An Investigation into the Associative Relationship Between Transformational Leadership and Innovative Working Behaviour, in Irish Technology Consulting Organisations

Jeremy Kearney

Master of Business Administration

National College of Ireland

September 2017

I. Abstract

Purpose: The purpose of this research paper is to investigate the relationship between Transformational Leadership (TL) and Innovative Working Behaviours (IWB) by employees within Irish Technology Consulting Organisations (TCOs). To this end, the paper will examine the mediating influences on employee's Creative Self-Efficacy (CSE) and the Organisation's Climate for Innovation (OCI), in the TL and IWB causal relationship.

Findings: The quantitative results indicated that TL did not have an associative relationship with IWB or employee CSE within the sample population. TL did have a significant positive relationship with OCI within the TCO context. Employee CSE was found to have the most significant relationship in promoting IWB. Further qualitative results indicated that the distributed leadership structure within TCOs reduces the positive influences of TL.

Research Limitations and Implications: The research participants were from several different TCOs, each with their own and varying level of TL. The research methodology was limited to a cross-sectional study, supporting a time-specific result only. Future research should conduct a longitudinal quantitative analysis of the relationship between TL, CSE, OCI and IWB on a single TCO, to support a deeper understanding of how TCO leadership frameworks can leverage TL, and also to measure the transformative properties of TL on TCO employees over time.

Practical Applications: By supporting an in-depth understanding of the associative relationship between leadership and IWB (in a knowledge-intensive services organisation) - this will allow TCOs to review their leadership and employee engagement frameworks to better promote innovative working behaviours, to maximise the potential for positive organisational outcomes.

Originality and Value: To date, the main body of research on the relationship between TL and innovation has focused on product-centric and/or non-skilled services organisations. This research paper extends the relational research (between TL and IWB) into the growing knowledge-services and technology consulting sectors. The study expands on the existing research, by focusing on knowledge-services and consulting organisations subjects. The study brings academic and practitioner value by supporting a deeper understanding of the value of TL as a predictor positive of outcomes in 'knowledge economy' technology services organisations.

Keywords: Transformational Leadership, Innovative Working Behaviour, Organisational Climate for Innovation, Innovation, Creative Self-Efficacy, Consulting Organisations, Technology

II. Thesis/Author Declaration Form

Submission of Thesis and Dissertation

National College of Ireland

Research Students Declaration Form

Name: Jeremy Kearney

Student Number: 15016030

Degree for which thesis is submitted: Master of Business Administration (MBA)

Material submitted for award

(a) I declare that the work has been composed by myself.

(b) I declare that all verbatim extracts contained in the thesis have been distinguished by quotation marks and the sources of information specifically acknowledged.

(c) My thesis will be included in electronic format in the College Institutional Repository TRAP (thesis reports and projects)

(d) Either *I declare that no material contained in the thesis has been used in any other submission for an academic award.

Or *I declare that the following material contained in the thesis formed part of a submission for the award of:

Master of Business Administration (MBA)

Awarding Body: National College of Ireland (NCI)

Signature of Research Student:

_____

Date:

_____

III. Acknowledgements

I would like thank Frank Devitt for his supervision, patience and support during the dissertation process. Thank you to all the staff at NCI, but particularly Jonathan Lambert for his assistance in the final stages of my dissertation's quantitative write up, and Keith Brittle for his assistance during the dissertation research stage.

Throughout the process of completing the MBA there have been some of standout programme lecturers who have made their time, support and advice freely available to me, and for this I will always be appreciative – so thank you to Dave Hurley and Aidan Daly.

I would like to thank the entire MBA class 2015 – 2017, for making the MBA process a truly enjoyable learning experience. Within the class, I have been truly fortunate to have been part of an amazingly committed team for all but one projects, so thank you to Edel, Siobhan and Martin for your commitment, support and friendship throughout the MBA.

Thank you, Jeanne Le Bailly – for all the support and patience throughout the this journey.

And finally, thank you to my parents (Jim and Jeannette), family and friends for their on-going support.

IV. Table of Contents

V. List of Tables

VI. List of Figures

VI. Table of Appendices

VII. Abbreviations

Abbreviation	Long Name
CSE	Creative Self-Efficacy
IWB	Innovative Working Behaviours
OCI	Organisational Climate for Innovation
POSI	Perceived Organisational Support for Innovation
TCO	Technology Consulting Organisation
TL	Transformational Leadership
IA	Idealised Influence / Attribution (TL Subconstruct)
IS	Intellectual Stimulation (TL Subconstruct)
IM	Inspirational Motivation (TL Subconstruct)
IC	Individual Consideration (TL Subconstruct)
IB	Idealised Behaviours (TL Subconstruct)

1.0 Introduction

1.1 Academic Background

Academics and business practitioners concur in the view that organisational innovation is a key enabler in supporting organisational growth and driving success in today's dynamic business environment (Aas & Pedersen, 2011; Ordanini & Parasuraman, 2011).

Organisational participation in the knowledge economies (Machlup, 1980; Porat and Rubin, 1977) drives the need to develop internal innovative capacity within firms; whereby employees seek out new technological and growth opportunities, while supporting organisational ambidexterity (Duncan 1976) to address the challenges of participating in uncertain and competitive markets (Yuan & Woodman, 2010; Bei & Yidan, 2016).

Understanding the criticality of innovative capacity and innovative staff behaviours to an organisation's success, has focused leading academics to investigate the enabling factors to support employee innovative working behaviours (IWB). Amabile et al. (1996) identified that employee 'innovative behaviours' as by-products of *"idea generation, efficient multitasking processes and managerial work related motivation"*.

Building upon Amabile's et al. (1996) findings, Oldham & Cummings (1996) added that the environmental characteristics and organizational context, such as the 'leadership supervisory style' to be an enabling factor in an employee innovative behaviours. Subsequently, Amabile, (1998) and Jung (2001) both validated leadership as the key enabler in promoting innovative employee performance.

Research into the varying influential properties of different styles of leadership, identified that Transformational Leadership (TL) as one of the most influential in terms of promotion of innovative behaviours within an organisation (Bass, 1985; Gong, Huang & Farh, 2009; Kao et al., 2015).

In the promotion of IWB among an organisation's employees, there are several different types of stimulating actors that promote the desired behaviours (Martins and Terblanche, 2003). While the leadership style of an organisation can be positively linked with innovative employee behaviours, other academics argue that there are more subtle driving factors.

Panuwatwanich, Stewart and Mohamed (2008) put forward the argument that innovation can manifest based on an employee's perceived organisational climate for innovation (in the context of this paper this will be referred to as Organisational Support for Innovation (OCI).

This argument correlates with the TL research by Sattayaraksa and Boon-itt (2016), who found that CEO-level TL can be recognised as a key enabler for an innovative climate, and in the promotion of organisational-wide innovative staff behaviours.

Other studies have investigated other drivers of IWB by employees, such as psychological traits, e.g. the creative capacity of employees. This characteristic is measured and referred to as an individual's 'creative self-efficacy' (CSE) which is the personality characteristic that is concerned with the ability to innovate, and demonstrates linkages with the individuals sustained perseverance to create and produce innovative outcomes. Choi (2004) argues that the presence of CSE in an employee is closely linked with innovative behaviours. This linkage relates to the persistence properties of CSE that motivates employees to use innovative strategies to overcome challenges.

Extrapolating out Choi's (2004) findings on CSE, it can be argued that a leadership style across an organisation does promote CSE within individuals and indirectly promote IWB for the organisation. This hypothesis ties in closely with the research by Sattayaraksa and Boon-itt (2016), that positively linked C-suite TL and a perceived positive level of OCI within firms.

1.2 Research Gap Addressed and Objectives

Understanding the critical relationship between innovation and organisational success in knowledge-intensive services organisations; this research paper examines the causal relation between organisational levels of TL and IWB, through the mediating factors of CSE and OCI in Irish Technology Consulting Organisations (TCOs).

While the extant research into organisational innovation, has identified leadership style as a key enabler of innovation. Transformational leadership (TL) has been recognised as the most influential enabler of innovation. To date main body research into the linkages between TL and organisational innovation (IWB) has focused on product-centric organisations (Jung, 2001; Choi et al., 2016) and in non-skilled services organisations (Kao et al., 2015) [in a collocated working environments].

