulletin*, 30, 1018-1034.

Lopes, PN, Salovey, P., Cotes, S., Beers, M. (2006) 'Emotion regulation abilities and the quality of social interaction', *Emotion*, 5, 113-18

Lubinski, D. (2000) 'Scientific and social significance of assessing individual differences: sinking shafts at a few critical points', *Annual Review of Psychology*, 51, 405-44.

Luthans, F., Avolio, B. J. (2003) 'Authentic leadership: A positive developmental approach' IN K. S.Cameron, J. E. Dutton and R. E. Quinn (Eds.) Positive *organisational scholarship: Foundations of a new discipline.* Berrett Koehler: San Francisco, CA, 241-258.

McDonough, E.F. (2000) 'Investigation of factors contributing to the success of cross functional teams', *Journal of Product Innovation Management*, 17, 221-235.

MacKinnion, D.W., (1965) 'Personality and the realisation of creative potential', *American Psychologist*, 20, 273-281.

Mandell, B., Pherwani, S. (2003), 'Relationship between emotional intelligence and transformational leadership style: a gender comparison', *Journal of Business and Psychology*, 17 (3), 387-404.

Mandler, G. (1975) *Emotions, their parameters and effects*. Raven Press: New York.

Mansury, M.A., Love, J. (2008) 'Innovation, productivity and growth in US business services: A firm-level analysis', *Technovation*, 28(1-2), 52-62.

Mathews, G., Zeidner, M., Roberts, R.D. (2002) *Emotional Intelligence: Science and Myth*. MIT Press: Cambridge, MA.

Mason, J. (1996) *Qualitative Researching.* Sage: London.

Mayer, J.D., and Salovey, P. (1997) 'What is emotional intelligence?' In P. Salovey and D. Sluyter (Eds) *Emotional Development and emotional intelligence: implications for educators*. Basic Books: New York, 3-31.

Mayer, J. D., Roberts, R. D., and Barsade, S. G. (2008) 'Human abilities: Emotional intelligence', *Annual Review of Psychology*, 59, 507-536.

Mayer, J. D., Salovey, P., Caruso, D. R., and Sitarenios, G. (2003) 'Measuring emotional intelligence with the MSCEIT V2.0', *Emotion*, 3, 97-105.

Mayer, J., and Salovey, P. (1990) 'Emotional Intelligence and Imagination', *Cognition and Personality*, 9:185-211.

Mayer, J., and Salovey, P. (2002) *The Mayer Salovey and Caruso Emotional Intelligence Test, Version 2.0.* Multi Health Systems: Toronto, Ontario, Canada.

MacCann, C., Roberts, R.D., Mathews, G., and Zeidner, M. (2004) 'Consensus scoring and empirical option weighting of performance based emotional intelligence tests', *Personality and Individual Differences*, 36(3) 645-62.

McDonald, F (2010) 'Speaking with Paul Keogh, President of RIAI' *Irish Times*, February 2nd.

McGarvey, R. (1997), 'Final score: Get more from employees by upping your EQ' *Entrepreneur*, 25 (7), 78-81.

McMullin, R.E., Giles, T.R. (1981) *Cognitive behaviour therapy, a restructuring approach*. Grune and Stratton: New York.

McNamara, G., Lucie, R.A., Thompson, G.H. (2002) 'Examining the effect of complexity in strategic group knowledge structures on firm performance', *Strategic Management Journal*, 23, 153-160.

Meyer, J.P., Allen, NJ (1990) 'Affective and continuance commitment to the organization: Evaluation of measures and analysis of concurrent and time-lagged relations'. *Journal of Applied Psychology*, 78, 538-551.

Moorhead, G, Neck, C (1995) 'Groupthink Re-modelled: The Importance of Leadership, Time Pressure, and Methodical Decision-Making Procedures' *Human Relations Journal*, 48(5) 537-557.

Miles,R.E, Snow,C. (1978) 'Organizational strategy, structure, and process' *Academy of Management*, 21(1).

Myers, S., Marquis, D. (1969) *Successful Industrial innovations: a study of factors underlying innovation in selected firms*. National Science Foundation: Washington.

Muchinsky, P.M. (2000) 'Emotions in the workplace: the neglect of organisational behaviour', *Journal of Organisational Behaviour*, 21, 801-805.

Murphy, K.R. ed. (2006) *A critique of Emotional Intelligence: What are the problems and how can they be fixed?*. Erlbaum: Mahawh, New Jersey.

NESTA (2009) 'Measuring sectoral innovation capability in nine areas of the UK economy', *Report for NESTA Innovation index project* by Roper, S., Hales, C., Bryson, J.R., Love, J.

Oldham, G.R. and Cummings, A. (1996) 'Employee creativity: personal and contextual factors at work', *Academy of Management Journal*, 39:3, 607-634.

Omta, SWF, and Bouter, L.M (1997) 'Management control of biomedical research and pharmaceutical innovation' *Technovation*, 17(4), 167-179.

Ortony, A., Clore, G.L. and Collins, A.M. (1988) *The cognitive structure of emotions*. Cambridge University Press: Cambridge, England.

Palmer, R.P., Gignac, G., Manocha, R., and Stough, C. (2005) 'A Psychometric evaluation of the Mayer, Salovey and Caruso Intelligence Test Version 2.0', *Intelligence*, 33, 285-305.

Parrott, W.G. (2002) *The functional utility of negative emotions. In the wisdom in feeling: Psychologica processes in emotional intelligence*, ed. L Feldman Barrett, P. Salovey, pp. 341-59, Guilford: New York.

Patton, M. (1990) *How to use Qualitative methods in evaluation*, Sage: London.

Palhaus, D.L., Lysy, D.C. Yik, M.S.M. (1998) 'Self report measures of intelligence: are they useful as proxy IQ tests?' *Journal of Personality* , 66, 525-54.

Peters, T.J., Waterman, R. (1982) *In Search of Excellence: Lessons from America's Best-Run Corporations.* Harper and Row: New York.

Pinto, M.B. and Pinto, J.K.(1990) 'Project team communication and cross-functional cooperation in new program development' *Journal of Product Innovation Management*, 7(3), 200-212

Pinnington, A. and Morris, T. (2002) 'Transforming the architect: ownership form and archetype change', *Organisation Studies*, 23(2)189-210.

Polkinghorne, D.E. (2005) 'Language and Meaning: Data collection in qualitative research' *Journal of Counselling Psychology*, 52 (2), 137-145.

