Project management in the Irish funds industry:

Matching the leadership competencies to project types

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Abstract

In this paper, the competencies suggested by Dulewicz and Higgs (1999, 2000, 2005) and expanded upon by Muller and Turner (2007, 2010a, 2010b, 2010c) were examined with relation to project managers in the Irish funds industry. 6 hypotheses were suggested to determine if there was any statistically significant differences in the competencies required. This included examining the competencies of male and female project managers (H1), the complexity (H2), contract type (H3), and strategic importance (H5) of the project, as well as the fund services segment (H4) where the project is taking place. An additional hypotheses (H6) was tested to identify the competencies required of project managers, where the importance of meeting the project's overall objectives was the definition of project success.

The identification of the of competencies of a success project manager can aid companies to appoint the correct person to the position. This type of research has never been conducted in Ireland, or the one fund services industry. The sectors chosen within the Irish funds industry were the custodian, fund accounting, transfer agency, and trustee segments. With the increased focus on the sector, due to increased regulation, and the looming exodus from the UK in the light of Brexit, there is an added need to determine the what competencies a project manager should have for different project combinations. Additionally, there has been no examination of Irish leaderships styles as a whole, using this approach.

The original methodology was to conduct a survey using the Leadership Dimensions' Questionnaire (LDQ) as devised by Dulewicz and Higgs (2005). However, this tool has been retired by the authors. As such, a survey tool was devised using the definitions of the competencies as the criteria to identify competency strengths. These were then examined against the 6 hypotheses to determine the which competencies were ranked higher for each test.

At $p < 0.05$ the results show that there are statistically significant differences in three competencies when gender is being tested, one when complexity is being tested, no differences for contract type, fund services segment, and strategic importance, and

five differences in competencies when the project's objectives being met was tested. Of the statistically significant differences in competencies, only strategic perspective (an intelligence competency) appeared more than once (in H1, and H6), while the other competencies to appear were achieving, conscientiousness, emotional resilience, interpersonal sensitivity (all emotional intelligence competencies), developing and empowering (both managerial competencies).

At $p < 0.1$ the results showed slightly more statistically significant differences. As before, both fund services segment and strategic importance showed no statistical significant differences in competencies. For gender, an additional five competencies showed differences, including all three intelligence competencies; contract type and complexity showed an additional difference in competencies, while the project's objective being met showed an additional two. Developing (managerial competency) appeared thrice (in H!, H2, and H3), while critical analysis and judgement, vision and imagination, strategic perspective (all intelligence competencies), and conscientiousness appeared twice each. Motivation and influencing (both emotional intelligence competencies) appeared once each.

The research suggests that there are clear differences in competencies required of project managers working in the Irish funds sector. These differences occur both in the gender of the project manager, as well as the contract type and complexity of the project. However, the competencies of project managers, where meeting the project's overall objectives is considered a key criteria for project success, shows the most number of statistically significant differences in competencies.

A number of further research projects are suggested based on this initial work. These include a larger, and more encompassing survey of project managers in Ireland, a determination if there is an Irish leadership style, and how multiculturalism might affect it, and the development of a new tool to analyse the competencies in more detail.

Submission of Thesis and Dissertation Declaration

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Introduction

Objectives

The objectives of this research are twofold. Primarily, it will serve to examine the leadership competencies required of successful project managers in the fund services industry in Ireland. Specifically, it will attempt to determine if there are any statistically significant differences across a number of hypotheses when it comes to the competencies required. These competencies will be examined based on gender of the project manager, the, the strategic importance, and contract type of the project, as well as the segment of the industry where the project is taking place, and the importance to meet the project requirements. The final test is based on the need by project managers to be able to lead their teams to successfully meet all the agreed upon goals of a project (Project Management Institute, 2013). The research will be based mainly on the works of Dulewicz and Higgs (1999, 2000, 2005) as well as Muller and Turner (2007, 2010a, 2010b, 2010c), along with a number of other papers in this area, mostly written in conjunction with one or more of the above authors.

Secondly, due to the retirement of the Leadership Development Questionnaire (LDQ), there is no currently available survey tool for gauging the competency strengths of project managers. As such, it is intended to attempt to create a new survey tool that might be able to replicate the research potential of the LDQ. While this would normally require many years research, with many thousands of respondents, it is hoped that this approach will form a basis of further research into this area.

Justification

An search[1] of the library catalogue of the National College of Ireland reveals that there are 23 books (11) or theses (12) on the subject of leadership in Ireland. Of the books, at least three deal with leadership in the public or healthcare sectors of the economy, two on education, one on industrial relations, and five on organisational culture as driven by leaders or managers. Of the theses, they deal with topics such as

[1] *Conducted on the 1st August, 2017*

leadership among chefs, the Nigerian banking sector, gender differences in the charity sector, and a number on the public sector or healthcare. A similar search[2] on the College's database of journal articles shows just 7 returns, when filter for peer reviewed academic articles, and the subject being leadership and Ireland. These articles relate mostly to education, social care, philanthropy, the religious in Ireland, library readers, and C.S. Parnell.

It is therefore clear that there is a dearth of research that has been conducted on leadership in Ireland, especially in the areas of leadership competencies, project management, and the Irish funds industry.

Outline

This thesis is organised into the following sections:

- Leadership and schools: Discussion and literature review of a number of schools of leadership.
- Competency theory: A review of the competency theory school of leadership, including project and non-project management research.
- Research gap: Identification of the research gap, and hypothesis to be tested.
- Research approach: A review and discussion of the research approach undertaken, including a review of possible survey tools, and the survey methodology.
- Results: A presentation of the research findings for each hypothesis.
- Discussion: Discussion on the findings by each hypothesis.
- Further research: Discussion of possible areas of future research.
- Conclusion: A brief review of the findings of the research.
- Appendices: Appendices with supporting documentation

[2] *Conducted on the 1st January, 2017*

Leadership

Leadership is a problematic concept to define or rationalise. It is often easier to define what it is not, than what it is (Kruse, 2013). Stogdill (1974) states of leadership that "*there are almost as many different definitions of leadership as there are persons who have attempted to define the concept*". Bill Gates defined leaders as "those who empower others", while John Maxwell suggested it was "influence – nothing more, nothing less" (Kruse, 2013). Kruse (2013) defined it as "a process of social influence, which maximizes the efforts of others, towards the achievement of a goal". Freud went so far as to suggest that leaders provide a sense of purpose and identity for people (Higgs, 2003). Rauch and Behling (1984) state the "*leadership is about articulating visions, embodying values and creating the environment within which things can be accomplished*" (Yukl, 2012)

This difficulty in defining leadership has given rise to multiple works on the subjects ranging from popular books, biographies of famous leaders, and academic works. Coffee and Jones (2000) claimed that more than 2000 books on leadership were published in 1999 (Higgs, 2003). A search on Amazon.com[3] for the term "leader", in the books category, returned more than 191,296 results, with 4,378 having been released in the preceding 90 days, and a further 1,076 "coming soon". In this context, it is clear why various schools of leadership thought have evolved over the last 90 years.

Schools of leadership

Since ancient times, people have tried to understand and classify the skills, and attributes required of leaders (Müller & Turner, 2007). Indeed, the ancient Greek philosophers Socrates (c470 – 399 BCE[4]), Plato (c428 – c348 BCE), and Aristotle (384 – 322 BCE) as well as the medieval philosopher, political theorist, and writer Machiavelli (149 – 1527 CE[5]) have attempted to work out what is leadership (Ronald, 2014). Republic (Plato, 380 BCE) and The Politics (Aristotle) both discuss the elements

[3] Conducted using www.Amazon.com on the 8th August, 2017, at 19:00 GMT
4 BCE = Before Common Era, previously BC
5 CE = Common Era, previously AD

of leadership, and each philosopher's thoughts on the matter (Roland, 2014). Over the course of history, a large number of schools of leadership have been suggested. These include such theories as participative theory, situational leadership, and skills theory (Amanchukwu, Stanley, and Ololube, 2015). Other researchers, such as Northouse (2016), suggest alternative leadership schools such as authentic, path-goal, behavioural, servant, adaptive, and psychodynamic. Higgs (2003) suggested that there are 6 major schools of leadership thought that have evolved to help categorise and organise this process (Higgs, 2003; Müller & Turner, 2007; Müller & Turner, 2010a; Juanjuan, 2014; Arami, 2016) (see Figure 1).

School	Main Idea	From
Trait	Effective leaders show common traits	1930s
Behaviour	Effective leaders adopt certain styles	1940s
Contingency	Effectiveness of leaders depends on situation	1960s
Charismatic	Transformational (relation) and transactional (process)	1980s
Emotional intelligence	Emotional intelligence has mire impact compared to intellect	2000s
Competency	Effective leaders demonstrate certain competencies including trait, style, and behaviour	2000s

Figure 1: 6 schools of leadership – adapted: Higgs (2003), Müller & Turner (2007), Juanjuan (2014), Arami (2016)

Trait

The idea that there are a particular set of characteristics that can be used to define leadership has been around for many millennia (McCarthy, Grady, & Dooley, 2011). The hereditary genius theory, as postulated by Galton, suggested that certain individuals have superior abilities that make them better leaders (Yukl, 2012). Under this hypothesis, it was even suggested that these abilities might have a genetic or inherited component (Gehring, 2007). As it developed, other authors suggested that there were great men who exhibited these traits, and that these men could change the course of nations (Gehring, 2007).

The great man theory later evolved into the trait theory. This theory suggests that every great leader, and in fact, every leader, has a particular set of characteristics that is common to them all (Yukl, 2012). These personality characteristics, or traits, are what distinguish leaders from non-leaders (Stogdill, 1974). This theory also

suggests that leaders are not made, but are born with the traits needed to lead (Stogdill, 1974).

Stogdill (1974) conducted a meta-analysis of 163 studies that had researched the traits needed for leadership. In this research, ten traits, that seemed to be highly correlated with leadership, were identified. However, Northouse (2016) notes that across a series of meta-analysis research papers (including Stogdill's 1974 paper); only 5 traits seem to be consistent. These were intelligence, self-confidence, determination, integrity, and sociability. Intelligence was defined as IQ of the individual, while self-confidence revolved around individuals' certainty regarding their own competences (Northouse, 2016). Determination was viewed as the ability to get the job done; how trustworthy and honest an individual was viewed as integrity; and sociability was the ability to be sensitive to the needs of others, as well as being courteous, friendly, tactful, and outgoing (Northouse, 2016).

Additional research by Goldberg (1990) suggests that instead of these 5 characteristics, there were another five traits, called the "Big 5 Personality Factors". These factors were classes as neuroticism, extraversion, openness, agreeableness, and conscientiousness (Northouse, 2016). These were defined as being vulnerable, hostile, depressed, or anxious (neuroticism); curious and insightful (openness); trusting, conforming, nurturing, and accepting (agreeableness), thorough, controlled, dependable, and decisive (conscientiousness); and sociable and assertive (extraversion) (Clarke & Robertson, 2006). Meta-analysis research suggests that there is a linked between leadership, and the "Big 5". Extraversion was found to be the most highly associated with leadership, while agreeableness was only weakly associated with leadership (Judge, Bono, Ilies, & Gerhardt, 2002).

Trait theory has a number of strengths that make it seem like a good basis for leadership. There is over a century of modern academic literature on the subject (Northouse, 2016), and many millennia of writings on the matter (Müller & Turner, 2010a). It is also appealing on an intuitive level, and gives people an idea of what to look for in a leader (Northouse, 2016). However, there are also a number of criticisms, of the theory. These include that there does not take into account the

situation in which the leader is needed. Stogdill (1974) noted that his previous research did not take situational factors into account. Additionally, there is no defined list of key characteristics required, or the proportion a leader should have for each one (Northouse, 2016). Kaiser, LeBreton, and Hogan (2013) noted that the over-exaggeration of certain traits were detrimental, and could lead to failure of the leadership style. There is also a risk of subjectivity, with leaders believing that only their combination of leadership traits will work. This is possibly the reason for the plethora of leadership books that have been published.

Behavioural

The theories around behaviour, as the influencing factor in leadership, were developed in the 1950s. The development came as a response to the perceived failings identified in the trait theories (Yukl, 2012). The behavioural theories suggest that certain leadership styles are characterised by their behaviours in a given situation (Müller & Turner, 2010c). Higgs (2003) also noted that leadership styles could be changed based on the situations, and skills development of the leader.

Initial research, at Ohio State examined how individuals interacted through the review of 1800 aspects of leadership behaviour (Northouse, 2016). Through this examination, they determined that there were 2 independent types of leadership behaviours; task and relationship (Stogdill, 1974). The task behaviours focus on organising work, scheduling, providing control to the work, and defining roles and responsibilities (Northouse, 2016). On the other side, a leader with relationship behaviours will focus more on building trust, respect, and camaraderie in an organisation (Northouse, 2016).

Further studies, at the University of Michigan, suggested that behaviours ran over a continuous spectrum (Yukl, 2012). At one end, there were leaders whose behaviour was oriented towards employees, with a strong emphasis on human relations. The other end of the spectrum was made up of leaders who had a production orientation, and were focused on the technical aspects of work, and the means to getting work done. Both of these studies seem to align with the Theory X and Theory Y

management styles, as suggested by McGregor (Bolden, Gosling, Marturano, & Dennison, 2003).

Blake and Mouton (1985) developed a two dimensional leadership graph, in which they plotted the task/production behaviours of leaders against the employee/relationship behaviours. Within this grid, they identified 5 major leadership styles; depending on where the leader was view on both behaviour types (Northouse, 2016) (see Figure 2). These styles ranged from the "country club" style, with low task/production and high relationship behaviours, to the "authority" style, with high task and low relationship behaviours (Müller & Turner, 2010c). In-between, the impoverished leader exhibits low relationship and task behaviours, and can be viewed as going through the motions (Northouse, 2016). Compromise leadership follows a middle of the road approach, while team leaders establish clear priorities, act in a determined way, but also stimulates participation (Northouse, 2016).

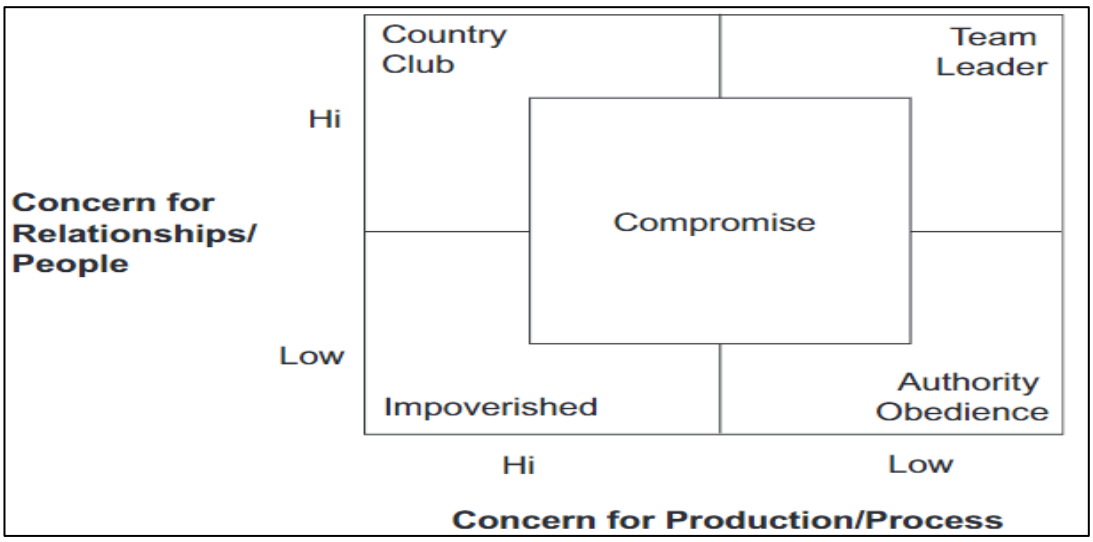

Figure 2: Blake and Mouton Managerial Grid – from (Müller & Turner, 2010c)

The behaviours theory provides a number of advantages over the trait theory. It allows for an understanding of leadership behaviours, as well as a providing a conceptual map of the theory (Northouse, 2016). However, it is not a neatly organised concept, and shows no clear association between behaviours and outcomes. Further, there is no universal style that is applicable to all situations (McCarthy, et al., 2011).

Contingency

Both trait and behavioural theory have been criticised for the failure to take into account the situational and organisational factors that a leader may face (Bolden, Gosling, Marturano, & Dennison, 2003). As such, contingency theory attempts to deal with these factors. Morgan (2007) suggests that there are four main concepts that must be taken into account when dealing with leadership. These are that the organisation is not a closed system, and needs to be carefully managed in order to meet the its internal and external needs and circumstance; the best way to organise and lead will depend on the task and the environment; management should attempt to get the correct alignment and good fit within the organisation; and, different types of leadership styles must be applied to different companies, depending on the environment. Leaders, as they interact within an organisation can change not only the internal environment, but also the employees with whom they interact (Khan, Nawaz, & Khan, 2016).

Building on the behavioural theory approach, Fiedler used the task/relationship approaches to leadership, to examine the leadership styles needed in given situations of task structure, and the leader's position of power (Bolden, et al., 2003). From this the Least Preferred Co-worker (LPC) model was developed. In this model, leaders who give high scores to LPCs are viewed as having strong relationship leadership approaches, while those who do the opposite are viewed as task orientated leaders (Ronald, 2014). In situations where there is a need for very high or low control, the task oriented leader was viewed as preferable, while the relationship oriented leader was viewed as being better in situations of moderate control (Ronald, 2014).

Additional research by Hersey and Blanchard (1977), suggests that the maturity of the follower or subordinate must also be taken into account (Bolden, et al., 2003). The authors broke down the maturity of the subordinates into 4 categories, from 1 to 4. The lowest maturity (M1) is viewed as being unwilling or unable to do the tasks, while the highest maturity (M4) is viewed as ready, willing, and able (Ronald, 2014). The other two maturities are suggested as inability to do the task, but willing to try (M2), and able to do the task, but think they are unable (M3). Given these scenarios,

the researchers suggested that there were four leadership styles that corresponded with the maturities, namely: directing (M1), where the leader provides clear and specific directions; coaching (M2), where there is a two-way communication process, and the leader helps to build the confidence and motivation of the follower; supporting (M3), where the leader and follower no longer have a directing relationship, and the responsibility for decisions is shared, and delegating (M4), where the leader views the follower as being competent, and able to take responsibility for the task (Bolden, et al., 2003).

A number of criticisms of the contingency models exist. Roland (2014) suggests that the fact that the LPC characterises leaders as either/or is a drawback. Also, within the Hersey/Blanchard model, there is no clear distinction between the M2 and M3 maturities (Roland, 2014). There is additional criticism as to where the different situations and leadership styles are needed (Northouse, 2016). The strengths of the models lie in the fact that they are easy to understand, and implement in companies (Northouse, 2016). Further, there is a prescriptive element when it comes to the leadership styles required, give the approach some credence (Northouse, 2016).