There is a gap in the existing literature and research into the influence of TL within the 'knowledge economy' (Machlup, 1980; Porat and Rubin, 1977) service sector organisations. This study will look to address this gap by focusing the study on participants in skilled knowledge-intensive services / consulting sector (TCOs), in order to gain an understanding of the influence of TL on IWB within this sector.

The second gap that will be addresses in this paper, is the influencing role of the perceived 'Organisational Support for Innovation' (OCI) on employee IWB, within knowledge services organisations. Past literature has positively linked the mediating relationship between OCI, TL and IWB within the product-centric and unskilled service sectors (Eisenberger et. al, 1997; Rhoades, & Eisenberger, 2002; Kao et al., 2015; Choi et al., 2016). This research paper, extends the academic understanding of in the relations into knowledge-intensive service organisation employees.

The third gap to be addresses in the paper is the causal relationship between TL and employee creative self-efficacy (CSE), and influencing role of CSE on and employee's IWB, within knowledge economy organisations (TCOs).

Existing CSE literature (Tierney & Farmer, 1997, 2002; Gong, Huang & Farh, 2009) and particularly for CSE and service innovation (Kao et al., 2015) has positively linked both constructs, but has focused on non-skilled sectors. This paper will extend the academic understanding into the knowledge-intensive services sector.

1.3 Research Context and Research Subject

In the context of organisational makeup, innovative output and participation in knowledge-intensive services sector – TCOs are quite unique in composition, when compared to traditionally structured technology and services firms.

The TCO team structure is distributed in composition, as opposed to the traditional firm's 'co-located' team structures. A TCO's core competence is knowledge management, knowledge-service delivery and service innovation. In terms of innovation and new service design, the TCO's key asset is the employee's innovative capacity and ability to delivery services.

Today, Technology-Consulting Organisation (TCOs) face two key challenges, one being to engage with their employees in a 'virtual' team setting, and also to develop the same individual's innovative capacity; for the benefit of the TCO.

The second key challenge, is to remain competitive in highly volatile and contested markets, where technology disruption and the landscape of customer-demand can quickly shift, as new emergent technologies rapidly proliferate (Dunford, 2000). To address the second challenge, TCOs must continually innovate in their technical and service offerings to remain competitive.

Barnes et al. (2004) capture this business need in their observations on consultancy organisations:

> *'it is imperative that companies continuously learn about their customers ever changing needs / expectations and manifest that understanding by offering increased value.'*

To match this rate of change, TCOs must develop and promote their staff's innovative capacity. The creation of an internal innovation capability, will support TCOs to innovate in their technical and service offerings; and in turn remain competitive in their respective market sector.

1.4 Research Approach

The study takes mixed methods research approach. Primarily, an empirical approach using a cross-sectional research design, leveraging an online quantitative questionnaire to collect subject data – measuring the TCO's TL and OCI, and also the employee's self-rated CSE and IWB. Data collection will focus on subjects from medium to large Technology Consulting Organisations (TCOs) in the Irish market. A non-random, snowball sampling approach was taken to distribute the questionnaire to participants, within technology consulting organisations (TCOs) and professional networks. Quantitative analysis will be conducted on the data, and where anomalies are seen when compared to the expected academic literary predictions, a qualitative review will happen, using unstructured interviews.

1.5 Research Value

By understanding the importance of the individual's employee contribution to the innovative process (within the context of a TCO), and the causal influence of TL to an individual's innovative behaviour - it can then be extrapolated that the TL has a direct influence on organisational performance in the context of TCOs.

This study looks to build upon the extant research into TL, which indicates positive influences by TL on the innovative process and behaviours, which was originally built upon on Bass & Avolio's (1994) seminal TL papers and subsequently expanded by Jung et al. (2003) research paper which offered an understanding of causal relationship between TL and innovative behaviours.

While the main body of research of the influences of TL on innovation has predominantly focused on product-centric organisational studies, there has been limited research in the

space of TL influence in the innovation of services, this study will look to address this research gap. While the existing literature has found positive linkages in the causal relationships between TL and IWB, the existing literature has failed to close the academic and practitioner understanding of TL within a knowledge-intensive services organisational context.

This paper will build upon the research into the relations between TL and 'service innovation' behaviours by Kao et al. (2015), and to deepen the relational understanding of TL and IWB in a technology organisational context, by Choi et al. (2016).

1.6 Outline of Study

This research paper is organised into six sections:

Section 1 - Introduction: this section contains a brief academic introduction to the causal relationship between TL and IWB and mediating factors of CSE and OCI. The section identifies the existing research gaps and highlights how this paper will address these gaps.

Section 2 – Literature Review: this sections explores the past and present academic understanding of the individual components and inter-relationships between TL, CSE, OCI and IWB in industry.

Section 3 – Research Questions: this section details the research question and objectives for the analysis of the relationships between TL, CSE, OCI and IWB.

Section 4 – Research Methodology: this section details the research philosophy, methodology and instruments.

Section 5 – Results: this section details the results of the analysis.

Section 6 - Discussion: This section reviews the results analysis delivers a critical evaluation of the study and its practitioner implications.

Section 7 – Conclusion: this section provides a conclusion to the study reviewing the academic and practical learnings from the analysis.

2.0 Literature Review

The greatest enabling factor that any TCO can have (to meet their customer's evolving demands) is innovative employees; who are empowered to seek out opportunities and drive service innovation. Many consulting and knowledge-intensive services organisations use service customisation strategies, to differentiate themselves from competitors and to gain market advantage (Huffman & Kahn, 1998). By creating an organizational environment and culture that supports creative efforts and facilitates diffusion of knowledge, leaders can significantly boost organizational creativity (Yukl, 2001). It is key for TCOs to understand the causal relationships between their leadership behaviours and the employee innovative outputs, to maintain a competitive advantage within their respective sectors.

The following literature review investigates the role of 'Transformational Leadership' (TL) as a contributing factor in promoting employee 'Innovative Working Behaviours' (IWB), and investigates the academic understanding of the mediating factors of employee 'Creative-Self-Efficacy' (CSE) and the 'Organisational Climate for Innovation' (OCI) within the relationship.

Note: In the following sections the terms 'employee' and 'follower' are interchangeable.

2.1 Transformational Leadership (TL)

Burns (1978) first introduced the academic concept of transformational leadership (TL) in his seminal political writing called 'Leadership'. Per Burns, TL appeals to follower moral values and as such raises follower consciousness on impacting ethical issues, and consequently mobilises followers and raises their commitment to a cause. Subsequently, Bass (1985) and Yukl (1999) have expanded on this leadership definition, citing that the process of TL transforms followers beyond their own self-interest; by altering their moral commitment, personal motives and individual ideas to be fully committed to a (leader-led) shared cause, and by consequence the followers raise their own performance beyond expectations.

Bass and Avolio (1995) define and identify TL by measuring five leaderships behavioural components. These behavioural components include the following:

1) **Idealised Behaviour (IB) and Attribution (IA):** this behaviour results in the leader gaining follower commitment, by creating a sense of admiration and loyalty. This follower commitment is then fostered to create a common mission and objective, in which both leader and follower will commit to achieving.

2) **Intellectual Stimulation (IS):** this behaviour manifests in the act of the leader empowering followers to view (new/old) problems from alternate viewpoints, and encourages followers to take new approaches in problem solving.
3) **Inspirational Motivation (IM):** this behaviour is demonstrated by the leader communicating an appealing vision to followers, and by articulating high confidence and expectations in the follower's ability to execute against the vision.
4) **Individual Consideration (IC):** this behaviour is demonstrated by the leader setting time aside to attend to individual follower's needs; this can be displayed through empathy, mentorship and coaching with the goal of developing individual follower skills.

In the context of TCOs, organisational awareness of to market trends and the enablement of agility (the alignment of internal organisational skills to match business needs) are required to stay competitive. Choi et al. (2016) identifies TL as a key enabling and employee motivating factor in driving forward the innovation process. To engage employees, TL use of organisational visioning is key in supporting and maintaining employee buy-in and motivation.