Porter, M.E. (1980) *Competitive strategy*. Free Press: New York.

Porter, M.E. (1985) *Competitive Advantage.* Free Press: New York, Chapter 7.

Potter, J. (1996) *Representing reality: Discourse, Rhetoric and Social Construction.* Sage: London.

Putnam, L. and Mumby, D.K. (1993) 'Organisations emotion and the myth of rationality', IN Fineman, S. (Ed.) (2003) *Emotion in organisation*, Sage: London.

Quinn, J.B. (1980) *Strategies for change: logical incrementalism*. Dow Jones: Homewood, Il. 107-133.

Ramamoorthy, R., Flood, P.C., Slattery, T., Sardessai, R. (2005) 'Determinants of Innovative Work Behaviour: Development and Test of an Integrated Model', *Creativity and Innovation Management*, 14(2), 142-150.

Rego, A., Sousa, F and Pina e Cunha, M (2007) 'Leader Self Reported Emotional Intelligence and Perceived Employee Creativity: An Exploratory Study'*Creativity and Innovation Management Journal*, 16(30).

Roberts, R.D., Schulze, R., O'Brien, K., MacCann, C., Reid., J, and Maul, A., (2006) 'Exploring the validity of the Mayer, Salovey-Caruso emotional intelligence test (MSCEIT) with established emotions measures', *Emotion,* 6, 663-669.

Robson, C. (2002) *Real world research*. Blackwell Publishers: Oxford.

Rode, J.C., Mooney, C., Arthuad-Day, M.L., Near, J.P., Baldwin, T.T., Rubin, R.S., Bommer, W.H., (2007) 'Emotional Intelligence and individual performance: evidence of direct and moderated effects', *Journal of Organisational Behaviour*, 28, 399-421.

Roper, S., and Love, J. (2004) 'The organisation of innovation: collaboration, cooperation and multi functional groups in UK and German manufacturing' *Cambridge Journal of Economics*, 28(3) 1-18.

Roper, S. and Dundas-Hewitt, N. (2004) *Innovation in services sector in Ireland*. Study for ForFas by Innovation Lab Ireland.

Roper, S. Dundas, N. and Love, J.H. (2008) 'Modelling the innovation value chain', *Research Policy*, 37, 961-977.

Rosete, D., and Ciarrochi, J., (2005) 'Emotional Intelligence and its relationship to workplace performance of leadership effectiveness', *Leadership Organisational Development Journal*, 26, 388-99.

Riggio, R.E., Murphy, S.E. and Pirozzolo, F.J., (Eds) (2002) *Multiple Intelligences and leadership.* Lawrence Earlbaum Associates: Mahwah, New Jersey.

Scott, S. G., and Bruce, R. A. (1994). 'Determinants of innovative behaviour: A path model of individual' IN Aaker, D. (1984) *Strategic Market Management*. John Wiley and Sons: Canada.

Schulte, M.J. Ree, M.J. and Carretta, T.R. (2004) 'Emotional Intelligence: Not much more than g and personality', *Personality and Individual Differences*, 37, 1059-1068.

Senge, P.M (1990) *The Fifth Discipline: The Art and Practice of the Learning Organisation,* Doubleday Currency: New York.

Seidman, I.E. (1990) *Interviewing as qualitative research*. Teachers College: New York.

Shaver, P.R., Schwartz, J.C., and Wu, S. (1992) 'Cross cultural similarities and differences in emotion and its representation: a prototype approach' IN *Review of Personality and Social Psychology*, 13. Clark, MS, (ed.), Sage: Beverly Hills, CA, 175-212.

Shamir, B., House, R.J., Arthur, M.B. (1993) 'The motivational effects of charismatic leadership: a self concept based theory', *Organisation Science*, 4(2), 1-17.

Shipton, H., West, M.A., Dawson, J., Birdi, K., Patterson, M. (2006) 'HRM as predictor of innovation', *Human Resource Management Journal*, 16, 1.

Shiv, B., Loewenstein, G., Bechara, A.and Damasio, H. (2005) 'Investment behaviour and the negative side of emotion', *Psychological Science*, 16:435-439.

Sirkwoo, J., Myeong-Gu, S., Shapiro, D.L. (2008) 'Revisiting the link between leaders emotional intelligence and transformational leadership: the moderating role of emotional intensity', *Academy of Management Conference proceedings*.

Smith, K.G., Snith, K.A., Olian, H.P., Sims, Jr., O'Bannon, D.P., Scully, J.A. (1994) 'Top management team demography and process: The role of social integration and communication' *Administrative Science Quarterly,* 39, 412-438.

Solomon, R.C. (1993) 'The philosophy of emotions', IN *Handbook of Emotions*. Lewis, M., Haviland, J.M, (eds) Guilford: New York.

Staw, B.M. (1995) *Creative action in organizations,* Sage Thousand Oaks: California.

Sternberg, R.J. (1985) *Beyond IQ: A triarchic theory of human intelligence*. Cambridge University Press: New York.

Stodgill, R.M. (1974) *Handbook of leadership: A survey of the literature*. Free Press: New York.

Stodgill, R.M., (1948) *Personal factors associated with leadership: A survey of the literature*. Free Press: New York

Strauss, A. (1987) *Qualitative Analysis*, Cambridge University Press: New York.

Stubbs Koman, E., Wolff, S.B. (2008) 'Emotional intelligence competencies in the team and team leader: A multi-level examination of the impact of emotional intelligence on team performance', *Journal of Management Development,* 27(1), 55-75.

Symon, G. and Cassell, C. (2006) 'Neglected perspectives in work and organisational psychology', *Journal of Occupational and Organisational Psychology*, 79, 307-314.

Tannenbaum, A.S., Bogden, K., Rosner, M., Vianello, M., Weiser, G., (1974) *Hierarchy in organisations*. Jossey Bass: San Francisco.

Terziovski, M., Morgan, J.P (2004) 'Management practices and strategies to accelerate the innovation cycle in the biotechnology industry' *Technovation*, 26, 545-552.

Tether, B.S. (2005) 'So services innovate (differently)? Insights from the european innobarometer survey', *Industry and Innovation,* 12(2),153-184.

Thayer, R.E. (1966) *The origin of everyday moods,* Oxford University Press: New York, IN *The Leadership Quarterly* 15 (2004) 163-171.

Thorndike, R.K., (1920) 'Intelligence and its uses' *Harper Magazine,* Issue 140,227-335.