Charismatic

Under this theory, developed by James McGregor Burns, leaders and followers interact and develop in such way that both gain from the experience (Bolden, et al., 2003). These leaders, called transformational leaders, can achieve significant change in both themselves and others, through shaping, altering, and elevating their followers' motives, values and goals (Khan, et al., 2016). By doing this, they can turn their followers into leaders, and turn themselves into "moral agents" (Bolden, et al., 2003).

In "Leadership and Performance Beyond Expectations" this relationship was redefined as more of a one-way interaction between leaders and followers (Bass, 1985). Bass also identified that there were seven factors of leadership that defined the three leadership styles (Northouse, 2016). The factors were identified as idealised influence, inspirational motivation, intellectual stimulation, individualised

consideration, contingent reward, management by expectation, and non-transaction (laissez-faire) (Müller & Turner, 2010c). The first four factors were associated with a transformational leader, the next two with a transactional leader, and the last with a non-leader.

Of the factors for a transformational leader, idealised influence refers to the provision of a strong role model for followers to look up to. These leaders are normally charismatic, have high morals, and are trusted by their followers due to the attributes and behaviours (Khan, Nawaz, & Khan, 2016; Bolden, et al., 2003). Inspirational motivation allows the leader to appeal to the spirit of the individual as a motivational tool (Khan, et al., 2016). The leaders normally provide a strong vision of the goals, combined with the use of symbology or emotional appeals. This allows them to get their followers to go beyond their self-interest in the pursuit of a team goal (Northouse, 2016).

Intellectual stimulation involves giving followers the freedom to use their own innovation and creativity to solve problems, and identify solutions (Northouse, 2016). This also normally involves allowing followers to challenge the norms and assumptions of the organisation, the team, and even the leader (Khan, et al., 2016). Individualised consideration is concerned with the ability of a leader to provide a climate that is supportive of the individual needs of the followers (Bolden, et al., 2003). This can involve directing, coaching, or advising each follower as the situation dictates, and based on the requirements of the follower concerned (Northouse, 2016).

Bass identified a transactional leader as one who took a one size fits all approach, and only allows their followers to meet the organisational goals, but not their own goals (Bass, 1985). The first factor identified by Bass was the contingent reward factor suggests that a follower gets a reward based on their specific performance (Northouse, 2016). The second factor was management by exception, which is based on criticism and negative feedback (Bass & Avolio, 2003). The management by except has two types, namely: active, whereby a manager will correct issues, with a follower,

as they occur; and, passive, where the issues will be noted, but only highlighted to the follower at a later date (Bass & Avolio, 2003).

The third leadership style is that of the laissez-faire leader. This leader was viewed by Bass as a hands-off leader who let things slide (Bass, 1985). They abdicated their responsibility and provide no feedback, either positive or negative, to their followers (Bass, 1985). This leadership style has been called non-leadership (Müller & Turner, 2010c).

Kouzes and Posner (2002) suggested that transformational leadership as a collection of behaviours and practices. They identified five practices which all transformational leaders exhibit. These were inspire a shared vision, enable others to act, model the way, challenge the process, and encourage the heart (Kouzes & Pusner, 2002). These were defined as providing a compelling vision based on the dreams of the team (shared vision); creation of trust through collaboration and listening to others (enable others to act); demonstrate a clear path based on their own vision and philosophy (model the way; take risks and challenge the status quo (challenge the process); and provide rewards and praise for accomplishments (heart) (Northouse, 2016).

The charismatic leadership styles have a number of strengths. They are appealing to followers and provide clear interactions and processes between the followers and leaders (Northouse, 2016). They are also backed up by many research papers, which examine the large and varied situations they can be used in (Northouse, 2016). The theory also added to the ideas of other models of leadership (Northouse, 2016).

However, various criticisms have also been levelled at the model. These include the fact that there is no exact parameters for the factors, and some of them seem to overlap (Northouse, 2016). Lowe, Kroeck, and Sivasubramaniam (1996) suggest that the factors are highly correlated, with a correlation of 0.78. The main tool for the research, the Multifactor Leadership Questionnaire (MLQ), has been criticised for the same issues (Carless, 1998; Yukl, 2012). It has also suggested that the model may promote elitism and be undemocratic (Avolio, 1999). Additionally, there is also an

issue with whether the new vision, as provided by the leader, is, in fact, the correct vision (Northouse, 2016).

Emotional Intelligence

The emotional intelligence school was first suggested by Mayer and Salovey in 1990 (Dulewicz & Higgs, 2000). In this paper, they brought together a number of different concepts from social intelligence researchers to form the emotional intelligence concept. The concept of emotional intelligence was brought to the attention of the wider public by the work Goleman's book "Emotional Intelligence" (1996).

The underlying theory within this approach to leadership is that IQ alone was not a sufficient indicator of leadership (Dulewicz & Higgs, 1999). The emotional intelligence school of leadership presumes that all managers have a reasonable degree of intelligence, and the main differentiator between managers is their emotional response to situations (Müller & Turner, 2007).

There are three main models that are in use currently (Ackley, 2016, Mishar & Bangun, 2013). Mayer, Salovey, and Caruso (2004) suggest that there are four branches to emotional intelligence, perceiving emotions, facilitation, understanding emotions, and reflection. Perceiving emotions covers the ability to recognise and express emotions, both in ourselves and others (Ackley, 2016). Facilitation revolves around how emotions support thinking, problem solving, and planning (Mayer, et al., 2004). The third branch, understanding emotions, involves being able to analyse and comprehend often complex emotions in both ones-self and others (Ackley, 2016). The final branch, reflection, suggests that emotions should be managed in the context of both the situation and the individual's overall goals, and based on their knowledge of themselves (Mayer, et al., 2004). This may include the need to management emotions in others as a way to influence them towards a particular goal (Ackley, 2016). Mayer, et al (2004) also suggested that understanding emotions will grow and develop with age, in a similar manner to IQ.

Goleman suggested that there were twenty five separate competencies (later reduced to eighteen) that formed the model for emotional intelligence (Ackley,

2016). These were clustered into four areas, namely self-awareness, self-management, social-awareness, and relationship management (Thor & Johnson, 2011). The self-awareness cluster suggests that a person should know themselves, and their preferences (Ackley, 2016). Self-management include tha ability to control one's impulses, and act in a way that is consistent with one's own values (Thor & Johnson, 2011). It also deals with setting and realising one's goals, as well as how to overcome adversity in the pursuit of the same (Thor & Johnson, 2011). The social-awareness cluster discusses how people view and react to emotions and feelings in both themselves and others (Ackley, 2016). Relationship management includes how to provide leadership through developing skills in others, acting as a catalyst for change in others through inspiration, influence, and collaboration (Thor & Johnson, 2011).

Bar-On developed a model on emotional intelligence in 1988, based on his observation that those with higher IQs sometimes fail to succeed in endeavours, while others, with lower IQs succeed (Thor & Johnson, 2011). The model suggests that there are fifteen emotional skills that are organised into five composites, namely intrapersonal, interpersonal, adaptability, stress management, and general mood compnents (Stys & Brown, 2004). The intrapersonal composite deals with being aware of one's own emotions (Thor & Johnson, 2011). The interpersonal composite involves being able to relate tot the feelings of others, including empathy, and being able to work with others (Stys & Brown, 2004). How one is able to cope with change, in terms of solving problems, and flexibility is covered by the adaptability composite, while the stress management composite covers the ability to handle stressful situations, and controlling one's impulses (Thor & Johnson, 2011). The general mood components are how happy one is with their life, as well as their general outlook on life (Thor & Johnson, 2011).

There are a number of criticisms of the general concept of emotional intelligence, as well as some of the main models. Different authors have advocated different definitions of emotional intelligence, resulting in no clear definition and confusion among practicioners (Higgs, 2003). Mayer, and Salovey (1997) defined emotional

intelligence as "*the capacity to reason about emotions, and of emotions to enhance thinking*" (Mayer, Salovey, and Caruso, 2004, page 197). However, Dulewicz and Higgs (2000) suggest that emotional intelligence is "*achieving one's goals through the ability to manage one's own feelings and emotions*". Bar On (1997) defined it as "*an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succed in coping with environemental demands and pressures*" (Ackley, 2016).

Additionally, Goleman has often been criticised for not following a strict scientific approach, instead going for popularity (Ackley, 2016). Further, research has suggested that the "Big 5 Personality Factors", as suggested by Goldberg are very similar to the models suggested by Goleman and Bar-On (Stys & Brown, 2004). Leban and Zulauf (2004) also noted that there were correlations between transformational leadership and certain competencies of emotional intelligence. Other researchers has noted that there are optimal levels of emotional intelligence, and having too much of one competency, but a lack of others may be more detrimental than having a more balanced set of competencies (Davis & Nichols, 2016). Davis and Nichols (2016) also suggest that emotional intelligence can contribute to stress, psychological ill-health, anti-social behaviour, and emotional manipulation.

Competency theory

Competency theory, unlike the other schools of leadership thought, proposes that there are elements of the previous schools that are correct, but do not represent the whole picture of leadership characteristics on their own (Müller & Turner, 2010a).

In "Can emotional intelligence be measured and developed?" the authors state that "IQ and emotional intelligence explains more variation in "success" in chosen careers than using IQ alone" (Dulewicz & Higgs, 1999). Using a series of tests, they determined that of the nineteen leadership competencies of emotional intelligence, seven were directly attributed to career success, and were testable (Dulewicz & Higgs, 1999). These formed the seven emotional intelligence competencies (EQ) of competency theory. (see Figure 3). The authors also suggested that these competencies were correlated with both the Belbin Team roles and the Myers Briggs matrices of roles (Dulewicz & Higgs, 1999).

It was noted, however, that emotional intelligence was not a single or overall measure that could be used to define success (Dulewicz & Higgs, 2000). These links were further developed, by Dulewicz and Higgs, into fifteen separate competencies (Dulewicz & Higgs, 2005).

These competencies were broken down into the original seven competencies attributed to EQ, three attributed to IQ, and five attributed to managerial intelligence (MQ) (Müller & Turner, 2010c) (see Figure 3). It was further noted that these competencies were associated with three leaderships styles (goal oriented, engaging, and involving), in different measures (Dulewicz & Higgs, 2005) (see Figure 3). Goal oriented leadership is viewed as being able to deliver clearly understood results within a stable organisational context (Geoghegan & Dulewicz, 2008). This style is focused more on the leader, but does not automatically involve being authoritarian, although sometimes being required (Dulewicz & Higgs, 2005). Involving leadership is useful for transitional organisations, which involve significant, but not necessarily radical, change within operational or business models (Geoghegan & Dulewicz, 2008). Involving leaders will often bring others into the discussions regarding goal

setting and achievement (Dulewicz & Higgs, 2005). Engaging leaders are focussed on enabling others to achieve the goals of the endeavour, often letting others determine the goals, and how they will be achieved (Dulewicz & Higgs, 2005). This often involves high levels of empowerment of individuals, and is a leadership style found in transformational leaders, and organisations involved in radical change (Geoghegan & Dulewicz, 2008).

Competency area	Competency	Goal oriented leadership style	Involving leadership style	Engaging leadership style
IQ	Critical analysis and judgement	High	Med	Low
	Vision and imagination	High	High	Med
	Strategic perspective	High	Med	Med
MQ	Engaging communication	Med	Med	High
	Managing resources	High	Med	Low
	Empowering	Low	Med	High
	Developing	Med	Med	High
	Achieving	High	Med	Med
EQ	Self-awareness	Med	High	High
	Emotional resilience	High	High	High
	Motivation	High	High	High
	Interpersonal sensitivity	Med	Med	High
	Influencing	Med	High	High
	Intuitiveness	Med	Med	High
	Conscientiousness	High	High	High

Figure 3: Competency areas and leadership styles (Dulewicz & Higgs, 2005

A Leadership Dimensions' Questionnaire (LDQ) was also developed to test for these competencies (Dulewicz & Higgs, 2005; Müller & Turner, 2007, 2010a; Arami, 2016). This questionnaire allowed for a standardised framework of questions, competencies, and leadership styles to be established, as well as providing a tool for the cross comparison of research undertaken.

Previous findings – non-project management

Various papers have produced results focussing on the competencies and leadership styles of competency theory. In testing of EQ alone, it was found that age was highly correlated with EQ, while Irish and UK managers were found to be more decisive (Dulewicz & Higgs, 1999). The research indicated that gender was not a factor in

emotional intelligence (Dulewicz & Higgs, 1999). However, female accountants self-reported as having more transformational leadership competencies than their male counterparts, while also reporting high scores in the emotional intelligence areas of coaching, development, and communications (Leban & Zulauf, 2004).

Using the LDQ, the results for the fifteen competency areas were reported as being independent of gender, job function, qualification, and sector of employment, with certain exceptions (Dulewicz & Higgs, 1999). Male managers were also found to score higher in critical analysis and judgement (IQ), while general managers had higher scores in general (Dulewicz & Higgs, 1999). Those with a degree or professional qualification were found to score lower on self-awareness (EQ), and four of the fifteen competencies were negatively correlated with age (Dulewicz & Higgs, 1999).

The LDQ survey tool also suggested which competency areas are associated with the three leadership styles of competency theory, and to what extent (Dulewicz & Higgs, 2005). These showed that for goal oriented leadership styles, all IQ competencies were high, MQ and EQ competencies except empowering were medium or high (Müller & Turner, 2010a) (see Table 3). The involving leadership style scored high or medium in all competencies, while the engaging leadership style scored high or medium in all competencies, except critical analysis (IQ) and managing resources (MQ) (Dulewicz & Higgs, 2005).

In a study of British Royal Air Force (RAF) personnel, managing resources, engaging communication, and empowerment (all MQ) were suggested as the most significant leadership competencies for success, while intuitiveness, interpersonal sensitivity, and conscientiousness (all EQ) were not significant contributors (Turner, Müller, Dulewicz, 2009). The same study reported findings from an earlier test of British Royal Navy staff, which identified vision and imagination, perspective, critical analysis and judgement as leading to superior performance (Turner, et al., 2009). Interpersonal sensitivity, influence, and engaging communications were view as critical to support the leadership styles (Turner, et al., 2009). These results suggest that often-contradictory competencies are required within Her Majesty's Armed

Forces, which might cause difficulty in the separate wings working together on one project.

A similar study was conducted using senior police officers in Scotland. The survey found that nearly half the officers self-reported as having an engaging leadership style (45.8%), with 35% being goal oriented, and 19.2% being involving leaders (Hawkins & Dulewicz, 2009). This compared with a breakdown of the Royal Navy leadership style as engaging – 34.1%; goal oriented – 39.5%; and involving – 26.4% (Hawkins & Dulewicz, 2009).

Using a different survey method, researchers reported that people in the theatre and entertainment had leadership styles that had low scores in the intellectual competency areas, while those in the pharmaceutical and healthcare industries reported high scores in intellectual competencies (Galvin, Gibbs, Sullivan, Williams, 2014). Those involved in customer service and military or law reported high scores in managerial and emotional intelligence styles, largely due to the engaging communication style required in customer service, and the hierarchical nature of the military and law (Galvin, et al., 2014). However, as the researchers pointed out, this survey only had ten questions, comprising three on the competency areas of EQ, IQ, and MQ, and a final question on the job sector of the individual undertaking the survey (Galvin, et al., 2014). This compares to the LDQ, which has one hundred and fifty questions, ten for each competency (Dulewicz & Higgs, 2005).

Previous findings – project management

Research by Müller & Turner (2007, 2010a, 2010b), as well as Geoghegan & Dulewicz (2008), Arami (2016) has shown that project managers competencies and leadership styles can be determined and analysed using the LDQ.

For general project managers the competencies of conscientiousness, sensitivity, and self-awareness (all EQ) were found to score the highest (Geoghegan & Dulewicz, 2008). They also noted that project managers usually had above average intelligence (Geoghegan & Dulewicz, 2008). The competencies of a project manager can also influence the success of a project (Müller & Turner, 2007). In terms of this success,

critical analysis was the only positively correlated IQ competency (Geoghegan & Dulewicz, 2008). Managing resources, empowerment, developing (all MQ), and motivation (EQ) were all highly correlated with project success, while self-awareness, sensitivity, and influence (all EQ) were all positively correlated (Geoghegan & Dulewicz, 2008).

Both vision and imagination, and critical analysis (IQ) do not score highly on project success (Geoghegan & Dulewicz, 2008). The authors, however, note that some scores may be inflated due to the possibility of leadership training that project management teams might receive (Geoghegan & Dulewicz, 2008). However, in other studies, managing resources (MQ) and strategic perspective (IQ) were found to correlate to the success of the project (Müller & Turner, 2010a).

As a contrast, project managers' critical analysis and judgement (IQ) and empowering (MQ) were the two lowest ranked competencies in a survey of project managers in Kuwait (Arami, 2016). In the same survey, engaging communications, and managing resources (both MQ) were ranked highest, with EQ competencies all scoring lower than average Kuwait (Arami, 2016).The author suggests that this discrepancy could be due to the hierarchical and authoritarian nature of the culture in the Gulf region, as well as project management roles being filled with functional managers Kuwait (Arami, 2016).

In the study of the RAF personnel, EQ and MQ competencies were found to be more important for project managers, than functional managers (Turner, et al., 2009). It was also noted that project managers had different competency profiles than functional managers (Turner, et al., 2009). Project managers were seen to have high scores in conscientiousness (EQ), critical analysis and judgement (IQ), and interpersonal sensitivity (EQ), with low scores in engaging communications and developing (both MQ) (Müller & Turner, 2010b).

In a survey of project managers in engineering / construction, IT, and organisational change, it was determined that various attributes of the project would influence the competencies required of a project manager (Müller & Turner, 2010b). These

attributes, such as the complexity, importance, and contract type can change the competencies requirements from low to high, and therefore change the leadership style of the manager (Müller & Turner, 2010b). However, the project lifecycle was not deemed significant (Müller & Turner, 2007).

For complex projects, vision and influence (IQ), and motivation (EQ) were higher on highly complex projects, while all competencies scored higher than on medium or low complexity projects (Müller & Turner, 2007, 2010b). Medium complexity projects required project managers to be strong in critical analysis and judgement (IQ), managing resources, empowering, developing (all MQ), self-awareness, interpersonal sensitivity, influence and conscientiousness (all EQ) (Müller & Turner, 2010b). Motivation was also higher on higher complexity projects, than on low complexity projects (Müller & Turner, 2007).

The contract type also helps to determine the competencies required (Müller & Turner, 2010b). A fixed price contract required higher critical analysis and judgement, strategic perspective (both IQ), and empowering competencies (MQ) than a re-measure contract, with strategic perspective being insignificant on the latter project type (Müller & Turner, 2010b).

The economic sector also plays an important role in the leadership styles required. IT project managers score highly in all areas, except vision and imagination (IQ) and intrusiveness (EQ) (Müller & Turner, 2010b). By contrast, for engineering projects, HR skills (MQ competencies) were all rated as medium, with critical analysis and judgement (IQ), influence, motivation, and conscientiousness (all EQ) all scoring highly (Müller & Turner, 2010b).