TL leaders motivate and energise their followers by defining an attractive goals and visions, providing meaning and intrinsic challenge in their employees' role (Bass & Avolio, 1994). This approach has since been validated by motivational thought-leaders such as Dan Pink (2009). Studies have indicated that TL leaders engage and involve their followers in the transformational / innovative process, and this relationship goes beyond the day-to-day contractual agreements or standard role definitions, as followers become intrinsically motivated to self-drive change for the leader (Gardner & Avolio, 1998). Through these behaviours transformational leaders evolve and promote their follower's innovative mind-set.

Jung, Chow and Wu (2003) noted that a past research had indicated that intrinsic motivation leads to creativity; because intrinsically motivated people tend to prefer novel approaches to problem solving (Amabile et al., 1994).

Follower engagement is key to the success of all leaders. The TL behaviour of individualized consideration supports the growth of followers, skills enablement and engages them in the innovative process (Sattayaraksa et al., 2016; Yasin Ghadi Fernando & Caputi, 2013). In the context of TCOs, this aspect of TL support of individuals' technical skills development is key to drive success.

The dominate view within the extant academic and practitioner literature is that TL supports individual employee development, develops open communication across organisations and through the creation of collaborative channels increases innovative behaviours; at both an individual and organisational level (Bass, 1999; Bass & Riggio, 2006; Choi et al., 2016).

2.2 Organisational Climate for Innovation (OCI)

> *"Post-industrial organisations today are knowledge-based organisations and their success and survival depend on creativity, innovation, discovery and inventiveness. Organisational culture appears to have an influence on the degree to which creativity and innovation are stimulated in an organisation."*
>
> (Martins & Terbalnche, 2003)

The concepts of culture and climate have been regularly interchanged throughout the extant literature, however many academics look to define these as separate factors. Patterson et al. (2005) referred to organization culture as "a set of shared values and norms held by employees that guide their interactions with peers, management, and clients". Lundy and Cowling (1996) defined culture with the known adage "the way we do things around here".

An organisation's climate was defined by Patterson et al. (2005) as employees' perceptions of their organization. As cited by Schneider et al. (2000), an organizational climate is represented by the detailing of employee experiences within an organization. And as such, an organisations climate can be defined as the 'surface manifestation of culture' (Schneider, 1990).

While there has been extensive research into the factors within an organisation that creates a positive OCI. Research by Martins and Terblanche (2003) identified the determinant components and factors as; 'strategy, structure, support mechanisms, behaviour that encourages innovation, and open communication'.

Tierney and Farmer (1997) point to the importance of an organisation's leadership and employees support mechanisms to create a 'psychological climate' for employee innovation. The creation of a supportive climate leads indirectly to the creation of a firms self-perpetuating innovative culture and indirectly supports the OCI.

Through reviewing Martins and Terblanche (2003) findings on the factors that support a positive OCI; it can be purported that there is a close correlation with the socio-psychological constructs that create a positive OCI and the defining behaviours of TL (Bass and Avolio, 1995).

Bass and Avolio (1995) research identified the TL constructs as; 1) 'individual consideration' (i.e. mentorship and coaching), 2) 'inspirational motivation' (demonstrating employee support and confidence in ability) and 3) 'intellectual stimulation' (i.e. promoting approaching problems innovatively). These socio-psychological constructs correlation closely with Martins and Terblanche (2003) OCI determining factors, and supports previous academic observations on the associative relations between an organisation's innovative capacity, OCI and TL.

In the historical context of the consulting organisations; these firms have 'led the way in developing thought leadership as a business development strategy' (Alan-Prince, 2014). And as such an innovation and creativity driven climate is key to the firm's success. Leaders within this environment must develop their staffs' competencies and capabilities in this area.

2.3 Employee Creative Self-Efficacy (CSE)

Employee creativity, in the modern business paradigm, is key to driving organisational success.

The concept of 'Creative Self-Efficacy' (CSE) was initially introduced by Bandura (1977) as he researched social-cognitive theory, and the relationship between the individual's self-confidence in their own ability and task execution (Waterwall, Fuller & Budden, 2017). Bandura positively linked both constructs.

Building upon Bandura's CSE findings, Tierney (1997) suggested that without the promotion of an individual's belief in their own ability to innovate, then the probability of them demonstrating creative behaviours are unlikely. Tierney and Farmer (2004) have purported positive linkages between leadership style as a supporting factor in promoting specific employee behaviours; including those associated with the creative process (Oldham & Cummings, 1996). It has been stated that employee 'creativity is a complex phenomenon', and that the linkages between employee creative performance and leadership behaviours are 'complex' and not well defined (Tierney & Farmer, 2004).

Tierney and Farmer (2002) cite that for creative endeavours to be successful, the individual must first believe their ability to execute and by extension this believe creates an internal driving force that motivates the creative practitioner to persevere against the challenges faced in the completion of the creative vison (Bandura, 1997). Choi (2004) supports this argument, validating that the presence of an individua's CSE is linked with innovative behaviours and task execution. The development of the an TCO employee's CSE is a key factor to promoting their participation in creative endeavours and as such driving innovative behaviours.

2.4 Innovative Working Behaviours (IWB)

Organisational expectations with regards to employee innovative working behaviours have greatly changed in the past 25 years. George and Brief (1992) cited that employees are rarely demanded to perform innovative working behaviours. Early literature on IWB was founded on the person-environment fit theory (Caplan, 1983; Edwards & Cooper, 1990); whereby an elevated arousal (e.g. crisis situations) promoted workers to adapt and modify their behaviours to adapt to a changing working context.

Research by Bunce and West (1994) empirically suggested that workers seek out innovation activities, to adapt to heavier workloads. At a high level, there are some contextual merits to Bunce and Wests (1994) findings, however their view is somewhat at odds with modern psychological research into employee behaviours [in modern technology organisations].

Thought leaders such as Pink (2009) would challenge these findings; citing that employees actively seek out opportunities to innovate when given the 'autonomy' and ability to influence their working environment and context. Pink (2009) cites that problem solving and the expression of innovative behaviours are inherent needs/wants in the human psyche.

Pink's view closely correlates with the IWB research by De Jong and Den Hartog (2008), who defined the process of IWB as '*an individual's behaviour that aims to achieve the initiation and intentional introduction (within a work role, group or organization) of new and useful ideas, processes, products or procedures as well as implementation of those ideas'.*

Within the modern business paradigm and through participation within knowledge-based economies; organisational-wide IWB is mandatory just to remain competitive in the market place. Scholars and practitioners jointly agree on the importance of IWB to organisation, as a means to maintain completive advantage (Scott & Bruce, 1994; Janssen, van de Vliert & West, 2004; Akram, Lei & Haider 2016), yet the definitive instruments to measure an organisations IWB remains under developed and still in an evolutionary phase (De Jong & Den Hartog, 2008).

In recent research Akram, Lei and Haider (2016), and Choi et al. (2016) have validated the close correlations between relationship leadership and TL respectively with IWB in technology organisations. Kao et al. (2015) has extended the linkage between TL and IWB in to the services sectors – these findings are aligned with the dominant academic literary opinion.

Conjoining the contextual backgrounds between technology organisation and services organisation – a review their respective relationship with IWB will be discussed later in detail.

2.4.1 Service Innovation

An examination of the innovative context by Kao et al. (2015) and Choi et al. (2016) must be undertaken to understand the differences in the difference contexts IWB within product and services organisations.

Research into the process of 'service innovation' has validated a clear distinction in process, when compared to that of 'product innovation' (Barras, 1986; Damanpour, Walker & Avellaneda, 2009; Gallouj 2002; Barrett et al., 2015).

While academic research has highlighted the challenges that companies face in successfully innovating new physical products (Salomo et al., 2007; Trotter & Vaughan, 2012). Service innovation is far more dynamic and fluid process; which is not dependent on R&D, lead-times nor material investment, but is wholly dependent on employee contribution and participation in the innovation process.

Den Hertog (2000) identified the four dimensions of 'service innovation' against which employee innovation is required, including; service conceptualisation, client interface, service delivery development and supporting technology. Service innovation can be viewed academically as the enhanced delivery of 'a process, a sequence of operations, a formula, a protocol, a problem solution' (Gallouj & Savona, 2009), in which the employee's innovative capacity is a key contributor to the innovation process.