Trading Economics (2011) [online], available: http://www.tradingeconomics.com/china/gdp-growth/ [accessed 3rd February 2011].

Treiber, D. (1995) *Norman Foster*. Chapman and Hall: London.

Tsaousis, I., Vakola, M. and Nikalaou, I., (2004) 'The role of emotional intelligence and personality variables on attitudes toward organisational change', *Journal of Managerial Psychology*, 19(2) 88-110.

Vroom, V. and Paul, B. (1971) 'Relationship between age and risk taking among managers', *Journal of Applied Psychology*, 55, 399-405.

Weber, M. (1947) *The theory of social and economic organisations*. Translated by T. Parsons, Free Press: New York.

Wechsler, D. (1940) 'Non-Intellective factors of general intelligence' *Psychological Bulletin*, 37, 444-5.

Wiersema, M. F., and Bantel (1993) 'Top Management Team turnover as an adaptation mechanism: the role of the environment', *Strategic Management Journal*, 14, 485-504.

Weiss, H.M., Cropanzano, R. (1996) 'Affective events theory: a theoretical discussion of the structure, causes and consequences of affective experiences at work', in R.I. Sutton and B.M. Staw (eds) *Research in organisational behaviour*, Greenwich, NY, 18:1-74.

West, M.A. (1987) 'A measure of role innovation at work', *British Journal of Social Psychology*, 26, 83-85.

West, M.A. and Anderson, N. (1996) 'Innovation in top management teams', *Journal of Applied Psychology*, 81(6), 680-693.

West, M.A. and Farr, J.L. (1990) 'Innovation at work'. In M.A. West and J.L. Farr (Eds) *Innovation and creativity at work: Psychological and organisational strategies*. John Wiley: Chichester, 3-13.

West, M.A. (2002) 'Sparkling fountains or stagnant ponds: an integrative model of creativity and innovation implementation in work groups', *Applied Psychology: An International Review*, 51, 355-424.

West, M., Tjosvold, D. and Smith, K. (eds) (2003) *International Handbook of Organisational Teamwork and Cooperative Working*. Wiley: Chichester.

Whyte, W.H. (1956) *The Organisation Man*. Simon and Schuster: New York.

Woodman, R.W., Sawyer, J.E., and Griffin, R.W. (1993) 'Toward a theory of organisational creativity', *Academy of Management Review*, 18, 293-321.

Wright, T. and Cropanzano, R. (2004) 'The role of psychological well being in job performance', *Organisational Dynamics*, 33, 338-351.

Wynch, G. and Schneider, E. (1993) 'Managing the knowledge based organisation: the case of architectural practice' *Journal of Management Studies*, 30(6) 923-937.

Yukl, Gary, (2006) *Leadership in Organisations*. 6th Ed, Pearson: New Jersey.

Yuvari, S. and Srivastava, N. (2007) 'Are innovative managers emotionally intelligent?' *Journal of Management Research*, 7(3), 169-178.

Zajonc, R.B (1984) 'On the primacy of affect' *American Psychologist*, 39,117-123.

Zeidner, M., Matthews, G., Roberts, R.D. (2003) 'Development of emotional intelligence: towards a multi-level investment model' *Human Development*, 46, 69-99.

Zhou, J., George, J.M., (2003) 'Awakening employee creativity: the role of leader emotional intelligence', *The Leadership Quarterly*, 14, 545-569.

APPENDIX A

QUALITATIVE INTERVIEW QUESTIONS

Products/Services/Processes

1. What kind of services do architects provide?
2. Does your firm work on process improvements?
3. Is there a life cycle of an architectural project from point of consultation to final build?

Senior Management

4. Tell me about leadership, what style of leadership exists in your firm?
5. What is your preferred style of leadership?
6. With regards to strategy, does the senior team to meet with the team to discuss the strategy of the firm?
7. Does your firm consciously choose a strategy of the firm?
8. Is there a hierarchal structure your firm?
9. Are other levels within the organisation regularly consulted by the senior team?

Teams

10. How would you describe your teams?
11. Do cross functional teams exist in your firm?
12. What do you think of these types of teams?
13. Are they used to create new services/processes?
14. What are the job categories in your firm?

Markets

15. Does you firm conduct any marketing?
16. Do all architects compete or is their specific market segments within the industry?
17. How does your firm explore the client's needs?
18. How do clients decide which architect they go to?

Research and Innovation

19. Can you explain the term intellectual property?
20. How would one quantify R&D activities in architectural firms?
21. Are there staff specifically working on blue sky/innovative projects?
22. Can spend for these projects be quantified in monetary terms?

External Customers

23. Who are your main suppliers**?**
24. Can you list who collaborates with architects from start of project to end?
25. How do firms avoid their external suppliers using their designs for competitor projects?
26. Who are the external agent's architects liase with? Enterprise Ireland, RIAI etc.

APPENDIX B

PROFILE OF QUALITATIVE INTERVIEWEES

Title	Status	Firm/Organisational Profile	Region	Reference
Senior Partner	Retired	Large Architectural Design firm	Dublin	Architect 1
Managing Partner(s)	Managing Partner	Small architectural Design firm	Limerick	Architect 2
Managing Partner(s)	Managing Partner	Small architectural Design firm	Limerick	Architect 3
Architect	Associate	Large Architectural Design firm	Dublin	Architect 4
Managing Director	Sole Trader	Small architectural Design firm	Dublin	Architect 5
Architect	Module Director	School of Architecture	Limerick	Architect 6
Architect	Junior Associate	Project Management Firm	Limerick	Architect 7
Managing Partner	Senior partner	Large Architectural Design firm	Dublin	Architect 8
Managing Director	Senior partner	Large Architectural Design firm	Dublin	Architect 9

APPENDIX C

ETHICS APPLICATION FORM

Research Ethics Committee: Notification Form for Low-Risk Projects and Undergraduate Dissertations

DCU Research Ethics Committee has introduced a procedure for notification to the committee of
1. low-risk social research projects, in which personal information that is deemed not sensitive is being collected by interview, questionnaire, or other means
2. dissertations on undergraduate programmes in all disciplines.

The committee requires researchers to concisely answer the following questions within this form (before the project starts):

Project Title:
The impact of emotional intelligence on strategic consensus and innovation in professional service firms in Ireland.