The importance of the project, as viewed by the company, also influences the leadership competencies required of project managers. A renewal project requires high competencies in all areas expect vision and judgement (IQ) and intuitiveness (EQ), while mandatory projects require high scores in critical analysis and judgement (IQ), managing resources, empowering, developing (all MQ), influence, motivation and conscientiousness (all EQ) (Müller & Turner, 2010b).

When viewed against the leadership styles of goal oriented, engaging, and involving, Müller & Turner (2010b) determined that the most suitable leadership styles across all project areas, contract types, and complexities was that of engaging with involving was found to be the next most suitable leadership style. This corresponds with the results for Scottish senior police officers (for engaging leadership), but does not align with the results for the RN staff.

Research Gap

Dulewicz and Higgs (2000) suggest that employers can use the emotional intelligence of prospective employees as a method to determine who they wish to hire. The research by Dulewicz and Higgs (2005), Geoghegan and Dulewicz (2008), Müller and Turner (2007, 2010a, 2010b), Hawkins and Dulewicz (2009), Turner, Müller, Dulewicz (2009), Juanjuan (2014), Arami (2016) note that can be significant differences between the competencies of leaders, both operationally and in projects, across different nations, and different economic sectors. This is supported by Jonker & Vosloo (2008) who noted different results on the "Schutte" test for different populations, and language groups. In their previous research, Müller and Turner (2007, 2010a, 2010b) did not distinguish between project managers in the United Kingdom and in Ireland. Taleghani, Salmani, Taatian (2010) noted that there are different management and leadership approaches in these two countries. In fact, no identifyable research examining the competencies of project managers, has been undertaken in Ireland.

The economic sector of funds services was chosen for a number of reasons. The decision, in 2016, by the United Kingdom to leave the European Union means that are large number of financial services companies are looking to rebase large parts of their operations in Ireland (Whelan, 2016). Additionally, the Central Bank of Ireland has implemented stricter regulations in terms of banking requirements, when compared to other countries for both new and existing companies in the market (Flanagan, 2017; Kelpie & O'Donovam, 2017). Further, the companies themselves attempt to attract to customers by constantly providing new services and products for the clients. This means that there will be a need for the companies to have project management teams available to work on these new services and requirements. As such, companies will face a large number of criteria when deciding how to choose project managers to lead these projects.

In the original work by Müller and Turner's (2007), the authors noted that there was significant differences in the competencies between project managers in terms of complexity, strategic importance of the project, and contract type. As such, it wold

seem reasonable to examine these areas, in order to determine whether similar differences exist within the Irish funds context.

An additional hypothesis was also chosen for project management purposes. Within any project, one of the first processes when starting a project is the setting of the project's objectives and goals (Project Management Institute, 2013). The Project Management Institute (2013) go so far as to say that "*the project manager is the person …. responsible for achieving the project objectives*" (Project Management Institute, 2013, p. 16). Jugdev and Muller (2005) also noted that criteria to judge the success of a project should be decided before the project starts. Therefore, this measure of success, namely meeting the project's overall objects, should also be included as a hypothesis to be tested.

Hypotheses

Based on the literature review, there are a large number of hypotheses that could be examined, using a variety of tools. However, Müller and Turner's (2007) article proposes a structure of both how the competencies may be examined, as well as suggesting a number of variable elements that can be used as controls. Nevertheless, the paper also provides too many possible combinations of elements that can be examined.

As such it was decided to restrict the number of hypotheses to be investigated to six. These are based on the strategic importance of the project, its complexity, contract type, as well as the area of the funds services industry undertaking the project, and meeting of the project's overall performance. In addition, it was decided to examine whether the leadership competencies differed, based on the gender of the project management.

The hypotheses were therefore given as follows:

- That there is no statistical difference in the competencies of successful project managers, based on the:
    - H1: gender of the project manager.
    - H2: complexity of the project.

- H3: contract type.
- H4: fund services area.
- H5: strategic importance of the project.
- H6: meeting of the project's overall objectives.

All the hypotheses will be examined at $p < 0.05$ and $p < 0.1$ levels to determine if there are any statistically significant differences in the competencies.

Research approach

When considering the research approach to be used, there are three considerations to be taken into account. These are:

- Research philosophy
- Practicality
- Previous research

Research philosophy

There are three major dimensions to any research process, namely: ontology, epistemology, and methodology (Terre Blanche & Durrheim, 1999). Guba and Lincoln (1998) suggest that these three dimensions provide a framework that can be used to guide and interpret the entire research process. This process ranges from strategic approaches, through methods, and into analysis.

Ontology

Ontology relates to the nature of reality (Tuli, 2010, Antwi & Hanza, 2015).Within this realtity, there are two broad philosophical appraoches; objectivism and constructionism (Neuman, 2014). Objectivism believes that there is an independent reality, while constructionism assumes that reality is a product of the social process (Neuman, 2014).

Within the objectivism philosophy lies the doctrine of positivism. Positivism is based on the works of August Comte (1798 – 1857) , a French philosopher. He believed that observation and reseaon were needed to understand human behaviour, and that true knowledge can only come from examination and experimentation. Positivists, at an ontological level, believe that it is possible to measure and quantify knowledge, independent of the researcher or the research methods (Antwi & Hanza, 2015). This approach is consistent with the scientific method, whereby it is possible to quantify findings, based on empirical or measurable means. In other words, knowledge is based on facts, independent of scoial constructs (Antwi & Hanza, 2015).

The opposite of positivism is interpretivism. Within this doctrine, researchers view that the subjective experiences people encounter form their reality (Antwi & Hanza, 2015). As such, reality is viewed as a social construct. Willis (1995) argues that intrepretist researcher believe that theories are neither correct nor incorrect, but should be judged by other researchers according to the interest level of the theory. The interpretist appraoch to research is to observe events, and interpret the results by inference, in order to eleict a pattern (Antwi & Hanza, 2015). In research, this means interviewing or participating in events, in order to gather information. This research is subjective and based on the relationship between the subjects or events being researched, and the researcher themselves (Antwi & Hanza, 2015). Interpretism, as such, is more aligned with the qualitiative approach to data gathering. Tuli (2010) also notes that interpretivist researchers view the research subjects as participants, while the positivist researchers view them as objects.

Espitemology

Epistemology relates to what and how to obtain knowledge that is valid (Raddon, 2010). This gives rise to a number of questions, including "*What counts as knowledge?*" and "*How do we know what we know?*" (Tuli, 2010). Similar to the ontological divide, epistemology is also divided into the postitivist and interpretist view.

The positivist view is that research is conducted to gain scientific explanations. They believe that there is an organised way to combine deductive reasoning and logic, in a clear experimental study, to identify and confirm statistical theories that can later be used in a more general appraoch (Neuman, 2014). As such, facts are goverend by cause and effect, and that knowledge about them is additive (Crotty, 1998). Within this paradigm, researchers attempt to explain the interactions between variables, and how they create outcomes through shaping events. This framework is seen as robust, reliable, and repeatable (Neuman, 2014).

Interpretivists view the world as experienced by people thorugh understanding of interactions with the rest of society (Guba & Lincoln, 1985). Through this prism, they see that research is interpretive and its purpose is not to form a generalised theory,

but to understand the particular event at hand (Antwi & Hanza, 2015). Within this model, they tend to be viewed as inconspicuous and unassertive (Antwi & Hanza, 2015). The research approach often lies in personal contact, and partnership, which may lead them to gaining a deeper understanding and context of the information being gathered (Antwi & Hanza, 2015). Like positivism, interpretism believe that there can be patterns and regularities to human behaviour, but differ as to the cause.

Methodology

The final dimension of the research process is methodology. Within this dimension, a strategy to turn the principles identified in the ontological and epistemological process is derived. There are three main approaches, namely quantitative, qualitative, and mixed, which is an amalgamation of the quantitative and qualitative approaches.

The quantitative research methods approach relies on being able to quantify the information being sought. As such, it places significant emphasis on hypotheses creation and testing, as well as the determination of the variables that might affect the results (Tuli, 2010). There is also value placed in the design of experiments that are possible to repeat in a consistent manner. These experiments should give rise to sets of data that are unequivocal and not subject to the experiences of the researcher. The positivist approaches to ontology and epistemology form the basis of this quantitative approach.

Qualitative research methodologies are viewed as being supportive of interpretive ontologies and epistemologies. As such, the researcher's own experiences form part of the research process. Further, all results must be considered in the light of the researcher's participation in the research, as well as their interpretation thereof. This, in turn, leads to research that may not produce hard data results. Unlike the quantitative methods, qualitative experiments can be more difficult to replicate in a consistent and structured manner, which may have an impact on the research.

Practicality

When it comes to undertaking research, it is also necessary to consider the practicality of the approach being used. Within this context, the issue of access to participants and possible ethical consideration must be taken into account.

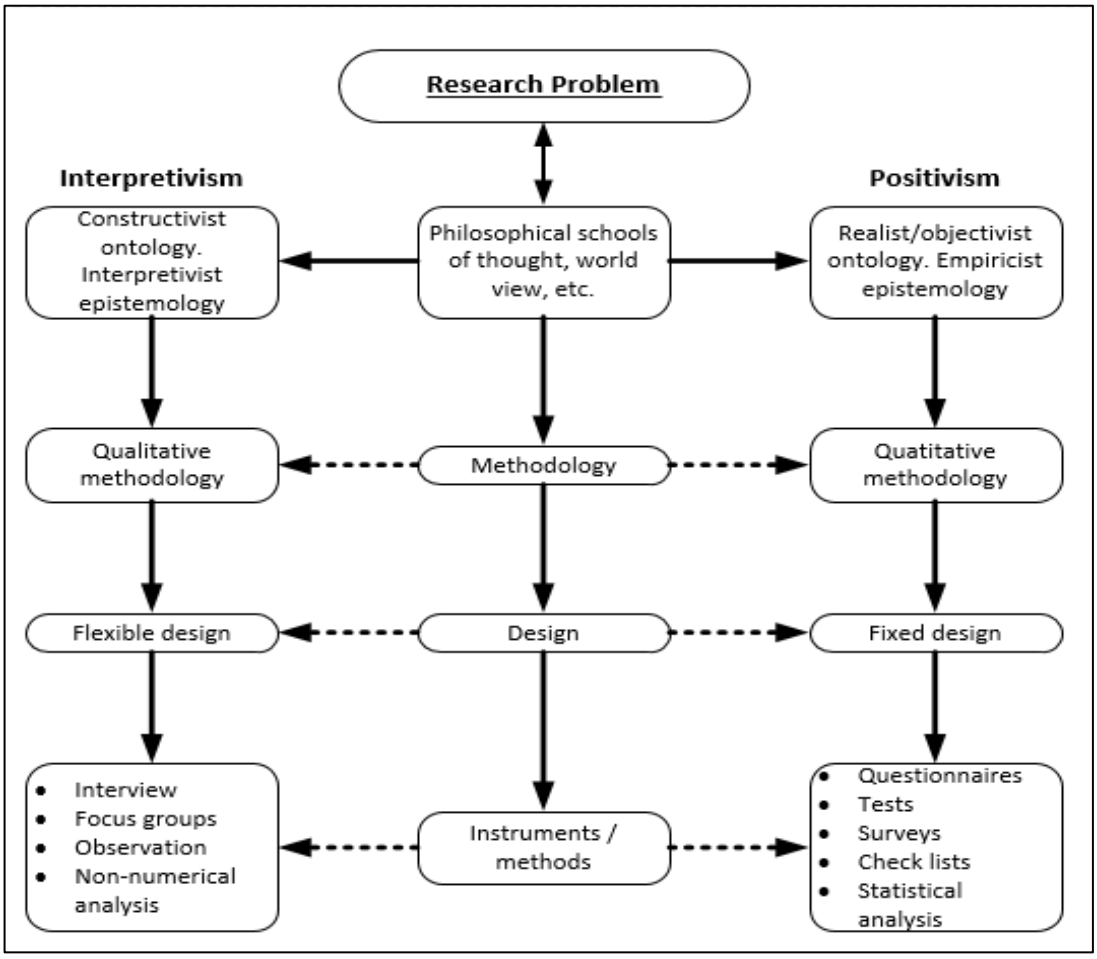

Figure 4: Foundation of research - adapted from Tuli (2010), page 104

Access to participants

In order to have research to report on, it is necessary to have participants to undertake the research. The main qualitative approaches to research are normally interviews, observation, or focus groups (Tuli, 2010) (see Figure 4), depending on the subject areas. These require access to small groups/pools of participants, who are willing to give up an hour or two of their time, in order to discuss the topic being researched. This can be done either individually, or as part of a group. This presents the practical problem of convincing the potential participants of the value of the research. There is also the problem of identifying the key people who would

contribute significantly to the research. Both these problems can be further exacerbated by the fact that the research, in this case, is being conducted by a student, and not a recognised academic research with an easily identifiable research pedigree.

Quantitative research focuses more on questionnaires, surveys, and tests (Tuli, 2010) (see Figure 4). These approaches normally require a larger pool of respondents than a qualitative research approach. This is due to the fact that response rates are generally lower for quantitative research. They are, however, normally quicker and less time consuming to conduct, and if online, can be done at the convenience of the participant. However, a number of drawbacks do exist, such as the inability to ask for more detailed responses to questions, based on a participant's answers. Further, there is a need for any questions asked to be phrased in the easiest possible manner, as it is not possible to rephrase them, to correct for any misunderstanding, after the survey has been sent out.

Ethics

Both the quantitative and qualitative approaches can present significant ethical and bias issues. From a data perspective, the storage and use of the information gleaned from any research must be kept in a secure manner. The research data should not be kept in such a way as to allow personal or identifiable information to be ascertained about any individual. In addition, the data gathered from the research should only be used for its originally intended purpose. This must be clearly outlined to any and all participants or potential participants. These considerations will help build trust between the participant and the research, which should result in more accurate and applicable answers.

Both approaches may also be susceptible to bias, either consciously or unconsciously, not only in their presentation of the research findings, but also in the structure of the data gathering. Cohen, Manion, and Morrison (2011) noted that each researcher will have their own view of the world, and this view helps to frame their beliefs in what the correct answer to the research should be. These views, or biases, can be based on such subjects as religion, politics, culture, gender, race, or philosophy (Cohen, et

al., 2011). Quantitative researchers normally sit outside of the experimental process. As such, it is harder for them to affect the research gathering process. However, qualitative researchers are usually immersed in the process. They can therefore introduce elements of subjective bias into the process. This may cause the researcher to lead the participant to desired conclusion.

Tool to use for research

The original research by Higgs and Dulewicz gave rise to the Leadership Dimensions' Questionnaire (LDQ). This questionnaire comprised of more than one hundred and eighty questions covering all fifteen leadership competencies (ten questions per competency) as well as additional questions relating to demographic information (Müller & Turner, 2007). Müller and Turner (2007, 2010a, 2010b, 2020c) as well as Geoghegan and Dulewicz (2008), Hawkins and Dulewicz (2009), and Arami (2016) subsequently used the LDQ.

As this thesis was attempting to replicate these works, and specifically the works of Müller and Turner, it was planned to use the LDQ as the basis of the research. Contact was made with both Professors Turner[6] and Müller[7], with a view to obtaining LDQ. Both Professor Turner and Professor Müller advised that they no longer had access to the LDQ. Professor Müller also advised that the LDQ was no longer available to be licenced, due to the retirement of Professor Dulewicz. However, he did note that his students were having a similar problem, in terms of research on leadership competencies, and were now using a variety of other survey tools, such as the "Schutte Test", the Multifactor Leadership Questionnaire (MLQ), or the MSCEIT Test.

"Schutte Test"

The Schutte Self-Report Emotional Intelligent Test (SSEIT) measures four elements of emotional intelligence. These four areas are emotional perception, managing others' emotions, managing self-relevant emotions, and utilizing perceptions. The test does not cover areas of either managerial or intellectual intelligence, which are intended

[6] *SKEMA Business School*
[7] *BI Norwegian Business School*

to form part of the core research. Further, the areas of emotional intelligence covered do not line up well with the emotional intelligence competencies of the LDQ.

In addition, Jonker and Vosloo (2008) indicated that the test showed significance between gender and language groups. The test was originally designed using a non-homogenous group of people in the southeastern part of the United States, and produces different results in more homogenous groups (Jonker & Vosloo, 2008). Other researchers have also suggested that there could be descrepancies with the emotional intelligence responses of the test, and whether they are in fact down solely to emotional intelligence (Petrides & Furnham, 2000).

Mayers-Salovey-Caruso Emotional Intelligence Test (MSCEIT)

The MSCEIT measures four areas of emotional intelligence, namely the perceiving emotions, facilitating thought, understanding emotions, and managing emotions (Mayer, et al., 2004). Like the "Schutte Test", these areas do not match closely with the emotional intelligence areas of the LDQ, nor cover the managerial or intellectual intelligence elements. There is also a requriement for certification, in order to conduct the test, which is both costly and time consuming. Further, there is also a cost associated with research participants undertaking the test. In addition, it proved difficult, for the researcher, to determine how to provide the test while ensuring the anonymity of the research participants.

Multifactor Leadership Questionnaire (MLQ)

This is a 45 question survey designed to measure the leadership style of the respondent. These leadership styles are broadly broken down in transactional, transformational, and laissez-faire approaches (Rowold, 2005). The questionnaire also attempts to determine the characteristics of each leadership style, and allows the respondents to access their own characteristics against each style (Rowold, 2005). The research, by Bass and Avolia (1994), is generally well regarded, and has been used in a large number of research applications. However, as noted, the questionnaire only determines the leadership styles, and not the competencies. It was noted by Higgs and Dulewizc (2000) that the management styles, such as transformational or transactional, formed only part of the competencies of a leader.

Further, research suggests that the MLQ is not measuring individual traits of a transformational leaders, but "*appears to assess a single, hierarchical construct of transformational leadership*" (Carless, 1998, p. 357). Yukl (1998) additionally suggests that there may be some overlap between characteristics of leadership that the MLQ struggles to determine correctly.

Qualitative vs Quantitative approach?

It was determined that the suggested, and most likely, replacements for the LDQ did not adequately cover the areas of the proposed research. As such, it was decided to discard these surveys, and identify on an alternative solution. This gave rise to determining whether to use a qualitative or quantitative method. As discussed, both have challenges to overcome, in terms of practicality, and ethics.

Qualitative approach

In a previous interview, the interviewee was asked to discuss their perceived strengths and weaknesses, using the 15 competencies as a basis. They were later asked to score themselves on a 10-point scale for each competency. These self-reporting scores were significantly different than the discussed strengths suggested (Biggar, 2015). This is in line with findings from researchers, such as Gramzow and Williard (2006) among others. This suggests that when asked to quantify their thoughts, and self-idealised perceptions, participants, and ultimately the researchers will struggle. Additional problems, as previously noted, include the difficulty in securing face-to-face interviews with the correct project managers/leaders, who would be in a position to help.

Quantitative approach

The previous research on this topic has all been quantitative in nature. Further, the researcher's own philosophical bent toward positivism and empiricism would suggest a quantitative approach. This would also allow for a less time consuming and practical approach to participant gathering and responses. However, it would require a larger pool of respondents and a more limited ability to probe answers provided in detail.