While 'product innovation' and 'service innovation' are both fully dependent on the employee contribution to the 'innovative process', it can be argued that the process of 'service innovation' requires addition employee considerations such as; a heightened tolerance for ambiguity and rapid environmental changes, and the ability to 'co-create' services with external participants [customers] to the TCO's innovation process.

2.5 Transformational Leadership & Creative Self-Efficacy

Kao et al. (2015), identified close relationships with employee CSE and TL in a services context. Research into TL by Jung, Chow and Wu (2003), highlighted the importance of leadership as an enabler in influencing employees' creative behaviours and performance in the workplace, a view that was supported by earlier research (Mumford & Gustafson, 1988; Amabile, 1998; Jung, 2001;).

TL behaviours provide followers with intellectual stimulation (Bass & Avolio, 1997), this is can be in the form of encouraging followers to think innovatively to problem solving and to adopt

a generative / exploratory thinking processes (Sosik et al., 1997). Jung, Chow and Wu (2003) highlight the complexity of influence between TL and creativity, citing that direct and indirect TL influences are possible on follower creativity.

Tierney, Farmer and Graen (1999) highlight that the TL leader directly caters to the follower intrinsic motivational needs and higher needs which can be sources of creative drive - the higher needs would include those identified in the upper tiers of Maslow's Hierarchy of Needs (Lester, 2013). Indirect influence on creativity is grounded within the culture of an organisation, it can be purported that TL leadership team create this culture.

TL supports environments where the leadership encourages employees to innovate, to try out new approaches without worrying about being punished when not successful (Amabile et al., 1996). While past qualitative research has pointed towards the positive influence of TL, supporting empirical research has also validated that TL has positively influenced overall performance of R&D project teams in large R&D organizations (Keller, 1992).

TL leaders leverage their charismatic leadership attributes as a source of referent power over their followers (French & Raven, 1959; Yukl, 2001). This power can influence follower behaviours to be compliant and open to direction from the leader. Using referent power as a tool for gaining commitment – TL leaders can drive follower empowerment by showing high expectations / confidence in followers' capabilities. This supports transformational leaders to develop followers' commitment to the innovation process and change the current organisational paradigm. The leaders show of confidence in followers also acts as an agent for self-motivation for followers, to push their creative skills beyond current application levels (Pink, 2009). Drazin, Glynn and Kazanjian (1999) cite that employee 'sense-making' is supported by TL behaviours, as employees are empowered to interpret environmental cues as creative motivational drivers against which they act.

Research support the finding that there is a relationship between TL behaviours and increased employee CSE (Redmond, Mumford & Teach, 1993; Tierney & Farmer, 2002); this view has been widely excepted in the extant literature.

2.6 Transformational Leadership & Organisational Climate for Innovation

Hu et al. (2013) and Jung (2001) affirm the role of managers as being key to developing, transforming, and institutionalizing organizational culture and climate. Mumford and

Gustafson (1988) have highlight the criticality for supportive organizational climates for innovation:

> *"Even when individuals have developed the capacity for innovation, their willingness to undertake productive efforts may be conditioned by beliefs concerning the consequences of such actions in a given environment."*

The Mumford et al. (2002) study indicates that the organizational climate and culture represents a collective social construction within the organisation, over which the organisational leadership has substantial control and influence. Referring to the TL defining behaviour of 'intellectual stimulation', Scott and Bruce's (1994) research indicate that a TL approach to innovative problem analysis – whereby the leadership challenges current assumptions, reframes problems and pushes staff to approach old problems with new approaches. By and organisation enacting such TL behaviours and activities, the leadership team is promoting an organizational culture that challenges the old paradigms, values creative thought process, encourages innovative approaches and work practices.

Hurley and Hult (1998) argue that an innovative culture reflects the extent to which a firm is favourable to developing innovation or whether it resists innovation. While that definition holds merit, it overlooks the ability for an organisation to change; such as TL in removing organisational barriers to the adoption of new approaches and innovations (Jung, Chow & Wu, 2003). By completing such activities TL can be identified as a key contributing factor to promote and support an organisational climate for innovation.

2.7 Organisational Climate for Innovation & Creative Self-Efficacy

Patterson et al. (2005) defined the organisation's climate as an employees' psychological interpretation of the organization. An employee's understanding of the an organisations climate is driven by their own individual correlation of the working environment and perceived leader expectations. Under the correct setting of OCI, the self-definition of leader expectations (with regards to innovation) by individuals can act as a motivating drive for the individuals to try and develop their skills and indirectly their CSE.

It can be purported that the individual's understanding of the workplace climate is closely interrelated with the research by Drazin, Glynn and Kazanjian (1999), whereby the individuals 'sense-making' interpretation of environmental 'cues' can lead to self-directed creative endeavours.

Hsu, Sheng-Tsung and Hsueh-Liang (2011) research confirmed that, within a service delivery context, the process of innovation is perceived an is a 'risky endeavour' (Yuan & Woodman, 2010). The perceived risk relates to the risk of failure and the a phycological loss of standing within the group, and the risk of failure in the face of high level of ambiguity as the individual sets out on the creative endeavour. The creation of a supportive OCI is therefore a key component to develop and promote employee CSE. Tierney and Farmer (2011) cite that employees who perceived positive OCI, tend to focus on the information and that enhances their self-belief in their ability to innovation (a self-perpetuating social persuasion phenonium), and by doing so increase their CSE. Where CSE is defined as an individual's self-confidence in their own ability to complete a creative task (Waterwall, Fuller & Budden, 2017).

2.8 Organisational Climate for Innovation & Innovative Work behaviours

Bruce and Scott (1994) investigated the determinants of innovative behaviours, a key finding related to the challenge that managerial team experience, whereby *'managing [employee] attention is difficult because individuals gradually adapt to their environments in such a way that their awareness of need deteriorates'* (Van de Ven, 1986). Van de Ven expanded on this statement citing that only crisis situations can re-engage the staff.

Bruce and Scott (1994) later identified leadership style as a key contributor to creating an environment that engaged employees and maintained a drive for innovation. Anderson and West (1998) subsequently validated that that the innovative climate, within working groups and teams, is positively linked to team creativity and innovation.

Jung, Chow and Wu (2003) validated the positive association between TL behaviours, OCI and IWB. Building upon this observed positive interrelationship and expanding this to include Tierney and Farmer's (2011) positive correlation between CSE and OCI, it can be purported that the creation of a supportive OCI is positively linked with the IWB levels within an organisation.

2.9 Creative Self-Efficacy & Innovative Working Behaviours

The dominant view the literature is that the CSE does support creativity and IWB in the many environmental contexts (Tierney and Farmer, 2002;2004). However past research has measured moderate relationships and but failed to deliver a definitive empirical validation of the relationship between an individual's CSE and work creativity generation [in the enterprise environment] (Redmond, Mumford, & Teach, 1993; Gist. 1989). Ng and Feldman (2012), cite

that the research design methodology could be responsible for the variance in quantitative analysis results for CSE.

Recent research by Kao et al. (2015) found a positive relationship between CSE in context of 'service innovation' for unskilled workers and their creative behaviours. This research finding will be reviewed in the context of knowledge-intensive services in the modern business environment. The literature would suggest that that the findings of Kao can be extended to the knowledge-intensive services sector.

2.10 Transformational Leadership & Innovative Working Behaviours

Innovation is intrinsically about identifying and using opportunities to create new products, services, or work practices (Van de Ven, 1986). Kanters (1988) and Bruce and Scot (1994) defined a multistage innovation process: 1) problem recognition, 2) idea generation, 3) building support for ideas, and 4) idea implementation.

Desirables innovative behaviours in the context of TCO employees are those that can be self-directed throughout the process and that share innovations for the benefit of the organisation. The process of innovation is mostly influenced by individual motivation, personality and initial knowledge, and organizational supportive mechanisms (Barron & Harrington, 1981).

Choi et al. (2016) cites that the individual's characteristics including innovative behaviour are strongly influenced by leader's behaviour, and as such are directly influenced by TL. Expanding upon this observation, research has validated that TL cultivates the supportive actors of innovative behaviour, including; vision, self-efficacy, autonomy, encouragement and challenge (Scott and Bruce, 1994).