Applicant Name and E-mail:
Kerrie O'Sullivan , kerrie.osullivan2@mail.dcu.ie

If a student applicant, please provide the following:
Level of Study (Undergrad/Taught MSc/Research MSc/Phd): PhD

Supervisor Name and E-mail:
Patrick Flood & Edel Conway**; Patrick.flood@dcu.ie, Edel.conway@dcu.ie**

Questions:

1. Provide a lay description of the proposed research (approx. 300wds):
This study will advance leadership, emotional intelligence (EI) and strategy research in the Irish and international context. It will investigate if emotional intelligence can be used as a strategic tool to help raise levels of strategic consensus and innovation in Irish professional service firms with a particular focus in architectural firms.

2. Detail your proposed methodology (1 page max.):
The study will use both qualitative and quantitative methods to evaluate the impact of EI on levels of consensus on strategy and innovation across a sample of approximately 40 architectural firms in Ireland.

The unit of analysis under investigation will be the organisation. The criteria are that each organisation must be knowledge intensive, have a leader (CEO or Managing Director) with a top management team. The research sample will be the leader (CEO or MD) and his or her top management team. This group of senior executives are collectively referred to as strategic leaders. The reason for this sample choice is that previous leadership studies have focused on dyadic studies which can be limiting and this research aims to satisfy the call in the literature to consider the contingencies which exist around this relationship.

The study will be a two phase process. The qualitative stage will conduct semi structured qualitative interviews to inform the quantitative questionnaire. A sample of 7-10 architects will be interviewed by the researcher, and these interviews will be audio taped. The information from the discourse will allow a more accurate design of the quantitative measure. The quantitative measure will be a comprehensive ten page questionnaire which will be administered to all of the members of the leadership team. The questionnaire will form a comprehensive survey instrument with which to examine the relationships between the variables. The questionnaire will be filled out by each leader or CEO and an average of five members of the top management team This will result in approximately six responses per organisation and will generate a total response from 240 participants. The time taken to complete each questionnaire is estimated to be 30 minutes. The candidate's supervisor has

conducted similar studies successfully. This involves the CEO endorsing the study to other members of the leadership group, and consequentially good response rates are usually forthcoming.

3. Detail the means by which potential participants will be recruited:
The architectural sector has been selected for the study. For the qualitative study, the candidate has made contact with some senior figures by letter and email within these sectors through names supplied by her supervisor and other DCUBS academics. The letter for the qualitative study will outline the nature of the discussion and the time involved in the study as well as mention of the potential recording of the interview. Once the results of the qualitative study have been studied, then the quantitative questionnaire will be designed.

A select number of companies will be chosen for the study based on the size of their top team. Access to the company will be prefaced with a letter or presentation to the leader of the company in order to gain endorsement of the study. This may involve contact with some of the leaders of the qualitative segment of the study as well as other suitable participants. If successful, it is envisaged that a memo will be signed by the leader and distributed to the top team eliciting their participation in the study. This method of gaining commitment of the whole leadership team has been successful in previous studies by the researcher's supervisor Professor Flood. The questionnaires are collected within two weeks through a central liaison person. Envelopes are provided which the participants can seal and if preferred can be mailed directly to the researcher. This research experience has also uncovered that senior teams prefer paper surveys as opposed to online surveys, and hence this study will use a hard copy questionnaire for each participant. The data gathered from the hard copy questionnaires will be inputted to statistical software packages and analysed accordingly. Alternatively the surveys can be supplied electronically, where a link is sent to the participants and they can be filled out online. The responses are then collected via survey monkey and analysed accordingly.

4. How will the anonymity of the participants be respected?
The qualitative interviews will be recorded but participants will in no way be identifiable through the transcribing of the discourse and subsequent analysis. If there are references to their company in the recording, these will be given generic names so as not to break anonymity. As part of the quantitative study, the questionnaires will contain generic questions which will in no way identify the participants. If the questionnaires are filled out in hard copy they will returned in non identifiable envelopes. If the questionnaires are filled out electronically the responses will file in automatically with non identifiable responses.

5. What risks are researchers or participants being exposed to, if any?
There are no risks envisaged for either party involved.

6. Have approval/s have been sought or secured from other sources? Yes/No
No

7. Please confirm that the following forms are attached to this document:
Informed Consent Form Yes/No Yes
Plain Language Statement Yes/No Yes

If not, explain why:

NB – The application should consist of <u>one file only</u>, which incorporates all supplementary documentation. The completed application must be proofread and spellchecked before submission to the REC. All sections of the form should be completed. Applications which do not adhere to these requirements will not be accepted for review and will be returned directly to the applicant.

The administrator to the Research Ethics Committee will assess, on receiving such notification, whether the information provided is adequate and whether any further action is necessary. Please complete this form and e-mail to fiona.brennan@dcu.ie

Please note: Project supervisors of dissertations on undergraduate programmes have the primary responsibility to ensure that students do not take on research that could expose them and the participants to significant risk, such as might arise, for example, in interviewing members of vulnerable groups such as young children.

In general, please refer to the Common Questions on Research Ethics Submissions for further guidance on what research procedures or circumstances might make ethical approval necessary (http://www.dcu.ie/internal/research/questions_ethics_submissions.pdf)

APPENDIX D

ETHICS APPROVAL

Dublin City University
Ollscoil Chathair Bhaile Átha Cliath

DCU

Prof. Patrick Flood
DCUBS

1st April 2010

REC Reference: DCUREC/2010/020

Proposal Title: **The impact of emotional intelligence on strategic consensus and innovation in professional service firms in Ireland**

Applicants: Prof. Patrick Flood, Dr. Edel Conway, Ms. Kerrie O'Sullivan

Dear Patrick,

This research proposal qualifies under our Notification Procedure, as a low risk social research project. Therefore, the DCU Research Ethics Committee approves this research proposal. Should substantial modifications to the research protocol be required at a later stage, a further submission should be made to the REC.

Yours sincerely,

pp Fiona Brennan

Dr. Donal O'Mathuna
Chair
DCU Research Ethics Committee

DCU
Office of the Vice-President
for Research

Office of the Vice-President
for Research
Dublin City University,
Dublin 9, Ireland

T +353 1 700 8000
F +353 1 700 8002
E research@dcu.ie
www.dcu.ie

APPENDIX E
SURVEY

Innovation Survey of Irish Architectural Practices

Managing Partner and Senior Team Questionnaire

Purpose of the Project

This project is part of a PhD study which aims to explore the levels and sources of innovation in large and small architectural practices. It examines how the practice's strategy and levels of emotional intelligence influences innovation. The survey is aimed at the managing partner in small practices, and the director and senior team in larger practices. The study is funded by the Irish Research Council for Humanities and Social Sciences (IRCHSS) and is supported by the Royal Institute of Architects in Ireland (RIAI).