As such, it was decided to continue with the quantitative method that met with the researcher's needs, as well as the approaches to the previous research. It would, however, prove necessary to construct a new questionnaire, due to the loss of the LDQ. An initial step was to ask each participant to rate the fifteen competencies, based on the definitions provided by Müller and Turner (2007). However, in the previous interview, the interviewee noted that had the definitions of the competencies been broken down into individual parts, they would have scored each part differently (Biggar, 2015). This approach resulted in the fifteen competencies being broken down into twenty nine questions (see Appendix D, Sections 6 – 8).

Survey

The survey was comprised of fifty three questions, covering nine sections[8]. The questions comprised of a variety of compulsory and non-compulsory questions, covering the respondent's demographics, definition of success, and the competencies. Where the opinion of the respondent was sought, a 6-point Likert scales was used, ranging from 0 (not applicable) to 5 (very important). The sections were broken down as follows:

- **Section 1:** Consent to participate in the research.
- **Section 2:** 9 non-compulsory demographic questions regarding age, gender, nationality, education, etc.
- **Section 3:** 3 non-compulsory demographic questions regarding the participants company.
- **Section 4:** 4 compulsory questions regarding project types.
- **Section 5:** 11 compulsory questions regarding definition of project success.
- **Section 6:** 10 compulsory questions regarding necessary competencies of project managers.
- **Section 7:** 8 compulsory questions regarding necessary competencies of project managers.
- **Section 8:** 11 compulsory questions regarding necessary competencies of project managers.
- **Section 9:** 2 non-compulsory questions asking for further information on project manager competencies that may cause a project to be successful for unsuccessful.

[8] *A version of the survey can be found in Appendix D*

Sections 5 – 8 were answered using the Likert scale, while the other sections comprised of tick box, dropdown, or free format answers.

The number of questions on the survey was in line with the number of questions on the MLQ, but is some 60% greater than the "Schutte Test". However, it is less than 30% the number of questions on the LDQ, which was the originally envisaged survey tool. Additionally, the success criteria questions included were taken from Müller and Turner's (2005) paper, without adaption. The paper was hosted Google Forms. This was to allow for ease of access for respondents, as well as providing both name recognition and a cost effect (free) solution to hosting.

Pilot test

An initial pilot test was carried out using friends, family, and colleagues, who would not be within the scope of the research. The pilot study was used to field test the survey tool, and determine that all the content, syntax, grammar, spelling, and functionality was correct and working. It also allowed the researcher to familiarise themselves with the tools. An additional benefit of this pilot study was that a number of the respondents were non-Irish, and non-native English speakers. This allowed for testing in relation to ease of use and comprehension.

Based on the feedback received from the pilot study, a number of minor changes were made to spelling, and layout of the questions. A security setting was also identified as having been left unchecked, which allowed respondents to see previously completed surveys. These issues were resolved before the survey went live.

One additional mistake, was identified by the researcher, after the survey had bone live. This mistake entailed the replication of questions #1 and #6 of the "success criteria" section of the survey (see Appendix D, page 87). After discovery, the researcher was minded to delete question #6. However, to ensure that each respondent had the same number of questions to answer, the question was kept in the survey. After the survey was closed, the second set of answers to the replicated question was not examined for the research. This also means that of the ten success

criteria that were suggested by Müller and Turner (2010a), "meet the project's purpose" was not examined.

Respondents

Two methods were originally foreseen to gather responses for the survey. These were:

1. Companies were identified, through means such as the Irish Funds Industry Association, who had a presence in Ireland, and carried on business in one or more areas that were being researched. Emails were then sent to the head of country/managing directors of the companies, as well the head of each area, where identified. The email explained the nature of the research, the intended aims, and asked them to pass on the survey links to their employees. As an added incentive, the companies were offered the opportunity to get feedback on how their employees responded collectively, in return for passing on the link to the survey. A Frequently Asked Questions (FAQ) was also attached to the email, with additional details of the research (see Appendix F for the sample FAQ).
2. A number of major associations representing project managers, business analysts, or the fund services industry were approached. In a similar vein to the companies' approach, each was asked to forward the links to their members, with a view to them completing the survey. The same incentive was also provided to the associations, as was provided to the companies. The FAQ was also attached.

No feedback, concerning the survey was received from the companies[9]. Additionally, the associations emailed, provided feedback that they were not in a position to pass on the survey links, due to a combination of not wanting to endorse the research, and inability to identify which of their members worked in the relevant areas. A number did, however, suggest that the survey could be posted on the forums they ran on LinkedIn.com.

[9] *The contact did, however, elicit a phone and in-person interview with one of the contacted companies for the researcher.*

This feedback then gave rise to a number of other approaches. These were:

3. In line with the suggestions of the associations, the survey links, and a brief explanation of the research, and qualifying criteria, were posted to a number of LinkedIn.com groups, which catered to project managers, business analysts, and the Irish funds industry. A similar post was also placed on the researchers LinkedIn.com profile.
4. A list of people with titles such as “project manager”, “business analyst”, etc. were compiled from open source data such as LinkedIn.com and company websites.
    a. Where the person was a personal contact of the researcher, they were contacted directly over LinkedIn messenger, or personal email, with an explanation of the project, and its aims. The link to the survey was provided, as well as a copy of the FAQ.
    b. Where the person was not a personal contact, their email address was established via the use of LinkedIn.com, Contact Out, or from derivation from existing email addresses. As above, the email contained an explanation of the project, its aims, as well as a link to the survey, and a copy of the FAQ.
5. A number of classmates, working in operational areas of some of the companies also agreed to distribute the survey links, and explanations.

Using these methods, it is difficult to ascertain how many people were contacted with a view to doing the survey. A conservative estimate suggests that more than two hundred people saw the personal post on LinkedIn.com. Additionally, more than two hundred and fifty individuals were identified, and more than two hundred were contacted directly, asking to take part in the survey.

Ethical note

In any research, the researcher must identify and attempt to mitigate any ethical concerns that may exist. In this research, the identified ethical risks were:

- Identification of respondents.

- Storage of identifiable personal data.
- Risk and discomfort to participants due to the questions being asked.
- Right to decline to participate.
- Compensation to take part.
- Storage of data gained.

In order to mitigate these risks, it was decided not to ask for names, contact numbers, or email addresses from the participants. This would remove the ability of the researcher, or readers of the research, to identify any participants. Additionally, all personal demographic questions were made non-compulsory to avoid both the risk of identification and discomfort from the participant.

The right to decline to take part in the research was included at three different stages. This included any potential participant not having to click on the email link sent to them in an email; after reading the consent to participate at the start of the survey by clicking “No”; and by not clicking “submit” at the end of the survey.

Compensation to participate was considered, but would have required the collection of additional personal information. Further, paying people to participate may have led to people participating simply to get paid, without contributing any useful information to the research.

All data gained from this research, including any identifiable data that may have been gained, will be destroyed by either the 31st December, 2017, or when the academic need for the data is concluded, whichever is later.

All of these ethical considerations were included before the participants could take part in the research, Further, all participants were required to click “Yes” on the research portal, to say that they had understood that they were participating in research, and agreed to take part.

Results

There are a number of items to review while examining the results generated. Primarily, there is a need to review the data associated with the hypotheses suggested in the research gap. However, there is also a need to review both the methods used to examine the hypotheses, as well as the internal consistencies within the data collected. This will entail a review of the normality of the data collected, as well as the Cronbach's alpha of the competencies. The elements of Cronbach's alpha, construction of the competencies, and the normality of the data will also be discussed in the section, while the results of the hypotheses will be discussed in the next section. All data was examined using IBM's SPSS software (version 23), and presented using Microsoft's Excel 2013, unless otherwise noted.

Demographics

The survey generated 42 usable results, from 43 respondents. Of these, 73.8% were male, and 26.2% were female. The respondents were mostly Irish (83.3%), with 11.9% from the UK. Citizenship of the respondents was again mostly Irish (64.3%), UK (9.5%), with 19.0% not responding. A further 4.8% were dual nationals, and 2.4% were tri nationals. Age wise, the two largest groups were aged 36 to 40 (31%), and 41 to 45 (33%). Nearly all the respondents (92.9%) had lived in Ireland for more than 10 years.

In terms of education, 31.% had a Level 8[10] (honours degree), while 40.5% had a Level 9 (masters or post-graduate qualification). For project management qualifications, 42.9% had a professional qualification, with a further 33.3% not answering the question. With regards to project management experience, 40.5% had between 2 and 5 years' experience, 35.7% had more than 10 years' experience, with 16.7% having between 5 and 10 years' experience.

When answering regarding where their companies were headquartered, 64.3% responded that their companies were headquartered in North America, 16.7% in Ireland, and 19% in other EU countries. Additionally, 42.9% indicated that their

[10] *On the Quality ad Qualifications Ireland National Framework of Qualifications (NFQ), www.nfq-qqi.com/index.html*

company had between 1,000 and 5,000 employees in Ireland, 33.3% with between 100 and 1,000 employees, and 11.9% with more than 5,000 employees in Ireland.

Construction of the competencies

As discussed previously, the competencies were broken down into their individual elements, where possible, for the purposes of the survey. This resulted in critical analysis and judgement being broken into four elements, vision and imagination, and strategic perspective were broken into three elements. These were all IQ competencies. Engaging communication, managing resources, developing (all MQ competencies), emotional resilience, motivation, influencing, and conscientiousness (all EQ competencies) were broken into two elements. The remaining competencies (empowering, achieving (both MQ), self-awareness, interpersonal sensitivity, and intuitiveness (all EQ)) were presented in their entirety.

In order to construct the competencies to be tested, the respective individual elements were averaged. This process meant that the individual elements of reduced to a quarter, third, or half, depending on the number of elements in the competency. This allowed for the maintenance of the same scale across all the competencies (i.e. from 0 – not relevant to 5 – very important). Further, this allowed for a more comparisons with the existing competency model.

Cronbach's alpha

The use of Cronbach's alpha serves two purposes. It allows for researchers to determine the internal consistency of the variables being checked. Further, it allows researchers to determine which elements being examined is having either a positive or negative effect on the internal consistency. SPSS also gives a researcher the opportunity to examine what would happen if one element was removed from those that were being examined.

All competencies

A Cronbach's alpha was run on the 15 competencies (ten reconstructed, five original). The test resulted in a Cronbach's alpha of ***0.940***. The Cronbach's alpha was also test

with an element was removed. This resulted in Cronbach's alphas of between ***0.930*** and ***0.941***, depending on the element (see Table 1).

Cronbach's Alpha	N of Items
.940	15

Competencies	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Critical analysis and judgement	108.1505	371.011	.691	.936
Vision and imagination	109.0157	366.007	.682	.936
Strategic perspective	108.8252	359.246	.701	.935
Engaging communication	108.1981	348.461	.717	.935
Managing resources	108.4362	348.652	.787	.933
Empowering	108.8410	362.196	.591	.938
Developing	109.5552	343.099	.769	.933
Achieving	108.3648	369.629	.497	.940
Self-awareness	109.6505	359.758	.513	.941
Emotional resilience	108.8410	350.915	.843	.932
Motivation	109.0314	352.053	.675	.936
Interpersonal sensitivity	109.0790	350.054	.680	.936
Influencing	108.9600	350.403	.814	.933
Intuitiveness	108.4600	367.469	.649	.937
Conscientiousness	109.0314	339.395	.878	.930

Table 1: Cronbach's alpha for competencies, if competency deleted

Critical analysis and judgement

The four element reconstructed critical analysis and judgement competency was subjected to a Cronbach's alpha, as well as an element deletion check. This produced an alpha of ***0.794*** for the overall competency, and Cronbach's alphas of between ***0.676*** and ***0.780*** when deleted (see Table 2).

Vision and imagination

The three element reconstructed vision and imagination competency was subjected to a Cronbach's alpha, as well as an element deletion check. This produced an alpha of ***0.575*** for the overall competency, and Cronbach's alphas between ***0.338*** and ***0.522*** when elements were deleted (see Table 3).

Cronbach's Alpha	N of Items
.794	4

Critical analysis and judgement competency	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Gathers relevant information from a wide range of sources	12.6905	4.268	0.525	0.780
Probes the facts, identifying advantages and disadvantages.	12.619	4.388	0.527	0.779
Exhibits sound judgements and decisions making.	12.6667	3.35	0.726	0.676
Exhibits awareness of the impact of any assumption made.	12.7381	3.808	0.65	0.719

Table 2: Cronbach's alpha for critical analysis and judgement elements

Cronbach's Alpha	N of Items
.575	3

Vision and imagination competency	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Is imaginative and innovative.	7.8333	3.508	.348	.552
Has a clear vision of the future.	7.5238	2.060	.392	.499
Foresees the impact of changes on implementation issues and business realities.	7.4048	2.393	.468	.338

Table 3: Cronbach's alpha for vision and imagination elements

Cronbach's Alpha	N of Items
.808	3

Strategic perspective competency	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Is aware of the wider issues and broader implications.	7.7619	3.405	.552	.840
Balances short and long-term considerations.	8.0000	2.732	.794	.585
Identifies opportunities and threats.	7.5714	3.178	.636	.757

Table 4: Cronbach's alpha for strategic perspective elements

Strategic perspective

The three element reconstructed vision and imagination competency was subjected to a Cronbach's alpha, as well as an element deletion check. This produced an alpha of ***0.808*** for the overall competency, and , and Cronbach's alphas between ***0.585*** and ***0.840*** when elements were deleted (see Table 4).

Normality in the collected data

The type of tests that need to be run that are determined by the size and Normality of the data collected. For each hypothesis, Shapiro-Wilk test for normality was conducted to determine the normality of the competencies, when analysed against the element being tested. As there are 6 hypotheses, and 15 competencies, this resulted in 90 checks for normality. At a level of $p < 0.05$, 86 of the tests (95.6%) are not normally distributed (see Appendix G). Of the 4 tests that resulted in normality at $p < 0.05$ (i.e. gender and strategic perspective; contract type and vision and imagination; meeting overall project performance and vision and imagination; and strategic importance of the project and conscientiousness) only the latter remains normally distributed at $p < 0.1$.

Hypothesis 1 (Gender)

As there is only two variables to be measured against for competencies (i.e. male and female), a Mann-Whitney U-test was used to test the hypothesis that there was no statistically significant differences in competencies of project managers, based on their gender. Additionally, a Kruskal-Wallis H-test was also conducted on the hypothesis to the differences in ranking between the two genders, across the competencies.

For the Mann-Wallis U-test the U and p values were reported as per Table 5 (below). This showed that there were statistically significant differences between genders for strategic perspective, empowering, and developing, when measured for $p < 0.05$. At the $p < 0.1$ level, critical analysis and judgement, vision and imagination (both IQ), as well as emotional resilience, influencing, and conscientiousness (all EQ) show statistical differences. The Kruskal-Wallis H-test gives the same competencies (as the

Mann-Whitney U-test) that have statistically significant differences at both $p < 0.05$ and $p < 0.1$ (see Table 6).

From the results of the tests would suggest that the hypothesis is supported for engaging communication, managing resources, achieving (all MQ), self-awareness, motivation, interpersonal sensitivity, and intuitiveness (all EQ), at both $p < 0.05$, and $p < 0.1$. Further, the hypothesis is supported at $p < 0.05$ but not $p < 0.1$ for critical analysis and judgement, and vision and imagination (both IQ), emotional resilience, and conscientiousness (both EQ). It is not, however, supported for strategic perspective (IQ), empowering, and developing (both MQ).

No statistically significant difference between men and women			
Competency	**Median**	**U**	**p**
Critical analysis and judgement	8.50	110.5	0.086
Vision and imagination	7.67	109.0	0.081
Strategic perspective	8.00	88.0	0.017
Engaging communication	9.00	128.5	0.233
Managing resources	9.00	135.0	0.322
Empowering	8.00	72.0	0.004
Developing	7.00	54.5	0.000
Achieving	8.00	151.5	0.592
Self-awareness	8.00	166.5	0.910
Emotional resilience	8.00	111.0	0.092
Motivation	8.00	155.5	0.672
Interpersonal sensitivity	8.00	154.0	0.652
Influencing	8.00	107.0	0.071
Intuitiveness	8.00	122.0	0.172
Conscientiousness	8.00	108.0	0.076

Table 5: Mann-Whitney U-test of competencies for gender, no statistical difference at $p < 0.05$

Males vs Females		**Male**	**Female**	**Kruskal Wallis Test**		
Competency	**N**	*31*	*11*	**χ^2**	**df**	**Asymp. Sig.**
Critical analysis and judgement	Mean Rank	19.56	26.95	3.035	1	0.081
Vision and imagination	Mean Rank	19.52	27.09	3.181	1	0.074
Strategic perspective	Mean Rank	18.84	29.00	5.684	1	0.017
Engaging communication	Mean Rank	20.15	25.32	1.567	1	0.211
Managing resources	Mean Rank	20.35	24.73	1.083	1	0.298
Empowering	Mean Rank	18.32	30.45	9.287	1	0.002
Developing	Mean Rank	17.76	32.05	11.489	1	0.001
Achieving	Mean Rank	20.89	23.23	0.339	1	0.561
Self-awareness	Mean Rank	21.37	21.86	0.014	1	0.905
Emotional resilience	Mean Rank	19.58	26.91	3.136	1	0.077

Males vs Females		Male	Female	Kruskal Wallis Test		
Competency	**N**	*31*	*11*	**χ^2**	**df**	**Asymp. Sig.**
Motivation	Mean Rank	21.98	20.14	0.190	1	0.663
Interpersonal sensitivity	Mean Rank	20.97	23.00	0.246	1	0.620
Influencing	Mean Rank	19.45	27.27	3.515	1	0.061
Intuitiveness	Mean Rank	19.94	25.91	2.323	1	0.127
Conscientiousness	Mean Rank	19.48	27.18	3.287	1	0.070

Table 6: Kruskal-Wallis H-test of competencies for gender

Hypothesis 2 (Project complexity)

For project complexity, there were three possibilities returns (i.e. low, medium, high). As such, a Mann-Whitney U-test was not possible. Therefore a Kruskal-Wallis H-test was conducted on the competencies to determine if there was a statistically significant difference in competencies, based on the project complexity. As the complexity of the project was a mandatory question, there were 42 responses, with 26 (61.9%) saying they were involved in high complexity project, 13 (30.9%) medium complexity projects, and 3 (7.1%) in low complexity projects (see Table 7, next page). As the low complexity projects had 3 responses, a second Kruskal-Wallis H-test was conducted, with the low complexity responses, to determine if there was a statistical response between the medium and high complexity projects (see Table 8, next page).

For the 3 complexity of the Kruskal-Wallis H-tests, only achieving (MQ) shows a statistically significant difference at $p < 0.05$, while at $p < 0.1$, developing also shows a statistical difference. In the Kruskal-Wallis H-test for only medium and high complexity projects, there were no statistical differences.

For the hypothesis, it is clear that there are no statistical differences in the competencies between medium and high complexity projects. However, there is a statistical difference in the competencies when low complexity projects are included.