To build an innovation-based organization, leaders must develop internal problem-solving techniques, employee motivational indicators and performance evaluation systems (De Groot, Kiker & Cross, 2000). The dominant view of the research of TL, indicates that it drives all the attributes that De Groot, Kiker and Cross cite and enables organisations through a motivated and self-learning staff, all of which are key factors in knowledge-intensive services organisational success.

In their research, Sattayaraksa et al. (2016) cite organizational learning and a supporting innovation culture as key factors to mediate the relationships between (CEO) transformational

leadership and the new product development process. This observation is aligned with the common research indicator that TL supports innovation.

Leadership styles have been proven to have a direct influence on collaboration across organisational functions. Academics argue that the diffusion of knowledge across and organisation and the sharing framework is a prerequisite for innovation. A view which was supported by Liebowitz (2002), who stated that a firm's ability to transform and exploit knowledge determines its level of organizational innovation, such as faster problem-solving and enhanced rapid reaction to change.

Multiple studies have found that TL creates a collaborative organisational environment and provides sufficient resources to perform tasks more efficiently (e.g. Lin, 2006), this view was supported by MacNeil's (2004) research into TL's and organizational knowledge sharing climates.

Barling & Kelloway's (1999) research specifically identified TL as a "potential predictor" of knowledge sharing across organizations. Politis's (2002) research identified TL as an accelerator for organisational participative activities or decision-making practices, which in turn facilitates knowledge sharing among a leader and follower groups. These observations, when combined with the findings of Liebowitz's (2002), on exploitation of knowledge for the purposes of innovation, indicate that TL behaviours promote the cross-organisational behaviours that support IWB.

2.11 Conclusion

The dominant opinion within the extant academic literature supports the view that TL behaviours are positively associated with IWB with organisations.

The individual subconstructs of TL (Bass & Avolio, 1994) are positively correlated with the perceived organisation-wide OCI, and with CSE at an employee level.

By creating an environment that free from socio-psychological barriers associated with failures in creative endeavours by participants (Hsu, Sheng-Tsung & Hsueh-Liang, 2011; Avey, Luthans & Youseff, 2010); as employees feel heightened levels of CSE, in turn organisations experience higher levels of employee IWB and creative endeavours.

3.0 Research Question

The dominant view within the extant academic literature supports TL as being positively associated with IWB within organisations (Kao et al., 2015; Choi et al., 2016; Jung, Chow & Wu, 2003).

This view has been researched in depth and empirically validated in both laboratory and field tests in primarily product-centric organisations context (Barron & Harrington, 1981; Mumford & Gustafson, 1988; Choi et al. 2016) and subsequently in a non-skilled services organisational context (Kao et al., 2015).

This following research and model addresses this gap by researching the relationships between TL, OCI, CSE and IWB, in a 'knowledge-intensive services organisations' [TCOs].

While the extant literature has validated positive relationship between TL and IWB in the stated organisational contexts, there is a gap in the research relating to the influence of TL within the knowledge-intensive services organisations. The 'consulting sector' omission from academic literature has been observed:

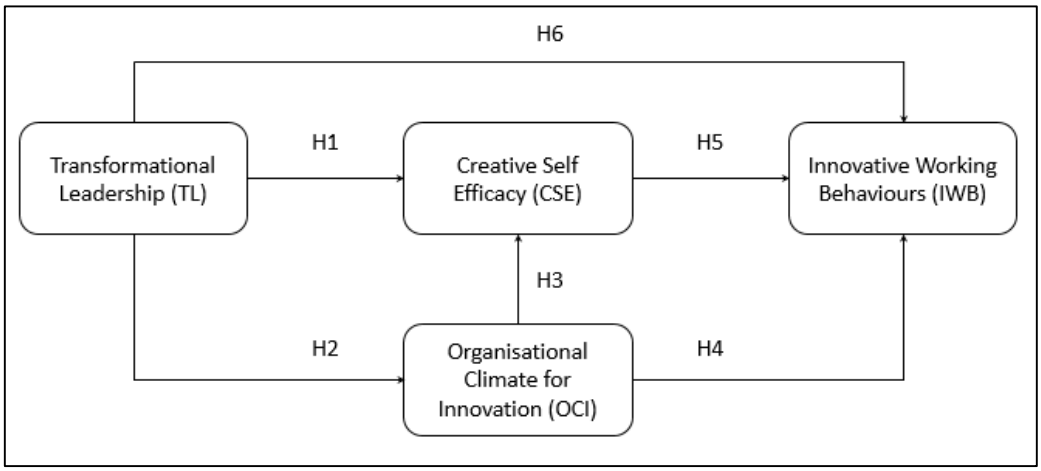
> *"The management consulting industry has received little academic attention due to a variety of reasons… the lack of extensive studies on the consulting industry can be attributed to the nature of services they offer—services that are hard to study, measure, and quantify."* (Srinivasan,2014)

The following model will empirically measure the relational associations between TL, IWB, CSE and OCI, focusing on a TCO employee sample population. By gaining this understanding of the impact of TL in knowledge-intensive service organisation, managerial teams can review their leadership behaviours and frameworks with the objective of promoting positive organisational outcomes and employee behaviours.

3.1 Hypothesis Diagram

The proposed model builds upon the academic research, of Jung, Chow and Wu (2003), Choi el al. (2016) and Kao et al. (2015), measuring the correlations between the following constructs:

Figure 1: Research Hypotheses Diagram



3.2 Hypothesis 1: Transformational Leadership & Creative Self-Efficacy

By recognising the importance of innovation and employee creativity within the context of the knowledge-intensive service organisations; it is key that [TCO] managerial teams understand the leadership behaviours that support and promote the creative process and staff behaviour.

As such the first hypothesis, will review the causal relationship between TL and employee creative self-efficacy (CSE) within knowledge services organisations (in this case TCOs).

H1 –	*TL is positively associated with employee CSE within the context of a knowledge-intensive services organisation*

The literature would suggest that a positive causal relationship between TL and CSE. Jung, Chow and Wu (2003) having positively related TL as an enabler in influencing employees' creative behaviours; a view that was supported by Yukl (2002) citing that leaders are a direct source of influence on employees' work behaviours (IWB being included in this).

Discussion/Analysis Sub-Objective:

H1a –	*The effect of TL on employee CSE is not diluted in a distributed team environment.*

Previous TL and employee creativity studies have focused on groups within traditional team structures (i.e. collocated), where as consultants are part of distributed team structures. Existing literature by Whitford and Moss (2009) suggests that TL influence is not diluted by a distributed team structure through the use of technology.

3.3 Hypothesis 2: Transformational Leadership & Org. Climate for Innovation

The second hypothesis reviews inter-relationship of TL within an TCO with the employee's perceived organisational climate for innovation. Research findings by Mumford and Gustafson (1988) and Kao et al. (2015) would suggest that the higher levels of TL will be positively influence the TCO employee's perception of OCI.

H2 –	*TL is positively associated with the perceived OCI within the context of a knowledge-intensive services organisation*

3.4 Hypothesis 3: Org. Climate for Innovation & Creative Self-Efficacy

The third hypothesis, will assess the level of relational association between the employees perceived OCI and their CSE. The dominant view within the literature is that a positive OCI, removes the employee's perceived psychological 'risk' in all creative endeavours (Yuan & Woodman, 2010), which in turn promotes their own belief in their creative capacity (CSE).

H3 –	*The perceived OCI in an organisation is positively associated with employee CSE, within the context of a knowledge-intensive services organisation*

3.5 Hypothesis 4: Org. Climate for Innovation & Innovative Working Behaviours

Hypothesis 4 will address a gap in the literature by reviewing the influencing role of the OCI on employee IWB, within knowledge-intensive services organisations.

The working environmental context for consultancy employees is different to tradition firms, due to their distributed working situation. TCO consultants are generally not collocated with peers, but are onsite at TCO customer locations. The following paper empirically measures the associative relationship between OCI and IWB.