Guide to the Survey

The survey will take 25 minutes to complete. In most cases you will be required to circle a box which corresponds most closely with your opinion on an issue. Some questions may seem similar, which is deliberate. Participation in the survey is confidential. The data collected will be reported in aggregate form only and the responses of individuals cannot be identified. A high response rate is critical as it will inform practice and teaching in the architectural sector in Ireland now and in the future. In return for your participation, you will be provided with a copy of the findings.

Researcher Profile

Kerrie O'Sullivan is a PhD researcher at Dublin City University Business School. Her expertise lies in the areas of leadership, strategy and organisational behaviour, focusing on the effects of emotion management on productivity. She is an accomplished business generalist who has worked with blue-chip company Kerry Group plc, gaining experience in acquisitions, project management, sales, management, marketing and customer services.

Contacts:

Any queries in relation to this survey, please contact the researcher or her supervisors:

Kerrie O'Sullivan, DCUBS E: kerrie.osullivan2@mail.dcu.ie, T: 01-7005742, M: 087-6841865
Professor Patrick Flood, DCUBS, E: patrick.flood@dcu.ie, T: 01-7006943
Dr. Edel Conway, DCUBS, E: edel.conway@dcu.ie, T: 01-7008895

This study has been approved by the DCU ethics committee reference REC/201
0ueries in relation to ethics can be directed to fiona.brennan@dcu.ie/ Tel: 01 7007816

About You

1. What is your job title?

   ○ Managing Principal /Director ○ Partner ○ Architect ○ Other_____

2. Are you? ○ Male ○ Female

3. How many years post secondary education have you completed? _____ years

4. What is your highest level of education?

   ○ PhD ○ Masters ○ Degree ○ Advanced Certificate (below degree) ○ Other_____

5. How long have you worked in this company? _____ years _____ months

6. How many years of experience do you have in this industry? _____ years _____ months

7. Do you manage or supervise any employees? ○ Yes ○ No

8. If Yes, how many people do you manage? _____ employees

Your Practice

1. What year was your practice established? _____

2. Is the practice? …

   ○ Irish-owned ○ Foreign-owned ○ Joint Irish and foreign-owned ○ Other _____

When asked about your practice in the remainder of the questionnaire, it would be appreciated if you would only consider your firm's Irish operation, excluding overseas practices/companies

3. Thinking about how your practice operates, would you describe it as providing ….?

   ○ Designs ○ Project /Build Management ○ Urban Planning ○ Other_____

4. Size and performance of the practice (This information will not be disclosed to any third party. It will only be used for statistical purposes)	2010 (Most recent financial year)	2007
a How many employees worked in your practice in 2010 and 2007?	_____ employees	_____ employees
b What is/was the revenue in your practice in 2010 and 2007 (please give best estimate)	€_____	€_____
c Has your practice won architectural awards in 2010 and/or 2007?	○ Yes ○ No	○ Yes ○ No
d If yes, how many awards have been won in 2010 and/or 2007?	_____ awards	_____ awards

Innovation

1. Over the past 3 years have you made any significant changes to existing business processes that you operate in the company? (e.g. increased efficiencies in processes of design brief to build) ○ Yes ○ No ○ Don't know

2. If yes, how much have you spent on these process changes over the last year? € _____ (best estimate)

3. Has your practice conducted any research to develop new design methods, processes or services in the last year? ..... ○ Yes ○ No ○ Don't know

4. If yes, what is the estimated spend on this research? Please include expenditure on salaries, wages and staff time, as well as equipment or any bought-in services. €_____

5. What percentage of your current sales come from new services introduced over the last 3 years? _____ %

6.	Do you ever obtain ideas and information from external organisations such as clients, competitors or consultants to develop:				If yes what percentage
a.	new designs, services or processes?	○ Yes	○ No	○ Don't know	_____%
b.	existing designs, services or processes?	○ Yes	○ No	○ Don't know	_____%

7.	Aside from this research, has your practice invested in improving existing design methods or services in the last year?	○ Yes	○ No	○ Don't know	If yes, how much €_____

9. How many of these design methods or services ideas are new to the market? (that is you introduced them before your competitors) _____

10. Who in the practice is involved in obtaining ideas and information needed to develop new or existing design methods or services? Please tick one or more

○ Directors/Principals ○ Partners ○ Architects ○ Technicians ○ Other_____

11.	Has the practice done any of the following in the last 3 years?	**Yes**	**No**	**Don't know**
a.	Implemented a new or significantly changed corporate strategy	○	○	○
b.	Implemented any advanced management techniques? (such as the introduction of an in-house knowledge management system)	○	○	○
c.	Implemented major changes in your practice? (such as introduction of cross functional teams or outsourcing of major business functions?)	○	○	○
d.	Implemented changes in your marketing strategy? (such as branding/ presentational changes to designs or services)	○	○	○
12.	Does your practice use project teams to develop new or improved design methods/processes or services?	○	○	○

13.	If yes, in relation to project teams in your practice, do you agree or disagree with the following?	**Strongly Agree**			**Agree**			**Strongly Disagree**
a.	Teamwork plays a major role in developing new design methods, services and processes.....	1	2	3	4	5	6	7
b.	Our development teams are cross functional and involve many people across the firm.....	1	2	3	4	5	6	7
c.	Teams operate very independently and are left to get on with solving problems.....	1	2	3	4	5	6	7
d.	Our firm invests in teamwork training.....	1	2	3	4	5	6	7
e.	Our teams are often comprised of clients, suppliers and building collaborators (engineers, surveyors etc).....	1	2	3	4	5	6	7
14.	In comparison to other architectural firms of your size, how would you rate yourself in terms of the following?	**Much Better**			**Comparable**			**Much Worse**
a.	Creating intellectual property	1	2	3	4	5	6	7
b.	Selecting those ideas which will generate the greatest return	1	2	3	4	5	6	7
c.	Design time from idea to market	1	2	3	4	5	6	7
d.	The use of design teams	1	2	3	4	5	6	7
e.	The extent to which you work with external partners on design of products and services.....	1	2	3	4	5	6	7
15.	How effective are each of the following as a source of ideas and information needed to <u>develop new or improved</u> design methods, processes or services?	**Highly Effective**			**Effective**			**Highly Ineffective**
a.	Building Partners	1	2	3	4	5	6	7
b.	Clients	1	2	3	4	5	6	7
c.	Competitors	1	2	3	4	5	6	7
d.	Universities or Institutes of Technologies	1	2	3	4	5	6	7
e.	Government Research Institutes (Ireland or UK)	1	2	3	4	5	6	7
f.	Professional Associations, e.g. RIAI.	1	2	3	4	5	6	7