Complexity of the project		Low	Med	High	Kruskal Wallis Test		
Competency	**N**	*3*	*13*	*26*	**χ^2**	**df**	**Asymp. Sig.**
Critical analysis and judgement	Mean Rank	19.00	22.58	21.25	0.243	2	0.886
Vision and imagination	Mean Rank	19.50	20.88	22.04	0.167	2	0.920
Strategic perspective	Mean Rank	13.50	21.27	22.54	1.497	2	0.473

Complexity of the project		Low	Med	High	Kruskal Wallis Test		
Competency	N	*3*	*13*	*26*	χ^2	df	Asymp. Sig.
Engaging communication	Mean Rank	15.17	22.85	21.56	1.038	2	0.595
Managing resources	Mean Rank	8.17	22.04	22.77	4.041	2	0.133
Empowering	Mean Rank	10.67	25.23	20.88	4.219	2	0.121
Developing	Mean Rank	7.83	25.62	21.02	5.452	2	0.065
Achieving	Mean Rank	4.00	26.88	20.83	9.963	2	0.007
Self-awareness	Mean Rank	9.67	24.08	21.58	3.688	2	0.158
Emotional resilience	Mean Rank	21.00	23.04	20.79	0.321	2	0.852
Motivation	Mean Rank	19.67	20.92	22.00	0.143	2	0.931
Interpersonal sensitivity	Mean Rank	14.67	23.77	21.15	1.539	2	0.463
Influencing	Mean Rank	15.67	24.50	20.67	1.677	2	0.432
Intuitiveness	Mean Rank	9.83	24.92	21.13	4.523	2	0.104
Conscientiousness	Mean Rank	12.00	24.38	21.15	2.610	2	0.271

Table 7: Kruskal-Wallis H-test of competencies for project complexity

Complexity of projects		Med	High	Kruskal Wallis Test		
Competency	N	*13*	*26*	χ2	df	Asymp. Sig.
Critical analysis and judgement	Mean Rank	20.88	19.56	0.121	1	0.728
Vision and imagination	Mean Rank	19.38	20.31	0.058	1	0.809
Strategic perspective	Mean Rank	19.08	20.46	0.131	1	0.718
Engaging communication	Mean Rank	20.77	19.62	0.097	1	0.756
Managing resources	Mean Rank	19.46	20.27	0.046	1	0.830
Empowering	Mean Rank	22.81	18.60	1.403	1	0.236
Developing	Mean Rank	22.92	18.54	1.345	1	0.246
Achieving	Mean Rank	23.88	18.06	2.679	1	0.102
Self-awareness	Mean Rank	21.58	19.21	0.411	1	0.522
Emotional resilience	Mean Rank	21.42	19.29	0.330	1	0.565
Motivation	Mean Rank	19.35	20.33	0.066	1	0.797
Interpersonal sensitivity	Mean Rank	21.50	19.25	0.371	1	0.542
Influencing	Mean Rank	22.27	18.87	0.819	1	0.366
Intuitiveness	Mean Rank	22.35	18.83	1.015	1	0.314
Conscientiousness	Mean Rank	21.96	19.02	0.595	1	0.440

Table 8: Kruskal-Wallis H-test of competencies for medium and high project complexities

Hypothesis 3 (Contract type)

For the contract type of the project, there were five possible returns (i.e. fixed price, alliance, re-measurement, internal / regulatory / client based, or other). As such, a Mann-Whitney U-test was not possible. Therefore a Kruskal-Wallis H-test was conducted on the competencies to determine if there was a statistically significant difference in competencies, based on the contract type of the project. As this question was a mandatory, there were 42 responses, with 13 (25%) responding that their projects were fixed price, 17 (40.4%) alliance, 9 (21.4%) re-measurement, 1 (2.3%) internal, and 2 (4.7%) other (see Table 9, next page) As the internal and other contract types for projects had 3 responses combined, a second Kruskal-Wallis H-test was conducted, with these contract types removed, to determine if there was a statistical response between the fixed, alliance, and re-measurement projects (see Table 10, page 48).

There are no statistical differences for all the competencies in all contract types at $p < 0.05$, across both sets of tests. However, at the $p < 0.1$ level, the developing (MQ) competency shows a statistical difference. As such, the hypothesis that there are not statistical difference, at the $p < 0.05$ level holds true.

Hypothesis 4 (Fund services segment)

For the fund services segment that the project takes place in, there were five possible returns (i.e. custodian, fund account, IT streams, transfer agency, and trustee). As such, a Mann-Whitney U-test was not possible. Therefore a Kruskal-Wallis H-test was conducted on the competencies to determine if there was a statistically significant difference in competencies, based on the fund services sector. As this question was a mandatory, there were 42 responses, with 3 (7.14%) of respondents working in custody, 8 (19%) in fund accounting, 8 (19%) in the IT streams supporting the sectors, 21 (50%) in transfer agency, and 2 (4.7%) in the trustee segment (see Table 11). As the custodian and trustee segments had less than 4 respondents each, a second Kruskal-Wallis H-test was conducted, with these segments removed, to determine if there was a statistical response between the fund accounting, transfer agency, and the IT streams (see Table 12).

Type of contract for the project		Fixed price	Alliance	Remeasurement	Internal	Other	Kruskal Wallis Test		
Competency	N	13	17	9	1	2	χ2	df	Asymp. Sig.
Critical analysis and judgement	Mean Rank	20.73	19.41	24.00	37.50	25.00	2.865	4	0.581
Vision and imagination	Mean Rank	21.23	19.35	23.22	38.00	25.50	2.802	4	0.592
Strategic perspective	Mean Rank	22.77	23.68	15.89	40.50	10.50	6.698	4	0.153
Engaging communication	Mean Rank	19.65	23.97	15.33	34.00	34.00	6.916	4	0.140
Managing resources	Mean Rank	22.12	21.79	18.50	37.00	20.75	2.295	4	0.682
Empowering	Mean Rank	26.92	19.50	20.50	22.00	7.50	6.618	4	0.157
Developing	Mean Rank	28.38	18.94	19.00	28.50	6.25	8.997	4	0.061
Achieving	Mean Rank	19.23	24.26	20.28	34.50	11.75	4.339	4	0.362
Self-awareness	Mean Rank	24.12	23.41	16.44	28.00	7.75	5.836	4	0.212
Emotional resilience	Mean Rank	22.62	21.03	19.06	33.50	23.25	1.610	4	0.807
Motivation	Mean Rank	24.38	19.56	17.83	22.50	35.25	4.609	4	0.330
Interpersonal sensitivity	Mean Rank	19.54	23.21	21.33	37.00	12.75	3.612	4	0.461
Influencing	Mean Rank	24.58	20.56	19.00	34.00	14.50	3.175	4	0.529
Intuitiveness	Mean Rank	22.50	21.94	18.00	36.50	19.50	2.883	4	0.578
Conscientiousness	Mean Rank	24.73	22.56	15.72	38.50	9.00	7.220	4	0.125

Table 9: Kruskal-Wallis H-test of competencies for project contract type

Type of contract for the project		**Fixed price**	**Alliance**	**Remeasurement**	**Kruskal Wallis Test**		
Competency	**N**	*13*	*17*	*9*	**χ2**	**df**	**Asymp. Sig.**
Critical analysis and judgement	Mean Rank	19.85	18.62	22.83	0.831	2	0.660
Vision and imagination	Mean Rank	20.38	18.62	22.06	0.574	2	0.751
Strategic perspective	Mean Rank	21.19	21.97	14.56	2.765	2	0.251
Engaging communication	Mean Rank	19.19	23.18	15.17	3.199	2	0.202
Managing resources	Mean Rank	20.92	20.56	17.61	0.546	2	0.761
Empowering	Mean Rank	24.42	17.53	18.28	3.503	2	0.174
Developing	Mean Rank	25.92	17.06	17.00	5.495	2	0.064
Achieving	Mean Rank	17.73	22.44	18.67	1.631	2	0.442
Self-awareness	Mean Rank	21.92	21.32	14.72	2.774	2	0.250
Emotional resilience	Mean Rank	21.42	19.91	18.11	0.496	2	0.781
Motivation	Mean Rank	23.38	18.74	17.50	1.841	2	0.398
Interpersonal sensitivity	Mean Rank	18.12	21.59	19.72	0.767	2	0.682
Influencing	Mean Rank	22.81	19.09	17.67	1.355	2	0.508
Intuitiveness	Mean Rank	21.19	20.68	17.00	0.985	2	0.611
Conscientiousness	Mean Rank	22.85	20.82	14.33	3.217	2	0.200

Table 10: Kruskal-Wallis H-test of competencies for fixed price, alliance, and re-measurement project contract types

There were no significant statistical differences between any of the funds services sectors when it came to competencies, either at the $p < 0.05$ or $p < 0.1$ levels. When the custodian and trustee segments are removed, there is likewise no statistically significant differences at the $p = 0.5$ (5%) lever, and only developing is statistically different at the $p < 0.1$ level.

Fund services area		Custodian	Fund accounting	IT streams	Transfer Agency	Trustee	Kruskal Wallis Test		
Competency	N	3	8	8	21	2	χ2	df	Asymp. Sig.
Critical analysis and judgement	Mean Rank	21.33	21.63	17.31	23.38	18.25	1.615	4	0.806
Vision and imagination	Mean Rank	22.67	25.19	20.69	20.21	21.75	1.045	4	0.903
Strategic perspective	Mean Rank	18.67	20.50	20.50	22.93	18.75	0.665	4	0.956
Engaging communication	Mean Rank	25.50	24.94	15.88	21.17	27.75	3.433	4	0.488
Managing resources	Mean Rank	25.50	24.19	19.75	20.64	20.75	1.025	4	0.906
Empowering	Mean Rank	17.17	22.25	20.31	23.17	12.25	2.344	4	0.673
Developing	Mean Rank	20.00	23.44	17.88	21.69	28.50	1.668	4	0.796
Achieving	Mean Rank	18.00	24.69	19.50	21.10	26.25	1.513	4	0.824
Self-awareness	Mean Rank	14.50	24.38	21.06	21.12	26.25	1.914	4	0.752
Emotional resilience	Mean Rank	16.17	29.63	19.31	19.95	22.00	5.053	4	0.282
Motivation	Mean Rank	31.00	26.19	18.00	19.55	23.00	4.312	4	0.365
Interpersonal sensitivity	Mean Rank	16.50	23.75	18.31	21.71	30.50	2.635	4	0.621
Influencing	Mean Rank	17.00	28.00	15.94	22.45	14.50	5.403	4	0.248
Intuitiveness	Mean Rank	19.50	25.88	22.25	19.21	28.00	2.917	4	0.572
Conscientiousness	Mean Rank	16.33	27.25	18.31	21.40	20.00	2.942	4	0.568

Table 11: Kruskal-Wallis H-test of competencies for fund services area

Segment of fund industry		Fund accounting	IT streams	Transfer Agency	Kruskal Wallis Test		
Competency	N	*8*	*8*	*21*	**χ2**	**df**	**Asymp. Sig.**
Critical analysis and judgement	Mean Rank	19.00	15.25	20.43	0.831	2	0.660
Vision and imagination	Mean Rank	22.19	18.56	17.95	0.574	2	0.751
Strategic perspective	Mean Rank	17.88	17.81	19.88	2.765	2	0.251
Engaging communication	Mean Rank	22.63	14.69	19.26	3.199	2	0.202
Managing resources	Mean Rank	21.50	17.69	18.55	0.546	2	0.761
Empowering	Mean Rank	18.88	17.13	19.76	3.503	2	0.174
Developing	Mean Rank	20.94	16.00	19.40	5.495	2	0.064
Achieving	Mean Rank	21.69	17.31	18.62	1.631	2	0.442
Self-awareness	Mean Rank	21.25	18.31	18.40	2.774	2	0.250
Emotional resilience	Mean Rank	25.63	16.75	17.33	0.496	2	0.781
Motivation	Mean Rank	23.94	16.50	18.07	1.841	2	0.398
Interpersonal sensitivity	Mean Rank	21.13	16.13	19.29	0.767	2	0.682
Influencing	Mean Rank	23.75	13.50	19.29	1.355	2	0.508
Intuitiveness	Mean Rank	22.94	19.81	17.19	0.985	2	0.611
Conscientiousness	Mean Rank	23.63	15.81	18.45	3.217	2	0.200

Table 12: Kruskal-Wallis H-test of competencies for fund account, transfer agency, and IT

Hypothesis 5 (Strategic importance)

For the strategic importance of the project, there were four possible responses (i.e. repositioning, renewal, mandatory, and other). As such, a Mann-Whitney U-test was not possible. Therefore a Kruskal-Wallis H-test was conducted on the competencies to determine if there was a statistically significant difference in competencies for the strategic importance of the project. As this question was a mandatory, there were 42 responses, with 20 (47.6%) of projects being repositioning, 9 (21.4%) renewal, 10 (23.8%) mandatory, and 3 (7.14%) being classified as other (see Table 13). As the

projects classified as other had only 3 respondents, a second Kruskal-Wallis H-test was carried out, with this project categorisation excluded, in order to test for statistically significant differences (see Table 14).

There were no statistically significant differences at either $p < 0.05$ or $p < 0.1$ across any of the competencies for the four categories of strategic importance. Likewise there were no significant differences between the three categorisations of the projects, when other was removed.

Strategic importance of projects		**Repositioning**	**Renewal**	**Mandatory**	**Other**	**Kruskal Wallis Test**		
Competency	**N**	*20*	*9*	*10*	*3*	**χ2**	**df**	**Asymp. Sig.**
Critical analysis and judgement	Mean Rank	22.70	22.39	16.75	26.67	2.338	3	0.505
Vision and imagination	Mean Rank	21.03	25.28	16.60	29.67	3.914	3	0.271
Strategic perspective	Mean Rank	21.18	23.44	20.00	22.83	0.434	3	0.933
Engaging communication	Mean Rank	21.80	19.89	19.85	29.83	1.880	3	0.598
Managing resources	Mean Rank	22.08	22.44	18.70	24.17	0.798	3	0.850
Empowering	Mean Rank	23.43	16.72	23.25	17.17	2.848	3	0.416
Developing	Mean Rank	24.03	20.17	19.15	16.50	1.898	3	0.594
Achieving	Mean Rank	22.10	22.11	20.40	19.33	0.280	3	0.964
Self-awareness	Mean Rank	19.70	26.83	22.40	14.50	3.465	3	0.325
Emotional resilience	Mean Rank	20.85	27.50	17.75	20.33	3.432	3	0.330
Motivation	Mean Rank	20.45	24.06	21.30	21.50	0.557	3	0.906
Interpersonal sensitivity	Mean Rank	21.95	25.22	18.85	16.17	2.082	3	0.556
Influencing	Mean Rank	22.48	21.94	20.80	16.00	0.824	3	0.844
Intuitiveness	Mean Rank	20.78	25.44	19.75	20.33	1.485	3	0.686
Conscientiousness	Mean Rank	20.53	26.89	18.65	21.33	2.471	3	0.481

Table 13: Kruskal-Wallis H-test of competencies for strategic importance of the project

Strategic importance of projects		**Repositioning**	**Renewal**	**Mandatory**	**Kruskal Wallis Test**		
Competency	**N**	20	9	10	**χ2**	**df**	**Asymp. Sig.**
Critical analysis and judgement	Mean Rank	21.45	21.22	16.00	1.706	2	0.426
Vision and imagination	Mean Rank	20.13	23.94	16.20	2.254	2	0.324
Strategic perspective	Mean Rank	19.78	21.89	18.75	0.383	2	0.826
Engaging communication	Mean Rank	20.83	19.17	19.10	0.231	2	0.891
Managing resources	Mean Rank	20.73	21.11	17.55	0.659	2	0.719
Empowering	Mean Rank	21.45	15.33	21.30	2.275	2	0.321
Developing	Mean Rank	22.03	18.33	17.45	1.381	2	0.501
Achieving	Mean Rank	20.40	20.39	18.85	0.157	2	0.924
Self-awareness	Mean Rank	17.80	24.50	20.35	2.367	2	0.306
Emotional resilience	Mean Rank	19.33	25.44	16.45	3.353	2	0.187
Motivation	Mean Rank	18.98	22.44	19.85	0.596	2	0.742
Interpersonal sensitivity	Mean Rank	20.03	23.17	17.10	1.494	2	0.474
Influencing	Mean Rank	20.50	19.94	19.05	0.116	2	0.944
Intuitiveness	Mean Rank	19.25	23.61	18.25	1.497	2	0.473
Conscientiousness	Mean Rank	19.05	25.11	17.30	2.582	2	0.275

Table 14: Kruskal-Wallis H-test of competencies for the repositioning, renewal, and mandatory categorisations of strategic importance

Hypothesis 6 (Meeting the project's overall objectives)

For the meeting the project's overall objectives, as a success criteria for the project, there were six possible responses (i.e. not relevant, not important, slightly important, moderately important, important, and very important). As such, a Mann-Whitney U-test was not possible. Therefore a Kruskal-Wallis H-test was conducted on the competencies to determine if there was a statistically significant difference in competencies for meeting the project's overall objectives. As this question was a

mandatory, there were 42 responses, with 5 (11.9%) of respondents judging it moderately important, 19 (45.2%) judging it important, and 18 (42.9%) judging it very important (see Table 15).

When evaluated at the $p < 0.05$ level, critical analysis and judgement, strategic perspective (both IQ), emotional resilience, interpersonal sensitivity, and conscientiousness (all EQ) were viewed as having statistically significant differences. When examined at the $p < 0.1$ level, vision and imagination (IQ), and motivation (EQ) also show statistically significant differences.

Meet overall project objectives		**Moderately important**	**Important**	**Very important**	**Kruskal Wallis Test**		
Competency	N	*5*	*19*	*18*	**χ2**	**df**	**Asymp. Sig.**
Critical analysis and judgement	Mean Rank	12.40	19.34	26.31	6.285	2	0.043
Vision and imagination	Mean Rank	11.00	21.45	24.47	4.851	2	0.088
Strategic perspective	Mean Rank	10.80	18.71	27.42	9.157	2	0.010
Engaging communication	Mean Rank	17.40	19.89	24.33	2.001	2	0.368
Managing resources	Mean Rank	11.70	21.58	24.14	4.227	2	0.121
Empowering	Mean Rank	15.10	20.16	24.69	3.285	2	0.193
Developing	Mean Rank	14.20	20.05	25.06	3.700	2	0.157
Achieving	Mean Rank	19.60	21.21	22.33	0.245	2	0.885
Self-awareness	Mean Rank	14.00	21.55	23.53	2.587	2	0.274
Emotional resilience	Mean Rank	9.60	22.16	24.11	6.035	2	0.049
Motivation	Mean Rank	15.90	18.32	26.42	5.378	2	0.068
Interpersonal sensitivity	Mean Rank	11.10	19.97	26.00	6.955	2	0.031
Influencing	Mean Rank	13.70	20.32	24.92	3.829	2	0.147
Intuitiveness	Mean Rank	13.70	20.32	24.92	2.769	2	0.250
Conscientiousness	Mean Rank	8.00	21.50	25.25	7.956	2	0.019

Table 15: Kruskal-Wallis H-Test of competencies for meeting the project's overall objectives

Hypotheses conclusions

Of the 6 hypotheses tested, 3 are accepted at $p < 0.05$, and 2 are accepted at $p < 0.1$ (see

Hypothesis	Accepted / Rejected		No of items rejecting	
	p < 0.05	*p < 0.1*	*p < 0.05*	*p < 0.1*
H1: Gender	Rejected	Rejected	3	8
H2: Complexity	Rejected	Rejected	1	2
H3: Contract type	Accepted	Rejected	0	1
H4: Fund sector	Accepted	Accepted	0	0
H5: Strategic importance	Accepted	Accepted	0	0
H6: Meeting project's overall objectives	Rejected	Rejected	5	7

Discussion

Cronbach's alpha

When examining the Cronbach's alpha, it is important to identify what is considered a good result of internal consistency. Goforth (2015) suggests that as the values of the alpha range from 0 to 1, the closer the alpha is to 1, the more internally consistent the results are. Further, alphas below 0.5 are not acceptable, and that scores between 0.65 and 0.8 are considered good for many researchers (Goforth, 2015). However, Tavakol and Dennick (2011) suggest that alphas between 0.70 and 0.95 are acceptable to researchers, but alphas over 0.90 may suggest that certain elements are redundant.