H4 –	*The perceived OCI in an organisation is positively associated with employee IWB within the context of a knowledge-intensive services organisation*

3.6 Hypothesis 5: Creative Self-Efficacy & Innovative Working Behaviours

Existing literature (Tierney & Farmer, 1997, 2002; Gong, Huang & Farh, 2009), and particularly for CSE and service innovation (Kao et al., 2015) has positively linked both constructs but has focused on non-skilled sectors; this paper will extend the academic understanding into the knowledge services sector.

H5 -	*The measure of an employee's CSE can be positively correlated with employee's IWB in a knowledge-intensive services organisation*

3.7 Hypothesis 6: Transformational Leadership & Innovative Working Behaviours

Previous research in non-knowledge-intensive organisations has positively correlated TL and IWB. Hypothesis 6 will assess the associative relationship between TL and employee IWBs, within the context of a knowledge services organisation.

H6 -	*Transformational leadership has a positively associated relationship with employee innovative working behaviours in knowledge-intensive services organisation*

Discussion/Analysis Sub-Objective:

This sub-hypothesis will analyse each of the subconstructs if transformational leadership against employee IWB. This will assess the TL subconstructs:

- Idealised Behaviours / Attribution
- Intellectual Stimulation
- Inspirational Motivation
- Individual Consideration

H6a –	*The subconstructs of TL (IM, IA, IB, IS and IC) are equally weighted in terms of their positive association with employee IWB.*

4.0 Methods

4. 1 Research Philosophy

A research methodology is an implementation of the strategic principles of the epistemological and ontological approaches to research; these translate into guidelines that dictate how research will be completed (Sarantakos, 2005).

The qualitative research approach is based upon the constructionist ontology and interpretivist epistemology. Merriman (1998) defined that the approach is based on meaning being found within the experiences of participants. That participants experiential meaning is then mediated and captured through the researchers own perceptions.

The positivist research paradigm is aligned to quantitative research and an empirical measurement methodology (Tuli, 2011). In this approach to research; empirical measurement and quantitative analysis of research data is undertaken to investigate hypothesis and associative inter-relations between variables. The positivist approach to research is driven by measurable experimentation and the collection of numerical evidence to validate findings empirically (Sarantakos, 2005). The positivist researcher remains remote and detected from subjects; measuring and observing, an approach that is aligned to the '*realist/objectivist ontology and empiricist epistemology'* (Tuli, 2011).

This research paper takes a *positivist* approach, by quantitatively analysing the associative relationships between TL, CSE, OCI and IWB. In cases where the empirical measurements are not aligned with the expected literary predictions, or unexpected phenomenon are identified with the expected results; then a qualitative *interpretivist* approach will be used to engage with research subjects and to construct an understanding view as to causal factors in the unexpected results.

4.2 Research Context

Technology consulting services are characterised by high levels of interaction and engagement between frontline TCO employees and their customers - joint participation by both parties in the innovation process is critical to service innovation (Liao & Chuang, 2007).

This study uses cross-sectional research design and to empirically measure the inter-relationships between TL, OCI, employee CSE and IWB in the context of knowledge-intensive services organisations (TCOs). An online questionnaire was used to capture the subject responses, for later analysis by the statistical software tool SPSS.

TCO employees are key individual contributors to the innovative process, the research design decision was taken to use 'self-rated' measurement instruments where possible for TL, OCI, CSE and IWB. This decision overlooks leader rated instruments. This decision was taken as TCO leaders are less-frequently co-located with their direct reports and may not have a detailed understanding of the TCO employee input into the localised service innovation process on customer sites.

4.3 Research Sample, Distribution Method and Characteristics

The study focused on TCO employees based within the Irish market (including participants from all grades within TCO organisations).

Leveraging the research results by Shih and Fan (2008) on questionnaires and surveys; they cited that the response rates are estimated to be 45% for web-based and 34% for mail-based surveys; a large on-line questionnaire distribution approach to taken to assure a statistically significant result was achieved in this study.

An online questionnaire yielded 199 responses within a 2-week active period. Of the 199 responses, 159 (79.9% of responses) were accepted as valid responses meeting the research sample criteria (i.e. TCO employees and whose jobs are based within the Irish market).

The distribution of the questionnaire took a two-fold approach: 1) a snowball distribution approach was taken to circulate the questionnaire to senior managers within recognised technology consulting organisations (with the further request that the questionnaire be circulated throughout the Irish organisation at all grades), and 2) the questionnaire was also distributed directly to TCO employees within consulting profession networks via direct emails.

4.4 Research Questionnaire

In the case of this study, the use of an online questionnaire was selected because of the working environment of technology consultancy employees; who are distributed across customer sites and geographical locations. The use of an online questionnaire allowed participants to respond any time (within the collection period) and minimised organisational disruption caused by the data collection process.

Questionnaires allow researchers to collect large sample data sizes, which reduces the likelihood of distortion in the response data (Saunders, Lewis and Thornhill, 2009). The questionnaire was hosted in 'Google Forms', and the data collected in 'Google Sheets' for later

statistical analysis. As the target subjects for the research (TCO employees) are 'computer literate', there was no risk of excluding participants through using an online questionnaire.

Previous research by Tomaskovic-Devey, Leiter and Thompson (1994) has highlighted the risk of data distortion caused by low response rates in questionnaires. Low responses rates increase the probability of statistical biases in the collected datasets. Rogelberg and Luong (1998) cited that where low or non-response bias occurs, incorrect analysis results can be drawn by research. To mitigate the risks of low responses and data distortion, a snowball distribution approach was carried out across 9 medium-to-large TCOs [targeting a population of ~1100 possible participants], and approximately 600 emails were sent directly to recognised technology consultants, requesting their un-rewarded participation.

Research, by Crawford, Couper and Lamias (2001) on questionnaires and their delivery channels; identified that during the data collection process, there are higher levels of partial response for web delivered surveys. To mitigate this risk, and maximise the richness of the data collected; a full a review of the mandatory questions per measurement scale (demographics, TL, OCI, CSE and IWB) was completed. Any questions identified as being required to support the data analysis phase, were flagged as mandatory during the questionnaire population process - thus assuring that all completed responses brought value and were usable in the research analysis.

4.4.1 Questionnaire Design Principles

> *'Gathering quality data is dependent upon the quality of the questions that you have constructed'* (Elias, 2015)

In the design of the research model, multiple academic research papers across TL, OCI, CSE and IWB were used to 'allow cross-case analysis to be used for richer theory building' (Perry, 1998). The research question's model leverages aspects of the research models used by Choi et al. (2016) and Kao et al. (2015), which have been accepted as robust measurement models.

The scales of measurement for TL, OCI, CSE and IWB leveraged pre-existing academic literary scales, that have been statically validated as reliable. To assure reliability of the measurements, only scales with a minimum Cronbach α of >0.7 will be considered (DeVellis, 2003), however where possible scales with Cronbach α of >0.9 were selected.

4.4.1.1 Measuring: Transformational Leadership (TL)

Bass and Avolio's (1995) Multifactor Leadership Questionnaire (MLQ) was be used to measure TL against a 20-item scale, this methodology is aligned with the research approaches by Jung, Chow and Wu (2003), Kao et al. (2015) and Choi et al. (2016) studies (albeit Choi used a 65-item scale). The MLQ has a Cronbach α rating of 0.92 (Bass & Avolio, 1995), and has been widely used in TL measurement research for the past 20 years.

The Multifactor Leadership Questionnaire (x5) Short version in its standard form contains 45 questions, relating to TL and non-TL subconstructs. For this study's objectives to measure the associative relationship between TL and other dependable variables; only the questions relating to the five subconstruct of TL were used in the questionnaire, including; Idealised Behaviour (IB), Idealised Attribution (IA), Intellectual Stimulation (IS), Inspirational Motivation (IM), Individual Consideration (IC).

Each question response is in the format of a five-point scale ranging from 0 ('Not at All') to 4 ('Frequently, if not Always'). The MLQ has been extensively used in TL research studies and is considered as a robust and trusted measure of TL (Awamleh & Gardner, 1999).

Bass and Avolio's, themselves have stated that the MLQ is not designed to encourage the labelling of a leader as Transformational, but it is intended to support the identification of a leader or group as demonstrating TL behaviours (or not). They cite the value of the MLQ as supporting the individuals or groups as "more transformational than the norm".