16.	Thinking about how your practice works with your clients, does it..?	**Yes**	**No**	**Don't Know**
a.	Involve customers in designs and services, evaluation and development?.....	○	○	○
b.	Monitor customer feedback to shape new design methods?.....	○	○	○
c.	Use structured client relationship management systems or approaches?	○	○	○
d.	Hold regular client seminars/ workshops on new design methods and services?	○	○	○
e.	Develop client specific solutions?.....	○	○	○
17.	Has your practice invested in improving your reputation and branding over the past year?(please include spending on advertising, PR and market research)	○	○	○

18. If yes, how much has your practice spent on improving your reputation and branding over the past year. Please give your best estimate: €_____

19. Who has been your most important source of help in <u>marketing/selling</u> new or improved designs/services:

_____

Strategic Approach

This next section examines the strategy of the practice. Please answer each question by circling one number which closely describes your answer

		Strongly Agree			Agree			Strongly Disagree
1.	Our number one priority is lowest cost relative to competitors	1	2	3	4	5	6	7
2.	The speed with which we develop our designs relative to our competition is an important priority for our firm	1	2	3	4	5	6	7
3.	Most of our designs and services compete in lower priced markets ...	1	2	3	4	5	6	7
4.	We work hard in each area of the practice at maintaining the lowest cost possible	1	2	3	4	5	6	7
5.	Our designs and services are sold to unspecialised markets	1	2	3	4	5	6	7
6.	We strictly enforce our quality control specifications	1	2	3	4	5	6	7
7.	We make profits by delivering above average quality designs and charging more for them	1	2	3	4	5	6	7
8.	Taking advantage of economies of scale is an important goal	1	2	3	4	5	6	7
9.	The quality of our designs and services far exceeds that of our competitors	1	2	3	4	5	6	7
10.	We focus on designs and services to meet the specialised needs of select clients. We don't try and be all things to all people	1	2	3	4	5	6	7
11.	Product quality is not the most important priority of this firm	1	2	3	4	5	6	7
12.	We can seize a business opportunity quicker than our competitors	1	2	3	4	5	6	7
13.	We introduce more new designs and services than our closest competitors each year	1	2	3	4	5	6	7
14.	Our brand name is an extremely valuable marketing asset	1	2	3	4	5	6	7
15.	Most of our designs and services compete in higher priced markets ..	1	2	3	4	5	6	7
16.	Our customers rate the quality of our designs and services as excellent	1	2	3	4	5	6	7
17.	We are faster in responding to the needs of our customers than our competitors	1	2	3	4	5	6	7
18.	Using our experience to cut through costs is a goal for this practice ..	1	2	3	4	5	6	7
19.	We make profit by selling large quantities of designs at low prices	1	2	3	4	5	6	7
20.	Our designs/services are sold to narrowly defined markets	1	2	3	4	5	6	7
21	We emphasise customer support (pre/post design and during build)	1	2	3	4	5	6	7
22.	We work hard at building a strong firm reputation	1	2	3	4	5	6	7

Managing emotions

This section is an assessment of your ability to manage emotions, Please read each scenario and circle the number which best describes your answer

		Very effective		Neutral		Very ineffective
1.	Maria woke up feeling pretty well. She had slept well, felt well rested, and had no particular cares or concerns. How well would each action help her to preserve her mood for the day ahead?					
a.	She got up and enjoyed the rest of her day……	1	2	3	4	5
b.	Maria enjoyed the feeling and decided to think about and appreciate all the things that were going well for her……	1	2	3	4	5
c.	She decided it was best to ignore the feeling since it wouldn't last anyway……	1	2	3	4	5
d.	She used the positive feeling to call her mother who had been depressed and tried to cheer her up ……	1	2	3	4	5
2.	Andrew works hard, if not harder than one of his colleagues. In fact, his ideas are usually better at getting positive results for the company. His colleague does a mediocre job but engages in office politics to get ahead. So, when Andrew's boss awards the annual merit award to this colleague, Andrew is very angry. How effective would each action be in helping Andrew feel better?	Very effective		Neutral		Very ineffective
a.	Andrew thought about all of the good things in his life and his work ……	1	2	3	4	5
b.	Andrew made a list of the positive and negative traits of his colleague ……	1	2	3	4	5
c.	Andrew felt terrible that he felt that way, and he told himself that it wasn't right to be so upset about something he could not control ……	1	2	3	4	5
d.	Andrew decided to tell people what a poor job his colleague had done and that he did not deserve the merit award. Andrew gathered memos and notes to prove his point, so it wasn't just his word ……	1	2	3	4	5
3.	Jane did not know when her bills were due, how many would arrive soon, or if she could pay them. Then the car broke down and her mechanic said it would be very costly to fix. As a result, Jane cannot fall asleep easily, wakes up several times a night and finds herself constantly worrying. How effective would each of the following actions be in reducing her worry?	Very effective		Neutral		Very ineffective
a.	Jane tried to work out what she owed, how much and when it was due ……	1	2	3	4	5
b.	Jane learned deep-relaxation techniques to calm herself down……	1	2	3	4	5
c.	Jane got the name of a financial planner to help her figure out how to manage her finances properly……	1	2	3	4	5
d.	Jane decided to look for a job that paid more money……	1	2	3	4	5