All competencies

The overall competencies alpha of 0.940 is very strong, and shows that the results of the competencies are internally consistent. Further, when individual elements are removed, the alpha does not change significantly, which further indicates strong internal consistency. This is in line with Goforth (2015), however, Tavakol and Dennick (2011) may suggest that there is some overlap between the competencies.

Critical analysis and judgement

The Cronbach's alpha for the critical analysis and judgment elements is 0.794, which is within the range of good as suggested by Goforth (2015). However, it is smaller than the alpha for the overall elements. Further, if the first two elements are removed, the internal consistency would rise, while removing the last two elements will reduce the consistency. This is especially true for the element "exhibits sound judgements and decision making", which, if removed would reduce the alpha to 0.676. This suggests that this element is the element that ties the internal consistency of the other elements together. Further, this may also indicate that of the 4 elements within this competency, this element may be the most important for a project manager to have.

Vision and imagination

The vision and imagination Cronbach's alpha (0.575) suggests that the elements are not internally consistent. However, removing any one element will drop the alpha lower than it is currently. This may suggest that while the vision and imagination competency is internally consistent with the other fourteen competencies, there may be other elements within this competency that were not correctly identified by the definition, or alternatively, the Irish project managers do not need use vision and imagination in their line of work.

Strategic perspective

The strategic perspective competency returned a Cronbach's alpha of 0.808. which suggests that the elements are internally consistent. However, if the element "balances short and long-term consideration" was removed, the internal consistency would drop by almost half, to 0.585. This would suggest that this element is the element that ties the other two elements together, and may, in fact, be a key task for project managers, especially those who are involved in projects that may require significant development of staff or management of resources.

Normality

The basis of this thesis are Muller and Turner's (2007, 2010a, 2010b, 2010c) articles. In these articles, the authors note that in order to obtain results used to determine the leadership styles of engaging, goal oriented, or involving, they transformed the data received to normality (Müller & Turner, 2010b). This would suggest that the data they originally received was not normally distributed, and the data needed to be manipulated to fit their purpose. Kim (2015) notes that this is not necessary in order to check for statistically significant differences in the data.

The results of the Shapiro-Wilk tests indicate that for 86 of the 90 tests (95.6%) they are not normally distributed at $p < 0.05$. This would suggested that for these 86 tests, at least, nonparametric testing should be used to determine statistical significance. The suggested model for these tests is the Kruskal-Wallis H-test with an alphas of $p < 0.05$ and $p < 0.1$. Further, where there is only 2 variables being tested against the

competencies, such as gender, a Mann-Whitney U-test may also be used. The remaining 4 tests, as mentioned above, should normally be conducted using parametric tests, such single factor ANOVA tests, or independent samples t-tests.

However, Sullivan (2017) notes that if the sample is small, the normality, or lack thereof, may not be completely accurate. As such, if the sample is small, non-parametric testing is recommended. To that end, the 4 remaining tests were also be conducted using the nonparametric tests of the Kruskal Wallis H-test, and if suitable, the Mann-Whitney U-test.

Hypothesis 1 (Gender)

It is noteworthy that neither Müller and Turner (2007) as well as Dulewicz and Higgs (2005) reported no significant differences in competencies between male and female project managers. Similarily, researchers in Turkey (Altıntas, 2010), Greece (Trivellasa & Reklitis, 2014), and Saudi Arabia (Alexander, Guta, & Poole) also reported that there were no significant differences in leadership styles between male and female leaders. However, Northouse (2016) dedicated an entire chapter of his book to the subject of gender and leadership, while Burke and Collins (2001) suggested there was a statistically significant differences in the self-reported leadership stlyes of male and female accountants.

The Mann-Whitney U-test and the Kruskal-Wallis H-test show that there were statistically significant differences in competencies between the genders, with strategic perspective (IQ), empowering, and developing (both MQ) being significant at $p < 0.05$. Müller and Turner (2010c) note that developing and empowering are related, and involve the maturing the skills, abilities, and confidence of the leaders team. This can be viewed as both an element of contingency theory, as well as transformational leadership.

This would seem to back up the suggestions by Burke and Collins (2001), that there is a difference in how male and female project managers self-report their leadership styles. Further, if the statistically significant differences at $p < 0.1$ were included, there would be an additional 4 competencies (critical analysis and judgement, vision

an imagination (both IQ), influencing, and conscientiousness (both EQ)) where men and women differ. Furthermore, when the mean rankings, from the Kruskal-Wallis H-test, were examined, the only competency where men were viewed as stronger was motivation.

Altogether, this might suggest that female project managers in Ireland have leadership styles that suits the needs of Irish based companies and teams.

Hypothesis 2 (Project complexity)

Muller and Turner (2007, 2010b) noted that for higher complexity projects, vision and imagination (IQ), as well as motivation and influence (both EQ) were higher for project managers on higher complexity projects that lower complexity projects. Additionally, on projects with a high complexity interpersonal sensitivity was viewed as important (Müller & Turner, 2010b).

In the survey, higher complexity projects were found to have a higher mean ranking in vision and imagination, strategic perspective (both IQ), as well as managing resources (MQ), and motivation (EQ). This is broadly in line with the results noted by Muller and Turner (2007, 2010a, 2010c). The managing resources competency would suggest that there is an element of resource balancing that was not captured in previous projects. In the funds industry, where projects are often viewed as a drain on the profits, this could suggest that project managers on highly complex projects must be more adept at finding the correct resources to advance their projects, due to specialisation and money concerns.

When looking at the mean rankings of all three complexities together, low complexity projects are ranked lowest in all competencies, with the exception of emotional resilience (EQ). This seems counter intuitive, as Muller and Turner (2010c) note that emotional resilience is normally characterised by the ability to stay calm and focused in the face of constant change, as well as the pressure and stress that is related to projects. Additionally, Hogan, in 2002, noted that transactional managers may be more suitable for low complexity projects (Geoghegan & Dulewicz, 2008). This would indicate that if companies are using the charismatic school of leadership for

determining their project managers, the more complex projects should be3 handled by transformational leaders. Alternatively, the high resilience ranking may indicate that this competency is needed where a project manager feels themselves underutilised within their project, which might cause additional stresses and uncertainties within their workplace.

When low complexity projects are removed, critical analysis and judgement (IQ), engaging communication, empowering, developing, achieving (all MQ), self-awareness, emotional resilience, interpersonal sensitivity, influencing, intuitiveness, and conscientiousness (all EQ) are ranked higher for medium complexity projects than higher complexity projects. This is once again similar to the results note by Muller and Turner (2010b), with the exception of influencing, which was listed as being higher in medium complexity projects.

The results suggest the overall project managers in the funds services industry need to have similar competencies as project managers in other industries, when facing similarly complex projects.

Hypothesis 3 (Contract type)

Muller and Turner (2010b) noted that for fixed price contracts, the competencies of critical thinking and judgement, strategic perspective (both IQ), and empowering (MQ) were ranked highest. They also noted that strategic perspective was "*borderline to insignificant*" for re-measurement contracts, while developing (MQ) was higher in fixed price contracts than alliance contracts (Müller & Turner, 2010b). However, they also suggest engaging communications (MQ) and interpersonal sensitivity (EQ) are important for fixed price contracts, while re-measurement contracts engaging communication and influence are important (Müller & Turner, 2007).

An examination of the rankings suggest that internal contract types require the highest strengths in all competencies, except empowering (MQ) and motivation (EQ), where 'other' is ranked highest. However these categories had only 3 respondents between them, possible skewing the results. When they were removed, re-

measurement was ranked highest in critical analysis and judgement, and vision and imagination (both IQ), while alliance contracts were ranked highest in strategic perspective (IQ), engaging communication, achieving (both MQ), and interpersonal sensitivity (EQ). Fixed price contracts were ranked highest in all other competencies.

These results differ from those suggested by Muller and Turner (2010b), with only empowering having a common high rating. This difference could be down to the industry the projects are based in, with the previous research having been carried out in IT, organisational change and construction (Müller & Turner, 2010a, 2010b). These differences, especially around fixed price contracts, suggest that the in the fund services industry in Ireland, projects managers need to be able to manage resources, empower and develop their teams (all MQ), while also being self-aware, providing motivation, influencing and being conscientous of others needs (all EQ). This would indicate that for the fix price contracts, the project mnager needs to have a high degree of emotional intelligence, combined with good managerial skills.

In a similar fashion, the results for re-measurement contracts suggest that Irish project managers need to have strong critical analysis and judgement, as well as vision and imagination, while having low strategic perspective. This is in line with the existing findings, as suggest by Muller and Turner (2010b). For alliance projects, the strategic perspective, engaging communincations, achieving, and interpersonal sensistivity all match up with the expected competencies of project managers engaged with one or more other entities. Indeed, these would also seem to fit with the Project Management Institute's (2013) approach to project management, especially around strategy, communication, and meeting the requirements of the project.

Hypothesis 4 (Fund services segment)

This hypothesis does not have any comparisons when examined against the existing literature. This is due, in large part, to the fact that this approach has never been undertaken in the funds services industry.

The rankings suggest that the trustee segment has project managers with higher competencies in engaging communication, developing, achieving (both MQ), self-awareness, interpersonal sensitivity, and intuitiveness (all EQ). For transfer agencies the competencies of critical analysis and judgement, and strategic perspective (both IQ), and empowering (MQ) are higher ranked. Custodians are ranked highest in motivation (EQ), while fund accountants are ranked highest in the other competencies. However, as noted, there were only 2 responses by people working in the trustee segment, and 3 in the custody segment, which may skew the results.

When the custodians and trustee segments are removed, the transfer agency competencies remain the same. Transfer agency is normally considered a value-add when companies are bidding for work in the likes of fund accounting or prime brokerage, and as such, it is often loss making. As such, the need to identify, and judge which additional projects are most important, in a resource poor segment, can be seen as a valuable competency for a project manager. This is also helped by the need to understand and adapt to the strategic considerations of the company.

Muller and Turner (2007) note that vision and imagination is detrimental for information systems project, while self-awareness and engaging communication are important. In the survey IT stream project managers were ranked lowest in all competencies, except for vision and imagination (IQ), and intuitiveness (EQ). This may suggest that project managers in this area, who support multiple other business segments, need to have a fairly balanced set of skills, without needing to specialise in any one competency.

Hypothesis 5 (Strategic importance)

Muller and Turner (2007) note that the strategic importance of a project is not a primary consideration when choosing a project manager. However, it was also noted that there are difference in competencies required of project managers, depending on the importance of the project (Muller & Turner, 2010b). In that paper, they noted that for repositioning contracts, vision and imagination, and strategic perspective (both IQ), as well as achieving (MQ) and self-awareness (EQ) were all classed as

medium, while motivation and intuitiveness (both EQ), were also medium for renewal projects. Vision and imagination was class as being low for renewal projects. For mandatory projects, vision and imagination, and strategic perspective (both IQ), as well as engaging communication, and achieving (MQ), self-awareness, emotional resilience, and intuitiveness (all EQ) were classed as medium. All other competencies were class as high.

When reviewing the rankings of the competencies by strategic importance, the 'other' categorisation is ranked highest in critical analysis and judgement, vision and imagination (both IQ), engaging communication, and managing resources (both MQ). This might suggest the need for project managers who are working on projects of indeterminate importance to possess a number of managerial and intelligence competencies, in order to guide to guide and gain traction for the project. However, as the 'other' categorisation of project importance only had 3 respondents, the results may be skewed.

When the 'other' categorisation is removed, repositioning also ranks highest in critical analysis and judgement (IQ), and engaging communication, developing, empowering, achieving (all MQ), as well as influencing (EQ). This may suggest that repositioning contracts need project managers who can take critical decisions, and be able to communicate these to a wider audience. Further the competencies of empowering and developing suggest that repositioning projects require managers who can increase their team's skills, and self-belief, while at the same time meeting the overall project requirements.

For renewal projects ranks highest in vision and imagination and strategic perspective (both IQ), managing resources (MQ), self-awareness, emotional resilience, motivation interpersonal sensitivity, intuitiveness, and conscientiousness (all EQ). This suggests that project managers in renewal projects need to be able to see the bigger picture in terms of the company/project, while also having a high degree of emotional intelligence, which would allow them to lead their teams to the overall goal. Mandatory projects ranked lowest across all competencies, except for empowering, motivation, and self-awareness. This could be due to the fact that the

goals and expectations of mandatory projects are often set by outside agencies, such as regulators, and that there is little scope to adapt or change the expected outcomes.

Hypothesis 6 (Meeting project's overall objectives)

Muller and Turner (2010c) note that for all project success criteria, managing resources (MQ) and motivation (EQ) are highly related to project success. They also note that project managers that complete projects successfully have stronger competencies than other project managers, except for intuitiveness (EQ). They, however, noted that strategic perspective (IQ) might be negatively associated with project success.

The survey data suggests that the where the respondents viewed meeting the project's overall objectives as very important, all the competencies were ranked highest. Likewise, where the objectives were viewed as important, all the competencies were ranked second highest. This would seem to be in line with a project manager's primary goal of meeting the objectives of the project, as set out at the start.

However, it is worth noting that there was some statistically significant differences, at $p < 0.05$, in critical analysis and judgement, strategic perspective (both IQ), emotional resilience, interpersonal sensitivity, and conscientiousness (all EQ). This suggests that the competencies needed to meet the goals may be different, depending on the need to meet all the project's goals.

Further research

The methods and results of the survey have identified areas that may warrant further academic research. The most critical, in terms of being able to continue testing on the attributes of the competency school, may the lack of proven psychometric tool to identify, and carefully measure these competencies. There is also a need for leadership styles and competencies to be determined for the private sector in Ireland, and especially in areas that may be critical to the continued growth of the Irish economy. This would include areas such as the financial services sector, as well as the tech sector that is increasing its presence in Ireland. These will be in particular need as companies relocate to Ireland from the UK, in the wake of Brexit, and the possible lack of access to the EU's single market for Britain.

Survey tool

With the retirement of the LDQ, by Professor Dulewicz, there is a need for a new survey tool to assess the 15 suggested competencies of the competency school of leadership. The tools that have been suggested, such as the "Schutte Test", the MLQ, and the MSCEIT only cover the emotional intelligence competencies of a leader, but fail to address either the managerial or intellectual competencies needed. Within this thesis, an attempt was made to utilise the definition provided by Professors Higgs and Dulewicz, to form the basis of a new tool. However, a more in-depth approach is needed to fill the gap that has been left by the retirement of the LDQ.

This is further emphasised by some of the Cronbach's alphas that were calculated. While the overall internal consistencies of the competencies was high (0.940), the Cronbach alpha for the reconstructed vision and imagination was quite low (0.575). These results suggest that a more nuanced survey tool, with a larger set of questions, might elicit more internally consistent data. An additional research tool might also examine the individual elements of each competency, to determine which elements might be important as a method of analysing the overall competencies.

Additional emphasis may also need to be placed on examining how competencies are related to the individual success criteria. There should be specific attention paid

to how project success is defined by the Project Management Institute, and other project management bodies, compared with how project success is defined in the actual organisations.

Leadership in Ireland

Most of the research conducted on leadership in Ireland revolves around either the civil service or the health care sector, and particularly the Health Services Executive. While these papers are useful for the examination of their particular sector, they are limited in that they are only for specific sectors of the economy. In fact, of the few papers on Irish leadership competencies, that did not include Ireland and the United Kingdom as one leadership style, the most detailed was published in an Iranian journal. It is clear that there is a need for further research on identifying if there is a uniquely Irish leadership style, what it may be, what particular competency strengths and weaknesses are present in this style, and how it affects the approach the leading different organisations types in Ireland.

Effect of multiculturalism

Ireland can now be considered a multicultural country with approximately 13% of its population being born outside of Ireland (Central Statistics Office, 2017). As a comparison, approximately 21% of the respondents noted that their place of birth was outside of Ireland, and 29% identified as having either joint Irish citizenship or citizenship other than Irish. As noted by Taleghani, et al. (2010), each country has its own leadership style, borne largely out of heir cultural preferences. In combination with identifying an Irish leadership style, it may be important to identify how to integrate these multicultural individuals within this leadership style.

Financial sector

In Müller and Turner's (2010a) paper, they identified that 10% of responses came from people within the financial sector. However, they did not distinguish as to what areas within that sector to which the respondents belonged. Within the Irish financial sector there are over 400 companies, including over 200 multinationals, specialising in a diverse range of products and services including commercial and retail banking,

fund promotion and administration, asset management, private banking and wealth management, national and cross-border insurance and reinsurance, and aircraft leasing (Department of Finance, 2015). There may exist the possibility to conduct further research into both the day-to-day and strategic leadership competencies needed to successfully lead companies in each of these areas.

Conclusion

An examination of the literature identifies that there is a clear difficulty in identifying and establishing the skills, competencies, behaviours, and traits of a leader. This difficulty has resulted in the establishment of a large number of schools of leadership, each emphasising a particular set of characteristics. This difficulty has also given rise to the idea of the celebrity leader, who's ways should be emulated, as well as spawning a plethora of books, magazine articles, and talks on the subject. This does not include the many tens of thousands of academic articles, each with their own take on leadership.

The loss of the main tool for testing competencies, the LDQ, when combined with the low uptake in academia, may have contributed to the paucity of articles and researchers in this school. However, the model as a whole has a large number of positive factors, including clearly defined competencies, the encompassment of elements from the emotional intelligence, charismatic, behavioural, and contingency schools, as well as the recognition that the situation that the leader faces will determine the skillset required. This blend of elements may not make it suitable for day-to-day operational managers, or leaders in upper management, but they do provide clear guidance for project managers. This is evidenced by the fact that across certain project types, the competency requirements will stay broadly similar, such as project complexity, but may differ, depending on the actual industry, and contract type.