Bass (1985) has also highlighted that the identification of TL is more prominent / identifiable in 'crisis or growth' situations, as opposed to 'steady state' environments. He cites that transformative leaders need to work harder in these stable environments to be effective, thus in 'steady state' business environments, the MLQ can return lower than merited TL scores.

4.4.1.2 Measuring: Creative Self-Efficacy (CSE)

Leveraging Tierney & Farmer (2002) research into employee creativity and CSE, this study used the three-item Creative Self-Efficacy scale to assess this measure.

Participants are presented with items such as 'I have confidence in my ability to solve problems creatively' and all items are rated by respondents on a seven-point Likert-type scale from 0 ('Very Strongly Disagree') to 6 ('Very Strongly Agree').

The CSE instrument has a Cronbach α rating of 0.76 (Tierney & Farmer, 2004), which above the recommended minimal limit of 0.7 (DeVellis, 2003).

4.4.1.3 Measuring: Organisational Climate for Innovation (OCI)

The instrument to measure the OCI will leverage the Scott & Bruce's (1994) – 'Factor Structure for the Climate of Innovation Measure'. This has been extensively used across a range of research surveying diverse organizational types and offers high reliability and unidimensional measurement of OCI.

The measure is a 22-item instrument that captures 4 subconstructs including; 1) Organisation Support for Creativity (6 items), 2) Organisational Tolerance for Difference (6 items), 3) Organisational Resource Availability for Innovation (6 items) and 4) Organisational Reward for Innovation (4 items). All items are rated by respondents on a five-point Likert-type scale from 0 ('Strongly Disagree') to 4 ('Strongly Agree'). Bruce and Scott split the reliability measure for the OCI instrument into 2 subscales:

- **Subscale I:** *'Support for Innovation'* (comprised of subconstructs: 1,2 and 3 (18 items)). The Cronbach's α was rated as 0.92 (Bruce & Scott, 1994).
- **Subscale II:** *'Reward for Innovation'* (comprised of subconstructs: 4 only (4 items)). The Cronbach's α for this component was rated as 0.77 (Bruce & Scott, 1994).

4.4.1.4 Measuring: Innovative Work behaviours (IWB)

The measurement of TCO employee Innovative Working Behaviours (IWB) behaviour will leverage the same measurement instrument that has been used extensively by previous research by Choi et al. (2016), Janssen (2000), Kanter (1988) and Scott & Bruce (1994). Cronbach's α for this questionnaire has been rated as 0.95 (Janssen, 2000).

The questionnaire is in the form of a nine-item scale covering the three dimensions of individual innovative behaviour by process stage, including 1) "Creating new ideas for difficult issues" (Idea Generation), 2) "Mobilizing support for innovative ideas" (Idea Promotion), and 3) "Transforming innovative ideas into useful applications" (Idea Realization). The responses are measured on a five-point Likert scale; 'Not at All' (0) to 'Frequently, if not Always' (4).

In the design of the questionnaire, the decision was taken to use self-reports rather than observer-scores. Particularly in the case of measuring IWB, it is more accurate to use a self-reporting questionnaire as the employees own cognitive interpretation of their IWB will be more accurate and factor in more contextual subtleties than the same reporting done by the same employee's supervisor; this approach is supported by Janssen (2000).

4.5 Pilot Study

Prior to launching the questionnaire, a pilot was run in partnership with a Dublin-based TCO.

Within the pilot, 18 participants covering all organisational grades; from graduate to CEO participated in the study. This group size was chosen in line with the recommendation by Fink (2003), who a minimum pilot number of ten participants to attain meaningful feedback.

The pilot confirmed the scale questions were clear and understandable, with no amendments being required. Based on participant feedback, the ordering of scales on the questionnaire was changed; to ensure the shortest scales were completed first, thus giving participants a heightened assurance of progress. Research indicates that longer questionnaires result in lower response rates than shorter questionnaires (Deutskens et al., 2004). As the scales used are standalone measures this did not compromise the data collected.

Note: The pilot participants' names were collected to support the pilot feedback process. The full research online questionnaire was fully anonymous.

4.5.1 Naming of the Questionnaire

The original title of the questionnaire for the pilot was *"Investigating the Relationship between Transformation Leadership and Innovative Staff Behaviours, in Irish Technology Consulting Organisations".* It was noted that during the pilot, several participants requested a definition for 'Transformational Leadership'. As the online questionnaire was to be remotely self-administered; the decision was taking to change the title and make it leadership style agnostic. This was achieved by removing the term 'Transformational' in the questionnaire title.

This decision was made to avoid the situations of participants create 'self-bias' in their responses (Donaldson & Grant-Vallone, 2002); caused by them independently researching 'transformational leadership' prior to completing the questionnaire This could inadvertently bias the supplied answers. The questionnaire title was set as:

> *"Investigating the Relationship between Leadership Styles and Innovative Staff Behaviours, in Irish Technology Consulting Organisations"*

4.5.2 Pilot Study: Supporting 'Examine and Explain' Research Approach

This research paper takes a quantitative approach to research previously validated associated relationships between TL, CSE, OCI and IWB in the context of TCOs [*examine*].

In cases where previously validated relationships (from past research papers) are not identified as being consistent with the findings of this study; then a qualitative approach will be taken to explain the research deviations [*explain*].

To support this approach, the data collected from the 20 pilot participants will be used to identify subjects who's results correlate closely to any noted results deviations; these subjects were then approached to anonymously participate in unstructured interviews on identified relational deviations and reasons why they perceive those deviations to exist.

4.4 Ethical Considerations

A full ethical review of the research approach and handling of data was completed, prior to starting the research phase of the study. All aspects and potential concern for research participants was reviewed in detail, this approach aligns with Johnson's (2014) observations on the need to identify and mitigate all ethical concerns when conducting academic research.

Before stating the pilot research, it was validated that the medium for transmission of the online questionnaire responses was secure and encrypted (using https).

With regards to the pilot study; permission was granted to use the questionnaires on 18 participants within the TCO organisation by the organisation's CEO. On completion of the pilot, the data was collected (including names) and immediately stored on an encrypted and password protected storage device. The data and results were not shared with any other party. At the start of the pilot process, all participants were advised of the storage and data collection methodology; it was explained to what the data would be used for and how the pilot data would be destroyed on completion of the study analysis.

For the full online questionnaire, all participants were advised that the survey was anonymous and advised of the storage and data collection methodology. It was confirmed to what the data would be used for and how it would not be shared with any other party outside the researcher.

Before starting the questionnaires, all participants were advised that that they could opt out at any stage (without submitting data) and their participation was unrewarded, this approach aligns with recommendations by Tyldum (2012). There were no other ethical considerations for the study.

4.5 Data Analysis

The collected data was analysed using the IBM statistical software package SPSS (version 23).

SPSS will be used to generated the descriptive statistics analysis for each dataset per measurement scale and used to complete the following analysis tests:

4.5.1 Scale Reliability Analysis

> *'In the widest definition, reliability can be described as clearness degree of measurement results from random errors.'* (İnal et al., 2017)

The collected data will be tested for reliability, for each of the scales of measurement, including: Transformational Leadership (TL), Creative Self-Efficacy (CSE), Organisational Climate for Innovation (OCI) and innovative Working Behaviours (IWB).

The measurement of reliability is calculated using the Cronbach α value (Caldwell, 2012). Gliem and Gliem (2003) have stated that the Cronbach α is a a reliable determinant of internal consistency in datasets based upon multi-item questionnaires. To assure reliability of the data against the minimum acceptable Cronbach α value was set at >0.7 (DeVellis, 2003).

Each construct's (TL, CSE, OCI and IWB) Cronbach α value was also cross-compared with the cited scale's Cronbach α, from the literature (see sections 4.4.1.1 - 4.4.1.4), to assure that the values aligned with the reported scale's reliability.

4.5.2 Regression Model Analysis

In order, to gain a predictive understanding of the associative relationships between the variables; Innovative Working Behaviours (IWB), Transformational Leadership (TL), employee Creative Self-Efficacy (CSE) and the Organisational Climate for Innovation (OCI) – a linear regression model will be derived.

The regression analysis will be used to give and understanding of the changes in the value of the dependent variable (Innovative Working Behaviours (IWB)) as the value of independent variables (TL, CSE, OCI) are changed, while all other things remain equal.