4.	Nothing seems to be going right for Ed. There is not much in Ed's life that he enjoys, or brings him much pleasure. Over the next year, how effective would each of the following be at making Ed feel better?	**Very effective**		**Neutral**		**Very ineffective**
a.	Ed started to call friends he hadn't spoken to in a while and made plans to see a few people……	1	2	3	4	5
b.	He started to eat better, to go to bed earlier and to exercise more……	1	2	3	4	5
c.	Ed felt that he was bringing people down and decided to stay by himself more until he could work out what was bothering him. He felt he needed more time alone……	1	2	3	4	5
d.	Ed found that relaxing in front of the television at night with a beer or two really helped to make him feel better……	1	2	3	4	5
5.	As Robert drove from work, a tractor-trailer cut him off. He didn't have time to honk his horn. Robert quickly swerved to the right to avoid getting hit. He was furious. How effective would each of the following actions be in dealing with his anger?	**Very effective**		**Neutral**		**Very ineffective**
a.	Robert taught the driver of the tractor a lesson by cutting him off a few miles down the road……	1	2	3	4	5
b.	Robert just accepted that these things happen and drove home……	1	2	3	4	5
c.	He yelled as loud as he could, cursed and swore at the driver……	1	2	3	4	5
d.	He vowed never to drive on that road again……	1	2	3	4	5
6.	John developed a close friendship at work over the last year. Today that friend completely surprised him by saying that he had taken a job at another company and would be moving out of the area. He had never mentioned to John that he was looking for other jobs. How effective would John be in maintaining a good relationship with this friend if he chose to respond in each of the following ways?	**Very effective**		**Neutral**		**Very ineffective**
a.	John felt good for his friend and told him that he was glad he got the new job. Over the next few weeks, John made arrangements to stay in touch	1	2	3	4	5
b	John felt sad that his friend was leaving, but he considered what happened as an indication that his friend didn't care about him. After all, the friend said nothing about his job search. Given that his friend was leaving anyway, John didn't mention it, but instead went looking for other friends at work……	1	2	3	4	5
c.	John was very angry that his friend hadn't said anything. John showed his disapproval by deciding to ignore his friend until the friend said something about what he had done. John thought that if his friend didn't say anything, it would confirm John's opinion that the friend was not worth talking to……	1	2	3	4	5

7.	Roy's teacher has called his parents to say that Roy is doing poorly at school. She says that he lacks attention, is being disruptive and cannot sit still. Roy's parents wonder what is going on, as they know that this particular teacher does not normally cope well with active boys. The teacher explains that their son will have to repeat the year unless he improves. The parents feel very angry. How helpful to their son is each of these reactions?	**Very effective**		**Neutral**		**Very ineffective**
a.	The parents told the teacher that this was a big shock to them, since this was the first time they ever heard there was a problem. They asked to meet with the teacher and also requested that the principal attend the meeting……	1	2	3	4	5
b.	The parents told the teacher that if she continued to threaten to have their son repeat the year, they would take it up with the principal. They said, 'If our son is left back, we will hold you personally responsible. You are the teacher and your job is to teach, not to blame the student'……..	1	2	3	4	5
c.	Roy's parents hung up on the teacher and called the principal. They complained about the teacher's threats and asked that their son be moved to a different classroom……	1	2	3	4	5
8.	Everything is going well for Liz. While others have been complaining about work, Liz has just gotten a promotion and a decent pay-rise. Her children are all very happy and doing well at school. Her marriage is stable and very happy. Liz is starting to feel very self important and finds herself tempted to brag about her life to her friends. How effective would each of the following responses be for maintaining her relationships at work?	**Very effective**		**Neutral**		**Very ineffective**
a.	Since everything is so good, it's okay to feel proud of it. But Liz also realised that some people see it as bragging or may be jealous of her and so she only talked to close friends about her feelings ……..	1	2	3	4	5
b.	Liz started to think of all the things that could possibly go wrong in the future, so she could gain perspective on her life. She saw that good feelings don't always last ……..	1	2	3	4	5
c.	Liz shared her feelings with her husband that night. Then she decided that the family should spend time together on the weekend and get involved in several family events just to be together ……..	1	2	3	4	5

Thank you and Comments

Thank you for filling out the survey. If you are willing to be contacted for any additional discussion, or have any comments please write in the section below

APPENDIX F

INVITATION EMAIL

Mr. Michael O'Connor
XYZ Architects
Main street
Town..

12th November 2010

Survey of Innovation in Architectural firms in Ireland = Structured CPD point

Dear Michael,

I would like to invite you to participate in a study to explore the levels and sources of innovation in architectural practices in Ireland. The aim of the study is to investigate how strategy and levels of emotional intelligence influences this innovation.

The study is conducted by Ms. Kerrie O'Sullivan at Dublin City University as part of a PhD study and is supported by the Royal Institute of Architects of Ireland. It is independently funded by the Irish Research Council for the Humanities and Social sciences (IRCHSS).

In the next few days, a questionnaire will be forwarded by post to all registered architectural practices in Ireland. The survey is addressed to the managing partner in small practices, and the director and senior team in larger practices.

I would be very grateful if you would contribute to this project, by completing a questionnaire which covers certain aspects of this topic. No more than 25 minutes on one occasion would be required. Be assured that any information provided will be treated in the strictest confidence.

In return for your participation you will be provided with a letter from DCU awarding you 0.5 structured CPD points**.** This letter can be uploaded to your CPD record as evidence on CPD Engage. The proposed deadline for returning the questionnaire is 29th November 2010. A high response rate is essential as it will inform both the development and practice of architecture in Ireland now and in the future. On the conclusion of this research, you will be provided with a paper on the overall findings.

I wish to thank you for taking the time to participate in this study.

Yours sincerely,

John Graby

Director of RIAI

APPENDIX G

COVER LETTER WITH SURVEY

Innovation survey of Irish Architectural Practices

Laurence Fewer
Partner
Boyd Barret Murphy O'Connor
North Quay House, Pope's Quay
Cork

12th November 2010

Dear Laurence,

In the past number of days, Mr John Graby, director of RIAI, has invited you to participate in a study examining architectural practices in Ireland. The aim of the study is to investigate how strategy and levels of emotional intelligence influences innovation in architectural practices. The study is funded by the Irish Research Council for the Humanities and Social Sciences (IRCHSS) and supported by the Royal Institute of Architects of Ireland (RIAI).

The research utilises a detailed survey (enclosed) in order to obtain quantifiable information on Irish architects and their practices. A high response rate is essential as it will inform both the development and practice of architecture in Ireland now and in the future. The results of this research will facilitate architects and other organisations in identifying possibilities for promotion and growth in architectural practices. The information provided will be treated as strictly confidential and under no circumstances will your individual responses be disclosed to other practices or third parties. Information received will be compiled at Dublin City University into an overall research report consisting of aggregated results from all participating practices. On the conclusion of this research, you will be provided with a paper on the overall findings.