Of the 6 hypotheses tested within the thesis, only 3 (contract type, fund sector, and strategic importance) were accepted at the $p < 0.05$ level, with the contract type being rejected at the $p < 0.1$ level. This suggests that there may be significant differences in competencies required of project managers when project complexity (H2) differs, or depending on the importance of meeting the project's overall objectives (H3). Additionally, there would seem to be differences in the competencies among male and female (H1) project managers, with the females being stronger in nearly all competencies.

As noted in the future research section, he loss of the LDQ means that there is a need for a new method of testing the competencies required of project managers. Additionally, there is a need to conduct and identify leadership competencies in the Irish private sector, as this does not seem to have been done. Along with that need, there may also need to be further research undertaken into the effects of multiculturalism on any leadership style identified. These research approaches should also be conducted along industry lines. This research would allow for a more scientific approach to the identification of leaders, and allow for more targeted training of project management practitioners. This would allow companies undertaking projects to appoint project managers who are best suited by competency, as well as allowing project managers identify any short comings or weaknesses in their competencies.

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Appendix A

GLOSSARY OF FINANCIAL TERMS

- Custodian - A bank that holds a mutual fund's assets, settles all portfolio trades and collects most of the valuation data required to calculate a fund's net asset value (NAV). (JP Morgan Chase, 2017)

- Fund Accounting – The process of accounting for a portfolio of investments such as securities, commodities and/or real estate held in an investment fund such as a mutual fund or hedge fund. (Toronto Financial Services Alliance, 2017)

- Transfer agent - An agent, usually a commercial bank, appointed to monitor records of stocks, bonds and shareholders. A transfer agent keeps a record of the name of each registered shareholder, his or her address, the number of shares owned, and sees that certificates presented for the transfer are properly cancelled and new certificates are issued in the name of the new owner. (JP Morgan Chase, 2017)

- Trustee
    1. An organization or individual who has responsibility for one or more accounts.
    2. An individual who, as part of a fund's board of trustees, has ultimate responsibility for a fund's activities. (JP Morgan Chase, 2017)

Appendix B

Definitions of the competencies of competency theory

(As cited by Müller & Turner (2007)

1. Intellectual competence:
    1. Critical analysis and judgment: the leader gathers relevant information from a wide range of sources, probing the facts, identifying advantages and disadvantages. Sound judgements and decisions making, awareness of the impact of any assumptions made.
    2. Vision and imagination: the leader is imaginative and innovative. He or she has a clear vision of the future and foresee the impact of changes on implementation issues and business realities.
    3. Strategic perspective: the leader is aware of the wider issues and broader implications. He or she balances short and long-term considerations and identifies opportunities and threats.

2. Managerial competences:
    1. Resource management: the leader organizes resources and co-ordinates them efficiently and effectively. He or she establishes clear objectives and converts long-term goals into action plans.
    2. Engaging communication: the leader engages others and wins their support through communication tailored for each audience. He or she is approachable and accessible.
    3. Empowering: the leader gives direct reports autonomy and encourages them to take on challenges, to solve problems and develop their own accountability.
    4. Developing: the leader encourages others to take on ever more-demanding tasks, roles and accountabilities. He or she develops others' competencies and invests time and effort in coaching them.
    5. Achieving: the leader shows an unwavering determination to achieve objectives and implement decisions.

3. Emotional competencies:
    1. Self-awareness: the leader is aware of his or her own feelings and able to recognize and control them.
    2. Emotional resilience: the leader is able to maintain consistent performance in a range of situations. He or she retains focus on a course of action or the need to obtain certain results in the face of personal challenge or criticism.
    3. Intuitiveness: the leader arrives at clear decisions and is able to drive their implementation in the face of incomplete or ambiguous information by using both rational and 'emotional' perceptions.
    4. Interpersonal sensitivity: the leader is aware of, and takes account of, the needs and perceptions of others in arriving at decisions and proposing solutions to problems and challenges.
    5. Influence: the leader can persuade others to change a viewpoint based on the understanding of their position and the recognition of the need to listen to this perspective and provide a rationale for change.
    6. Motivation: the leader has the drive and energy to achieve clear results and make an impact.
    7. Conscientiousness: the leader displays clear commitment to a course of action in the face of challenge and matches 'words and deeds' in encouraging others to support the chosen direction.

Appendix C

DEFINITIONS OF COMPETENCY LEADERSHIP STYLES

(As quoted by Dulewicz & Higgs (2005))

1. **Goal-oriented.** A set of behaviours in which the leader sets direction and behaves in a way in which he/she plays a significant role in directing others to achieve the key goals required to attain the performance required. This is not to suggest an authoritarian approach but rather behaviours which are strongly leader-centric.

2. **Involving**. A somewhat less leader-centric set of behaviours. In this category the leader's focus remains on providing a strong sense of direction. However, there is a more significant focus on involving others in both setting direction and, to a larger extent, in determining how goals will be achieved.

3. **Engaging**. Leader behaviours in this category are focused on facilitating others in achieving both nature of the direction and means of achieving the necessary goals. The leader is more concerned with developing the capability of others to achieve than with the close direction of the enterprise.

Appendix D

Questionnaire that was to be completed

Consent to participate

Introduction and Purpose
My name is Mark Biggar. I am a graduate student at the National College of Ireland, IFSC, Dublin 1, studying for a Master in Business Administration.

I would like to invite you to take part in my research study, which forms part of my master's thesis. The research concerns leadership styles of project managers, and how they align with the successful completion of projects in various areas of the fund services industry in Ireland.

Procedures
If you agree to participate in my research, you will be asked to complete an online survey. The survey will involve questions about the leadership skills and attributes of the last project manager that you worked with. The survey will consist of:

- 9 non-compulsory demographic questions,
- 3 questions regarding your company (2 compulsory),
- 4 compulsory questions on project type,
- 10 compulsory questions on success definition,
- 26 compulsory questions on the project manager's competences,
- 2 non-compulsory questions in order to provide further information.

It is estimated that the survey will take 10-15 minutes to complete.

Benefits
There is no direct benefit to you from taking part in this study. It is hoped that the research will increase the body of knowledge available to project management offices when hiring, promoting, and assigning individuals to particular project types. Further, it is hoped that the research will fill in a gap in the current academic literature, and allow for a more complete understanding of the skills, and attributes, required of project managers.

Risks/Discomforts
The questions that form part of the questionnaire concern attitudes and opinions as to the skills and attributes of successful project managers. It is not believed that any of the non-demographic questions will cause any discomfort to any individual taking the survey.

Confidentiality
The data you provide will be handled as confidentially as possible. If results of this study are published or presented, individual names, and other personally identifiable information will not be used. Further, if you were sent a link to this questionnaire through your company, no personally identifiable information will be provided to your company.

To minimize the risks to confidentiality only the researcher (Mark Biggar) will have access to the raw data. When the research is completed, the data may be saved for analysis of the findings, and completion of the academic criteria of the thesis. This data will not be available to other researchers, save to examine the results presented in the subsequent thesis and any academic articles that are derived therefrom. These records will be retained up to the 31st December, 2017, or the end of the academic requirements, whichever is later in date.

Compensation
You will not be paid for taking part in this study, although you will have the researcher's thanks.

Rights
Participation in research is completely voluntary. You are free to decline to take part in the project. You can decline to answer any questions and are free to stop taking part in the project at any time. If you exit the survey before the end, and without clicking "Submit", your answers will not be recorded.

Questions
If you have any questions about this research, please feel free to contact me. I can be reached at Mark.Biggar@student.ncirl.ie

If you agree to take part in the research, please select "YES" in the question below.

If you do not agree to take part in the research, please select "NO" in the question below, and the test will be cancelled.

*Required

Do you agree to take part in the research * Mark only one oval.

- ☐ Yes
- ☐ No Stop filling out this form.

Demographic questions

These questions will be used to determine the demographics of the respondents. All these questions are non-obligatory, and do not need to be completed to submit the survey.

Demographics 1: Your Age

- ☐ 18 - 25
- ☐ 26 - 30
- ☐ 31 - 35
- ☐ 36 - 40
- ☐ 41 - 45
- ☐ 46 - 50
- ☐ 51 - 55
- ☐ 56 - 60
- ☐ 61 - 65
- ☐ 66+

Demographics 2: Gender

- ☐ Male
- ☐ Female
- ☐ Prefer not to say
- ☐ Other _____

Demographics 3: Country of birth

_____

Demographics 4: Of what countries are you a citizen?

Please enter the names countries where you currently have citizenship. For multiple countries, please separate with a comma (,)

_____

Demographics 5: How long have you lived in Ireland?

- ☐ Less than 1 year
- ☐ 1 – 2 years
- ☐ 2 – 5 years
- ☐ 5 – 10 years
- ☐ 10+ years

Demographics 6: How long have you worked with your company?

- ☐ Less than 1 year
- ☐ 1 – 2 years
- ☐ 2 – 5 years
- ☐ 5 – 10 years
- ☐ 10+ years

Demographics 7: How many years' experience do you have working on project teams?

- ☐ Less than 1 year
- ☐ 1 – 2 years
- ☐ 2 – 5 years
- ☐ 5 – 10 years
- ☐ 10+ years

Demographics 8: Education

Please select your highest level of education

- ☐ Leaving certificate (Level 5) or equivalent
- ☐ Certificate (Level 6) or equivalent
- ☐ Ordinary degree (Level 7) or equivalent
- ☐ Honours degree (Level 8) or equivalent
- ☐ Post graduate diploma (Level 9) or equivalent
- ☐ Master degree (Level 9) or equivalent
- ☐ Doctoral degree / PhD (Level 10) or equivalent
- ☐ Post-doctoral qualifications
- ☐ Professional qualifications
- ☐ Other

Demographics 9: Project Management qualifications

Please select your highest level of project management qualification

- ☐ Professional qualifications (PMI, PMP, etc.)
- ☐ Certificate (Level 6) or equivalent
- ☐ Ordinary degree (Level 7) or equivalent
- ☐ Honours degree (Level 8) or equivalent
- ☐ Post graduate diploma (Level 9) or equivalent
- ☐ Master degree (Level 9) or equivalent
- ☐ Doctoral degree / PhD (Level 10) or equivalent
- ☐ Post-doctoral qualifications

Company Information

Information regarding your company

Company 1: Where is your company headquartered?

- ☐ Ireland
- ☐ Australia
- ☐ Belgium
- ☐ France
- ☐ Canada
- ☐ China
- ☐ Germany
- ☐ Hong Kong
- ☐ Italy
- ☐ Japan
- ☐ Luxembourg
- ☐ Spain
- ☐ South Africa
- ☐ South Korea
- ☐ The Netherlands
- ☐ United Kingdom
- ☐ United States of America
- ☐ Other:

Company 2: How many employees work for your company in Ireland?

- ☐ 0 - 25
- ☐ 25 - 50
- ☐ 50 - 100
- ☐ 100 - 500
- ☐ 500 - 1000
- ☐ 1000 - 5000
- ☐ 5000+

Project Type

Sector of the funds services industry *

- ☐ Custodian and custody services
- ☐ Fund accounting
- ☐ Transfer agent / agency, including investor services
- ☐ Trustee and trustee services
- ☐ I.T. streams in support of one of the above streams

Complexity of the project *

How complex would you describe the project? Tick all that apply.

- ☐ High
- ☐ Medium
- ☐ Low

Strategic importance of the project *

What was the driver behind the project? Tick all that apply.

- ☐ Renewal (e.g. change of business process, or provider)
- ☐ Mandatory (e.g. required by a central bank, or a regulatory authority)
- ☐ Repositioning (e.g. undertaken to attract new business, retain existing business, or provide new services to customers)
- ☐ Other

Contract type *

What type of contract was used for the project? Tick all that apply.

- ☐ Fixed price (e.g. work had to be done for a specific price even if costs were over/under)
- ☐ Alliance (agreement between two or more entities who undertake to work cooperatively for the purpose of completing the project)
- ☐ Re-measurement (contract whereby works undertaken can be re-measured at the end of the contract, to ensure all works agreed have been completed)
- ☐ Other

Success Criteria

For each of the following success criteria, please select the importance of each in your last/current project.

Scale:
0. (not relevant),
1. (not important),
2. (slightly important),
3. (moderately important),
4. (important),
5. (very important).

1. End-user satisfaction with the project's product or service

   * Mark only one oval.

2. Suppliers' satisfaction
   * Mark only one oval.

3. Project team's satisfaction
   * Mark only one oval.

4. Other stakeholders' satisfaction
   * Mark only one oval.

5. Meeting project's overall performance (functionality, budget and timing)
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

6. End-user satisfaction with the project's product or service
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

7. Meeting user requirements
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

8. Client satisfaction with the project results
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

9. Reoccurring business with the client
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

10. Meeting the respondent's self-defined success factor
    * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

11. Other

If there are other criteria that you or your company considers for the success of a project, please enter them below, and assign a score of 1 (not important) to 5 (very important)

_____

Competencies of a successful project manager - Part 1

With regards to your last/current project manager, who successfully delivered a project in the funds services, please rate them under the following headers.

Scale:
0. (not relevant),
1. (not important),
2. (slightly important),
3. (moderately important),
4. (important),
5. (very important).

1. Gathers relevant information from a wide range of sources
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

2. Probes the facts, identifying advantages and disadvantages.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

3. Exhibits sound judgements and decisions making.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

4. Exhibits awareness of the impact of any assumption made.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

5. Is imaginative and innovative.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

6. Has a clear vision of the future.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

7. Foresees the impact of changes on implementation issues and business realities.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

8. Is aware of the wider issues and broader implications.
   * Mark only one oval.

9. Balances short and long-term considerations.
   * Mark only one oval.

10. Identifies opportunities and threats.
    * Mark only one oval.

Competencies of a successful project manager - Part 2

With regards to your last/current project manager, who successfully delivered a project in the funds services, please rate them under the following headers.

Scale:
0. (not relevant),
1. (not important),
2. (slightly important),
3. (moderately important),
4. (important),
5. (very important).

1. Organizes resources and co-ordinates them efficiently and effectively.
   * Mark only one oval.

2. Establishes clear objectives and converts long-term goals into action plans.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

3. Engages others and wins their support through communication tailored for each audience.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

4. Is approachable and accessible.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

5. Gives direct reports autonomy and encourages them to take on challenges, to solve problems and develop their own accountability.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

6. Encourages others to take on ever more-demanding tasks, roles and accountabilities.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

7. Develops others' competencies and invests time and effort in coaching them.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

8. Shows an unwavering determination to achieve objectives and implement decisions.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

Competencies of a successful project manager - Part 3

With regards to your last/current project manager, who successfully delivered a project in the funds services, please rate them under the following headers.

Scale:
0. (not relevant),
1. (not important),
2. (slightly important),
3. (moderately important),
4. (important),
5. (very important).

1. Is aware of their own feelings and able to recognize and control them.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

2. Is able to maintain consistent performance in a range of situations.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	◯	◯	◯	◯	◯	◯	Very important

3. Retains focus on a course of action or the need to obtain certain results in the face of personal challenge or criticism.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

4. Arrives at clear decisions.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

5. Is able to drive their implementation in the face of incomplete or ambiguous information by using both rational and 'emotional' perceptions.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

6. Is aware of, and takes account of, the needs and perceptions of others in arriving at decisions and proposing solutions to problems and challenges.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

7. Can persuade others to change a viewpoint based on the understanding of their position.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

8. Recognises the need to listen to the perspective of others and provide a rationale for change.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

9. Has the drive and energy to achieve clear results and make an impact.
   * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

10. Displays clear commitment to a course of action in the face of challenge.
    * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

11. Matches 'words and deeds' in encouraging others to support the chosen direction.
    * Mark only one oval.

	0	1	2	3	4	5	
Not relevant	⬭	⬭	⬭	⬭	⬭	⬭	Very important

Any other information

Are there any skills, competencies, or attributes that a project manager should have, in order to lead a successful project?

_____
_____
_____
_____
_____

Are there any skills, competencies, or attributes that a project manager may have that cause a project to be unsuccessful?

_____
_____
_____
_____
_____

Thank you for taking the time to participate in this research.

Appendix E

Sample email sent to prospective participants

Dear XXXX,

My Name is Mark Biggar. I am currently a part time, post-graduate student, at the National College of Ireland, studying for a Master of Business Administration.

As part of the course, I am undertaking research into the leadership styles and competencies of project managers in the funds services industry in Ireland. This research aims to determine which leadership styles are most appropriate for project managers to have, in order to successfully complete projects. The areas of the funds services chosen for this research are the custodian, fund accounting, transfer agency, and trustee segments, as well as their IT support.

This type of research has never been conducted exclusively in Ireland, or on the funds services industry. As such, I believe this is a unique opportunity to provide a valuable insight into the area. I am hoping for your help in furthering this research, through the completion of a short online questionnaire. The questionnaire is open to project managers and members of the project teams within your organisation who are currently based in Ireland. The questionnaire is broken down into 53 questions, comprising of a series of questions covering the participant's demographics, the company's demographics, project success criteria, and project manager competencies. The survey has been structured to take 10 – 12 minutes.

I have attached a longer FAQ (in PDF format), answering some of the questions that I anticipate that you might have. If you would be interested in taking part in this research, I would ask you to reply to this email.

Further, if you believe that this opportunity to take part might be of interest to other project management teams within your organisation in Ireland, I would ask you to forward it to them. This will allow for great returns, and ideally, greater accuracy of the results.

Kind regards,

Mark

Appendix F

FREQUENTLY ASKED QUESTIONS (FAQ) THAT WERE DISTRIBUTED TO INVITEES

Q: What is the purpose of the research?

A: The primary purpose of the research is to determine the types of leadership styles that are appropriate for different project types within the funds services industry in Ireland. Specifically, it aims to determine which leadership style is best suited the various project types a company might encounter in the normal course of operation.

It is also hoped to be able to determine whether such factors as gender, age, education, nationality, company size, and company nationality play a role in the competencies needed of a project manager.

Q: Is this research based on previous academic works?

A: The research is based on the emotional, managerial, and intellectual competencies required of a leader, as well as the associated leadership styles. The research was originally proposed by Victor Dulewicz, and Malcolm Higgs[11]. Further research, by Ralf Müller, and Rodney Turner[12], suggested that the same competencies and leadership styles could be applied to project managers. Their research also suggests that project managers, working on different project types, with varying levels of complexity, success criteria, and priority, will require different competencies, and different leadership styles.

Q: Where has this research been conducted?

A: To date, the research has been conducted in various industries and project types. The non-project management research includes the British Royal Navy, and British Royal Air force, as well as senior officers in the Police Service of Scotland. Project management research has been conducted in the areas of organisational change, IT, engineering and construction, as well as the Kuwaiti oil industry. Similar research,

[11] Dulewicz, V, & Higgs, M., 1999, "Can emotional intelligence be measured and developed?" From: Leadership and Organization Development Journal, Vol 20, Issue 5, Pages 242 – 252.

[12] Müller, R, & Turner, J.R., 2007. "Matching the project manager's leadership style to project type". From: International Journal of Project Management, Vol 25, Issue 1, Pages 21 – 32.

using other techniques has been conducted with respects to female accountants, and the entertainment, pharmaceutical, and healthcare industries.

Q: What is original about this research topic?