In anticipation of your response I wish to thank you for taking the time to participate in this study. I am enclosing a pre-paid addressed envelope for which the survey can be returned if possible by 29th November. Should you have any queries concerning the project, please contact me by post, telephone or email.

Yours sincerely

_____

Kerrie O'Sullivan
PhD Researcher
E:kerrie.osullivan2@mail.dcu.ie
T: +353 1 7005742
M: +353 87 6841865

DCU Business School
Dublin City University
Dublin 9, Ireland

Telephone 353 (0)1 700 5742
Mobile: 353 (087) 6841865

APPENDIX H

POSTCARD

You recently received a survey of architectural firms in Ireland. This card is a gentle reminder, if you have not yet completed the survey, it would be most appreciated if you could do so now and return in the prepaid envelope as soon as possible. If you would like another copy of the survey, please contact the researcher below.

Completion of the survey will earn you 0.5 structured CPD points which can be added to your record on CPD Engage as a “self-defined activity”. You will receive a letter from DCU confirming your participation in the survey which can subsequently be uploaded as evidence.

We appreciate your valuable contribution to this research.

Best Wishes

_____

Kerrie O’Sullivan
PhD researcher Dublin City University Business School
kerrie.osullivan2.mail.dcu.ie /087 6841865

APPENDIX I

EMAIL WITH ELECTRONIC LINK

Earn Structured CPD points

Dear

In the past number of weeks you received a survey by post which invites you to participate in a study to explore the levels and sources of innovation in architectural practices in Ireland. The survey is addressed to the managing partner in small practices, and both the director and senior teams in larger practices. Multiple responses from larger practices are also welcomed

A high response rate to this study is essential as it will inform both the development and practice of architecture in Ireland now and in the future.. The target response rate is 200 firms, and to date 150 have returned their survey. Thank you sincerely to those of you who have responded. The proposed deadline for returning the questionnaire has been extended to 17th December 2010. I would be very grateful if you could now complete your survey and return it in the prepaid envelope. Alternatively you can fill out the survey online at: http://www.surveymonkey.com/s/architectsireland. If you have not received this survey, please contact: kerrie.osullivan2@mail.dcu.ie.

In return for your participation you will be provided with a letter awarding you **0.5 structured CPD points.** Completion of the survey can be added to your record on CPD Engage as a "self-defined activity" and the letter from DCU can be uploaded to as evidence. In addition, you will be provided with a report on the overall findings.

I wish to thank you for taking the time to participate in this study, and strongly urge your co-operation for this useful and insightful lens into the architectural sector in Ireland.

Yours sincerely,

John Graby

Director of RIAI

APPENDIX J

THANK YOU LETTER AND SECOND SURVEY

«First Name»
«Last Name»
«Job Title»
«Company»
«Address 1»
«Address 2»

12th December 2010

Innovation survey of Irish Architectural Practices

Dear «First Name»

In the past number of weeks, you have received a letter inviting you to participate in a study examining architectural practices in Ireland. The aim of the study is to investigate how strategy and levels of emotional intelligence influences innovation in architectural practices. The study is funded by the Irish Research Council for the Humanities and Social Sciences (IRCHSS) and supported by the Royal Institute of Architects of Ireland (RIAI).

One of the most important elements of the survey is to assess innovation and levels of strategic thinking in large firms, so that these findings can be used to try and gain an insight into successful management practices. One of the senior members of «Company» has recently filled out the survey and returned it to us. We would be most grateful if you could also complete the survey (enclosed) to allow us conduct a comprehensive analysis of larger architectural practices, which will allow us to conduct an indepth comprehensive review of the practice, when more than one senior manager completes the survey.

In return for your participation, you will be provided with a letter awarding you 0.5 structured CPD points. This letter can be uploaded to your CPD record as evidence on CPD Engage. In addition, we will also provide «Company» with a company specific report on the findings which can be used by you and your team to assess your practice. You will also received a copy of the overall findings for the architectural sector in Ireland.

In anticipation of your response I wish to thank you for taking the time to participate in this study. I am enclosing a pre-paid addressed envelope for which the survey can be returned if possible by 23rd December. You can also fill out the survey online at : Should you have any queries concerning the project, please contact me by post, telephone or email.

Yours sincerely

Kerrie O'Sullivan
PhD Researcher
E:kerrie.osullivan2@mail.dcu.ie
T: +353 1 7005742
M: +353 87 6841865

DCU Business School
Dublin City University
Dublin 9, Ireland

Telephone 353 (0)1 700 5742
Mobile: 353 (087) 6841865
Email: kerrie.osullivan2@mail.dcu.ie

APPENDIX K

FACTOR ANALYSIS FOR ACCESSING AND BUILDING INNOVATION MEASURE

Accessing Innovation Factor Analysis

Table 4.5 Component Matrix(a)

Ext. Collab Innov 3.15	*Component 1*
Innov 3.15.1	0.522
Innov 3.15.2	0.609
Innov 3.15.3	0.795
Innov 3.15.4	0.763
Innov 3.15.5	0.637

Extraction Method: PCA
a. 1 components extracted

Table 4.6 External Collaborators Innov 3.15 Total Variance

	Initial Eigenvalues			
Component	Total	% of Variance	Cumulative %	Total
1	2.469	41.149	41.149	2.469
2	1.163	19.378	60.527	
3	0.824	13.738	74.265	
4	0.616	10.274	84.539	
5	0.573	9.55	94.089	
6	0.355	5.911	100	

Extraction Method: PCA

Building Innovation Factor Analysis

Table 4.7 Component Matrix(a)

Variable	Component 1
Innov3.13.1	0.776
Innov3.13.2	0.770
Innov3.13.3	0.740
Innov3.13.4	0.699
Innov3.13.5	0.678
Innov3.14.1	0.539
Innov3.14.2	0.532
Innov3.14.3	0.429
Innov3.14.4	0.627
Innov3.14.5	0.604

Extraction Method: PCA
a. 1 components extracted.

Table 4.8 Building Innovation (Innov3.13 and Innov3.14)

	Initial Eigenvalues			
Component	Total	% of Variance	Cumulative %	Total
1	4.206	42.058	42.058	4.206
2	1.269	12.691	54.749	
3	1.092	10.92	65.669	
4	0.822	8.216	73.885	
5	0.628	6.28	80.165	
6	0.524	5.239	85.403	
7	0.447	4.474	89.877	
8	0.389	3.895	93.772	
9	0.343	3.433	97.205	
10	0.28	2.795	100.00	

Extraction Method: PCA