A: Only two previous papers, dealing with emotional competencies and leadership styles, identified respondents as being either in the financial services industry, or being from the UK and Ireland. However, no research to date has covered the fund services sector, or separated Irish respondents from those of the UK. Further, no research has focused exclusively on the area of leadership styles in the funds sector in Ireland.

Q: How is the questionnaire conducted?

A: The questionnaire will be conducted online. The user is asked to go onto a Google Forms website, and complete the questionnaire in their own time.

Q: What type of questions will be asked?

A: The questionnaire is broken down into 9 sections, 44 comprising compulsory and 14 non-compulsory questions. The sections are broken down as follows:

- **Section 1:** Consent to participate in the research.
- **Section 2:** *9 non-compulsory* demographic questions regarding age, gender, nationality, education, etc.
- **Section 3:** *3 non-compulsory* demographic questions regarding the participants company (e.g. headquarter location, and number of employees in Ireland). There is also a question for a company code.[13]
- **Section 4:** *4 compulsory* questions regarding project types.
- **Section 5:** *11 compulsory* questions regarding definition of project success.
- **Section 6:** *10 compulsory* questions regarding necessary competencies of project managers.

[13] (See Q: How can company level data be provided?)

- **Section 7:** *8 compulsory* questions regarding necessary competencies of project managers.
- **Section 8:** *11 compulsory* questions regarding necessary competencies of project managers.
- **Section 9:** *2 non-compulsory* questions asking for further information on project manager competencies that may cause a project to be successful for unsuccessful.

Sections 5, 6, 7, and 8 are answered using a scale from not relevant to very important. All other sections are drop-down, free form, or tick-box.

Q: How long will the questionnaire take?

A: The questionnaire has been tested to take 10 – 12 minutes.

Q: Who should complete the questionnaire?

A: It is intended that the questionnaire should be completed by project team members, who work on projects based in Ireland. The project members should be from the custody, fund accounting, transfer agency, and trustee segments of the funds services industry, as well as the IT teams that support projects.

It is **not** intended for operational or day-to-day business teams.

Q: Why can operational business teams not participate in the research?

A: Previous research has shown that operational managers have a different set of competencies from project managers. Operational team members answering about their managers may skew the data towards competencies required of operational managers, which would affect the data and the conclusions drawn from the research.

Q: Will the data be identifiable?

A: No identifiable data, such as names, email addresses, phone numbers, or company name are asked for, or will be recorded.

Q: How do I access the questionnaire?

A: The questionnaire is available here.

Q: How long will the questionnaire be available?

A: The questionnaire will be available from the 1st June, 2017 until the 29th July, 2017.

Q: Who will have access to the primary (raw) data?

A: The primary data will be accessible only by the researcher (Mark Biggar). It may be required to share the primary data with the researcher's supervisor, external examiner, or research committee to ensure accuracy of research and conclusions. All primary data will fall under the provisions of the Data Protection Acts, 1988 and 2003.

Q: Who will have access to the processed data?

A: The processed data may be shared by the researcher for the purposes of academic research, publication, and as deemed appropriate by the researcher. All processed data will fall under the provisions of the Data Protection Acts, 1988 and 2003.

Q: Who are the researcher and supervisor, and what are their contact details?

A: Supervisor:

- Mr David Hurley, MSc.

  National College of Ireland.

  Email: david.hurley@ncirl.ie

  Tel: 01 406 0500

Researcher:

- Mr Mark Biggar, BA.
  Email: x09107321@student.ncirl.ie
  Tel: 0873249864

Q: How can this data help the participants' company?

A: By participating in the research, the participant will give their opinion on what are the necessary competencies of a project manager, in the fund services sector in Ireland. This data, when compiled, will allow companies to match prospective project managers to project types with greater accuracy, in order to further enhance the project's chance of success.

Q: Can companies view the data?

A: The raw data will not be made available to the participant's companies. This is to ensure that companies cannot identify respondents due to their answers. Processed data, on a company level (with identifying information removed), may be provided by the researcher, with prior agreement.

Q: How can company level data be provided?

A: If a company is interested in receiving company level data, it is necessary for them to utilise a code. This code may be entered by the participant, into the questionnaire in section 3, question 3. After the completion of the survey, and the processing of the data, high level information, such as key competencies, and project success criteria, will be shared by the researcher with the company.

In order to ensure that various companies do not use the same code, please contact the researcher prior to providing a code to the participants.

Appendix G

Shapiro-Wilk Normality tests, by hypothesis

H1: ***That there is no statistical difference in the competencies of successful project managers, based on the gender of the project manager.***

Tests of Normality				
	Gender	**Shapiro-Wilk**		
		Statistic	**df**	**Sig.**
Critical analysis and judgement	Male	.917	31	.020
	Female	.876	11	.092
Vision and imagination	Male	.948	31	.137
	Female	.842	11	.034
Strategic perspective	Male	.935	31	.059
	Female	.934	11	.449
Engaging communication	Male	.810	31	.000
	Female	.803	11	.010
Managing resources	Male	.851	31	.001
	Female	.868	11	.074
Empowering	Male	.852	31	.001
	Female	.649	11	.000
Developing	Male	.861	31	.001
	Female	.889	11	.135
Achieving	Male	.809	31	.000
	Female	.799	11	.009
Self-awareness	Male	.870	31	.001
	Female	.904	11	.205
Emotional resilience	Male	.895	31	.005
	Female	.887	11	.127
Motivation	Male	.878	31	.002
	Female	.915	11	.278
Interpersonal sensitivity	Male	.845	31	.000
	Female	.871	11	.079
Influencing	Male	.877	31	.002
	Female	.878	11	.097
Intuitiveness	Male	.835	31	.000
	Female	.786	11	.006
Conscientiousness	Male	.921	31	.025
	Female	.875	11	.090
*. This is a lower bound of the true significance.				
a. Lilliefors Significance Correction				

Table 16: Shapiro-Wilk normality test of the competencies for gender of project manager

H2: ***That there is no statistical difference in the competencies of successful project managers, based on the complexity of the project.***

Tests of Normality				
	Complexity of projects	**Shapiro-Wilk**		
		Statistic	**df**	**Sig.**
Critical analysis and judgement	Low	.750	3	.000
	Medium	.842	13	.022
	High	.930	26	.076
Vision and imagination	Low	.750	3	.000
	Medium	.956	13	.693
	High	.920	26	.045
Strategic perspective	Medium	.794	13	.006
	High	.902	26	.017
Engaging communication	Low	.987	3	.780
	Medium	.826	13	.014
	High	.736	26	.000
Managing resources	Low	1.000	3	1.000
	Medium	.716	13	.001
	High	.843	26	.001
Empowering	Low	1.000	3	1.000
	Medium	.743	13	.002
	High	.847	26	.001
Developing	Low	.750	3	.000
	Medium	.794	13	.006
	High	.884	26	.007
Achieving	Low	.750	3	.000
	Medium	.646	13	.000
	High	.808	26	.000
Self-awareness	Low	.750	3	.000
	Medium	.864	13	.043
	High	.904	26	.019
Emotional resilience	Low	.964	3	.637
	Medium	.927	13	.314
	High	.831	26	.001
Motivation	Low	.923	3	.463
	Medium	.950	13	.605
	High	.881	26	.006

Tests of Normality				
	Complexity of projects	Shapiro-Wilk		
		Statistic	df	Sig.
Interpersonal sensitivity	Low	.750	3	.000
	Medium	.820	13	.012
	High	.864	26	.003
Influencing	Low	.750	3	.000
	Medium	.785	13	.005
	High	.868	26	.003
Intuitiveness	Low	.750	3	.000
	Medium	.778	13	.004
	High	.829	26	.001
Conscientiousness	Low	.750	3	.000
	Medium	.912	13	.194
	High	.902	26	.018

Table 17: Shapiro-Wilk normality test of competencies for the complexity of the project

H3: ***That there is no statistical difference in the competencies of successful project managers, based on the contract type.***

Tests of Normality[c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u]				
	Type of contract for project	Shapiro-Wilk		
		Statistic	df	Sig.
Critical analysis and judgement	Fixed price	.891	13	.102
	Alliance	.898	17	.062
	Measurement	.921	9	.398
	Other			
Vision and imagination	Fixed price	.913	13	.199
	Alliance	.911	17	.105
	Measurement	.961	9	.806
Strategic perspective	Fixed price	.870	13	.053
	Alliance	.837	17	.007
	Measurement	.930	9	.478
	Other			
Engaging communication	Fixed price	.877	13	.065
	Alliance	.673	17	.000
	Measurement	.834	9	.049
Managing resources	Fixed price	.877	13	.065
	Alliance	.783	17	.001
	Measurement	.912	9	.327
	Other			

Tests of Normality[c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u]				
	Type of contract for project	Shapiro-Wilk		
		Statistic	df	Sig.
Empowering	Fixed price	.790	13	.005
	Alliance	.838	17	.007
	Measurement	.781	9	.012
Developing	Fixed price	.882	13	.075
	Alliance	.732	17	.000
	Measurement	.772	9	.010
	Other			
Achieving	Fixed price	.819	13	.012
	Alliance	.726	17	.000
	Measurement	.781	9	.012
	Other			
Self-awareness	Fixed price	.809	13	.009
	Alliance	.869	17	.021
	Measurement	.838	9	.055
	Other			
Emotional resilience	Fixed price	.927	13	.311
	Alliance	.862	17	.017
	Measurement	.874	9	.136
	Other			
Motivation	Fixed price	.901	13	.140
	Alliance	.906	17	.087
	Measurement	.617	9	.000
	Other			
Interpersonal sensitivity	Fixed price	.790	13	.005
	Alliance	.835	17	.006
	Measurement	.884	9	.172
	Other			
Influencing	Fixed price	.911	13	.192
	Alliance	.868	17	.021
	Measurement	.740	9	.004
	Other			
Intuitiveness	Fixed price	.811	13	.009
	Alliance	.809	17	.003
	Measurement	.903	9	.273
Conscientiousness	Fixed price	.912	13	.195
	Alliance	.868	17	.020
	Measurement	.864	9	.105
	Other			
*. This is a lower bound of the true significance.				
a. Lilliefors Significance Correction				
c. Critical analysis and judgement is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.				

d. Vision and imagination is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
e. Vision and imagination is constant when Type of contract for project = Other. It has been omitted.
f. Strategic perspective is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
g. Engaging communication is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
h. Engaging communication is constant when Type of contract for project = Other. It has been omitted.
i. Managing resources is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
j. Empowering is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
k. Empowering is constant when Type of contract for project = Other. It has been omitted.
l. Developing is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
m. Achieving is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
n. Self-awareness is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
o. Emotional resilience is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
p. Motivation is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
q. Interpersonal sensitivity is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
r. Influencing is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
s. Intuitiveness is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.
t. Intuitiveness is constant when Type of contract for project = Other. It has been omitted.
u. Conscientiousness is constant when Type of contract for project = Internal / regulatory / client based. It has been omitted.

Table 18: Shapiro-Wilk normality test of the competencies for the contract type

H4: ***That there is no statistical difference in the competencies of successful project managers, based on the fund services area.***

Tests of Normality[c,d,e,f]				
	Segment of fund industry	Shapiro-Wilk		
		Statistic	df	Sig.
Critical analysis and judgement	Custodian	1.000	3	1.000
	Fund accounting	.941	8	.621
	IT streams	.929	8	.503
	Transfer Agency	.845	21	.004
	Trustee			
Vision and imagination	Custodian	.965	3	.640
	Fund accounting	.883	8	.201
	IT streams	.776	8	.016
	Transfer Agency	.948	21	.308
	Trustee			
Strategic perspective	Custodian	.924	3	.465
	Fund accounting	.863	8	.129
	IT streams	.905	8	.323
	Transfer Agency	.870	21	.010
	Trustee			
Engaging communication	Custodian	.750	3	.000
	Fund accounting	.736	8	.006
	IT streams	.799	8	.028
	Transfer Agency	.822	21	.001
	Trustee			
Managing resources	Fund accounting	.871	8	.156
	IT streams	.883	8	.203
	Transfer Agency	.873	21	.011
	Trustee			
Empowering	Custodian	.750	3	.000
	Fund accounting	.849	8	.093
	IT streams	.810	8	.037
	Transfer Agency	.824	21	.002
	Trustee			
Developing	Custodian	.750	3	.000
	Fund accounting	.860	8	.120
	IT streams	.878	8	.181
	Transfer Agency	.906	21	.046

Tests of Normality[c,d,e,f]				
	Segment of fund industry	Shapiro-Wilk		
		Statistic	df	Sig.
Achieving	Fund accounting	.798	8	.027
	IT streams	.802	8	.030
	Transfer Agency	.806	21	.001
	Trustee			
Self-awareness	Custodian	.964	3	.637
	Fund accounting	.566	8	.000
	IT streams	.931	8	.522
	Transfer Agency	.900	21	.035
	Trustee			
Emotional resilience	Custodian	.750	3	.000
	Fund accounting	.827	8	.056
	IT streams	.857	8	.113
	Transfer Agency	.910	21	.055
	Trustee			
Motivation	Custodian	1.000	3	1.000
	Fund accounting	.892	8	.245
	IT streams	.925	8	.473
	Transfer Agency	.943	21	.253
	Trustee			
Interpersonal sensitivity	Custodian	.750	3	.000
	Fund accounting	.849	8	.093
	IT streams	.934	8	.557
	Transfer Agency	.779	21	.000
	Trustee			
Influencing	Custodian	.750	3	.000
	Fund accounting	.665	8	.001
	IT streams	.788	8	.021
	Transfer Agency	.933	21	.156
	Trustee			
Intuitiveness	Fund accounting	.641	8	.000
	IT streams	.835	8	.067
	Transfer Agency	.864	21	.008
	Trustee			
Conscientiousness	Custodian	.750	3	.000
	Fund accounting	.897	8	.274
	IT streams	.913	8	.374
	Transfer Agency	.889	21	.022
	Trustee			

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction
c. Managing resources is constant when Segment of fund industry = Custodian. It has been omitted.
d. Developing is constant when Segment of fund industry = Trustee. It has been omitted.
e. Achieving is constant when Segment of fund industry = Custodian. It has been omitted.
f. Intuitiveness is constant when Segment of fund industry = Custodian. It has been omitted.

Table 19: Shapiro-Wilk normality test of the competencies for segment of the fund industry

H5: ***That there is no statistical difference in the competencies of successful project managers, based on the strategic importance of the project.***

Tests of Normality				
	Strategic importance of projects	**Shapiro-Wilk**		
		Statistic	**df**	**Sig.**
Critical analysis and judgement	Repositioning	.856	20	.007
	Renewal	.775	9	.011
	Mandatory	.918	10	.338
	Other	1.000	3	1.000
Vision and imagination	Repositioning	.918	20	.091
	Renewal	.887	9	.188
	Mandatory	.811	10	.020
	Other	.750	3	.000
Strategic perspective	Repositioning	.891	20	.028
	Renewal	.889	9	.195
	Mandatory	.902	10	.229
	Other	1.000	3	1.000
Engaging communication	Repositioning	.802	20	.001
	Renewal	.899	9	.246
	Mandatory	.743	10	.003
	Other	.750	3	.000
Managing resources	Repositioning	.843	20	.004
	Renewal	.810	9	.026
	Mandatory	.878	10	.125
	Other	.964	3	.637
Empowering	Repositioning	.788	20	.001
	Renewal	.913	9	.338
	Mandatory	.841	10	.045
	Other	.750	3	.000

Tests of Normality				
	Strategic importance of projects	Shapiro-Wilk		
		Statistic	df	Sig.
Developing	Repositioning	.855	20	.006
	Renewal	.926	9	.447
	Mandatory	.826	10	.030
	Other	.893	3	.363
Achieving	Repositioning	.800	20	.001
	Renewal	.813	9	.028
	Mandatory	.824	10	.028
	Other	1.000	3	1.000
Self-awareness	Repositioning	.904	20	.050
	Renewal	.823	9	.037
	Mandatory	.903	10	.238
	Other	.964	3	.637
Emotional resilience	Repositioning	.901	20	.044
	Renewal	.913	9	.338
	Mandatory	.886	10	.151
	Other	.964	3	.637
Motivation	Repositioning	.920	20	.098
	Renewal	.825	9	.039
	Mandatory	.856	10	.069
	Other	.964	3	.637
Interpersonal sensitivity	Repositioning	.858	20	.007
	Renewal	.838	9	.055
	Mandatory	.835	10	.038
	Other	1.000	3	1.000
Influencing	Repositioning	.863	20	.009
	Renewal	.846	9	.068
	Mandatory	.886	10	.152
	Other	.750	3	.000
Intuitiveness	Repositioning	.856	20	.007
	Renewal	.805	9	.024
	Mandatory	.658	10	.000
	Other	1.000	3	1.000
Conscientiousness	Repositioning	.933	20	.178
	Renewal	.922	9	.407
	Mandatory	.913	10	.301
	Other	.964	3	.637

Table 20: Shapiro-Wilk normality test of the competencies for the strategic importance of the project

H6: ***That there is no statistical difference in the competencies of successful project managers, based on meeting the project's overall performance.***

Tests of Normality				
	Meet project's overall performance	Shapiro-Wilk		
		Statistic	df	Sig.
Critical analysis and judgement	Moderately important	.943	5	.687
	Important	.940	19	.266
	Very important	.855	18	.010
Vision and imagination	Moderately important	.943	5	.687
	Important	.908	19	.069
	Very important	.927	18	.171
Strategic perspective	Moderately important	.951	5	.741
	Important	.878	19	.020
	Very important	.829	18	.004
Engaging communication	Moderately important	.817	5	.111
	Important	.794	19	.001
	Very important	.777	18	.001
Managing resources	Moderately important	.943	5	.685
	Important	.835	19	.004
	Very important	.856	18	.011
Empowering	Moderately important	.956	5	.777
	Important	.868	19	.013
	Very important	.775	18	.001
Developing	Moderately important	.885	5	.332
	Important	.851	19	.007
	Very important	.877	18	.023
Achieving	Moderately important	.821	5	.119
	Important	.793	19	.001
	Very important	.802	18	.002
Self-awareness	Moderately important	.881	5	.314
	Important	.878	19	.020
	Very important	.871	18	.019
Emotional resilience	Moderately important	.961	5	.814
	Important	.827	19	.003
	Very important	.867	18	.016
Motivation	Moderately important	.951	5	.747
	Important	.905	19	.061
	Very important	.862	18	.013

Tests of Normality				
	Meet project's overall performance	Shapiro-Wilk		
		Statistic	df	Sig.
Interpersonal sensitivity	Moderately important	.828	5	.135
	Important	.886	19	.027
	Very important	.807	18	.002
Influencing	Moderately important	.552	5	.000
	Important	.808	19	.001
	Very important	.834	18	.005
Intuitiveness	Moderately important	.684	5	.006
	Important	.837	19	.004
	Very important	.775	18	.001
Conscientiousness	Moderately important	.961	5	.814
	Important	.882	19	.023
	Very important	.890	18	.039

Table 21: Shapiro-Wilk normality test of the competencies for meeting the project's overall performance