4.5.3 Correlation Analysis

The purpose of the research question is to validate the associative relationships between the constructs; Transformational Leadership (TL), Creative Self-Efficacy (CSE), Organisational Climate for Innovation (OCI) and innovative Working Behaviours (IWB). And, to understand the strength of inter-relationship between each. The following sections detail the correlational tests that will be done on the scales to measure the strength of relationships between them, as identified in the hypotheses (reference: Section 3.0).

4.5.3.1 Scatterplot Modelling

Scatterplots were generated to graphically represent and validate the linear associations between the variables. The scatterplot slope provides information on the strength of the relationship (Caldwell, 2012). Further tests will be required to measure the strength of relationship as the interpretation of a scatterplot can be subjective.

4.5.3.2 Pearson's Correlational Analysis

Pearson's r correlation test is used to estimate the theoretical reliability coefficient between two variables (Caldwell, 2012). A correlation coefficient (r) measures the strength of a linear associative relationship (between the two variables). The measurement range is from -1 (a perfect negative correlation) to +1 (a perfect positive correlation). Cohen (1992) put forward the following interpretive ranges for examining the relational correlation coefficient (r) value:

Table 1: Cohens Interpretive Ranges for Correlation Coefficient (r).

Pearson r Value	Correlation Strength
• Between -0.3 to +0.3	Weak Relationship
• Between -0.5 to -0.3 • Between +0.3 to +0.5	Moderate Relationship
• Between -0.9 to -0.5 • Between +0.5 to +0.9	Strong Relationship
• Between -1.0 to -0.9 • Between +0.9 to +1.0	Very Strong Relationship

4.6 Research Limitations

The following section identifies the main limitations within this research methodology.

4.7.1 Research Cross-Sectional Design

By the nature of cross-sectional design studies, the inter-dependent variables are measured at a point in time, making it difficult to make a 'definitive causal inference' (Levin, 2006). When investigating the causal relationships between socio-psychological factors such as organisational climate and self-efficacy, a longitudinal approach may yield a more normative result. Cross-sectional research delivers a 'snapshot' in time result, whose analysis may provide differing results with different timelines.

4.7.2 Time and Data

Due to the time constraints, in which this research study had to completed; a cross-sectional research design approach was used.

To allow time to analyse the data and formulate results, the questionnaire was active for a 2-week period only. Within this collection period, 199 questionnaire responses were collected of which 159 respondents were within the target sample population. Given a longer period for the research; a larger sample may have been possible to achieve.

4.7.3 Supporting Academic Literature

While the primary focus of the research is on TL, CSE and OCI and IWB in a 'technology consulting' and 'knowledge-intensive services' context, there is research gap in academic journals focused on these specific contextual subcategories. The limited secondary sources of literature covering 'consulting' and 'knowledge-intensive' professional services directly, has been cited by Srinivasan (2014).

To mitigate the risk of reviewing too small a literature base and to avoid the misinterpretation of research secondary data, the research 'search parameters' were widened to include TL, CSE OCI and IWB in 'technology firms', 'product-centric' firms and 'unskilled-services' organisations. The additional journals were then reviewed in detail to ensure that cross correlations between the researched topics and datasets; and to ensure that they were cross-compatibles with the primary research objectives.

5.0 Results

The questionnaire received 199 responses, of which 159 were within the sample population (i.e. the participant is a current TCO employee and their role is based in Ireland). The following results section focuses in the analysis of the 159 responses from the target sample population.

Table 2: Population Sample – Company Grade Breakdown

Company Grade	Responses	Response %
CEO / Partner	10	6.3%
Director / Head of Function	24	15.1%
Technical Manager / Senior Manager	39	24.5%
Non-Technical Manager / Senior Manager	16	10.1%
Technical Consultant / Senior Consultant	31	19.5%
Non-Technical Consultant / Senior Consultant	16	10.1%
Engineer / Senior Engineer	22	13.8%
Graduate	1	0.6%
Total:	**159**	**100%**

5.1 Reliability Analysis

To assess the reliability for each of the four constructs in this study: Transformational Leadership (TL), Creative Self-Efficacy (CSE), Organisational Climate for Innovation (OCI) and Innovative Working Behaviours (IWB), a Cronbach α analysis was completed on each collected dataset. The summary results of the reliability analysis are in Table 2 through to Table 5. See Appendix 2 for Reliability Analysis SPSS outputs per construct (Tables 33 through to 66).

Result: The TL, OCI and IWB scales exceeded the minimum reliability threshold, as the Cronbach α their scores were >0.7. The Cronbach α score for CSE was below the threshold (0.669), but as the variance was minimal CSE was accepted for inclusion the research study.

5.1.1 TL Scale - Reliability Analysis Results

With respect to the TL construct, the scale consisted of 20 items (5 sub-constructs) and there were for 159/159 valid responses. A Cronbach α score of 0.952 was observed for the TL scale.

Table 3: TL Scale Reliability Analysis - Summary Results Table

Construct	Scale	Cronbach α	Items	N
TL	1) Idealised Attributes	0.829	4	159
	2) Idealised Behaviours	0.739	4	159
	3) Inspirational Motivation	0.849	4	159
	4) Intellectual Stimulation	0.820	4	159
	5) Individual Consideration	0.869	4	159
	TL: Composite (1, 2, 3, 4, 5)	0.952	20	159

5.1.2 CSE Scale - Reliability Analysis Results

With respect to the CSE construct, the scale consisted of 3 items and there were for 159 valid responses. A Cronbach α score of 0.669 was observed for the CSE scale. While the CSE Cronbach α value falls below the >0.7 threshold (recommended by DeVellis, 2003), the CSE reliability score was acceptable for this study.

Table 4:CSE Scale Reliability Analysis - Summary Results Table

Construct	Scale	Cronbach α	Items	N
CSE	Creative Self-Efficacy	0.669	3	159

5.1.2 OCI Scale - Reliability Analysis Results

With respect to the OCI construct, the scale consisted of 22 items (4 sub-constructs) and there were 154/159 valid responses. A Cronbach α score of 0.944 was observed for the OCI scale.

Table 5: OCI Scale Reliability Analysis - Summary Results Table

Construct	Scale	Cronbach α	Items	N
OCI	1) Org. Support for Creativity	0.843	6	157
	2) Org. Tolerance of Difference	0.895	6	158
	3) Org. Resource Availability for Innovation	0.834	6	158
	4) Org. Reward for Innovation	0.813	4	157
	OCI: Composite (1, 2, 3)*	0.930	18	155
	OCI: Composite (1, 2, 3, 4)**	0.944	22	154

** Janssen (2002): the original OCI scale contained subconstructs 1, 2 and 3 only.*
*** Jansen (2002): added subconstruct 4 to the OCI scale, measuring 'reward for innovation'.*

5.1.3 IWB Scale - Reliability Analysis Results

With respect to the IWB construct, the scale consisted of 9 items (3 sub-constructs) and there were 156/159 valid responses. A Cronbach α score of 0.876 was observed for the IWB scale.

Table 6: IWB Scale Reliability Analysis - Summary Results Table

Construct	Scale	Cronbach α	Items	N
IWB	1) Idea Generation	0.719	3	159
	2) Idea Promotion	0.804	3	157
	3) Idea Realisation	0.834	3	157
	IWB: Composite (1, 2, 3)	0.876	9	156

5.2 Descriptive Statistics

This study investigated a total of 159 TCO employees in the Irish market. The following sections detail the descriptive statistics for the sample population by scale.

5.2.1 Transformation Leadership (TL) Descriptive Statistics

A case summary for the self-reported transformational leadership (TL) levels within TCO is shown in Table 7.

Table 7: TL – Descriptive Statistics Case Processing Summary Table

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Transformation Leadership (TL)	159	100.0%	0	0.0%	159	100.0%

5.2.4.1 TL Descriptives Table

The associated descriptive statistics for TL is shown in Table 8.

Table 8: TL – Descriptives Table

Descriptives

			Statistic	Std. Error
Transformation Leadership (TL)	Mean		2.7399	.06060
	95% Confidence Interval for Mean	Lower Bound	2.6202	
		Upper Bound	2.8596	
	5% Trimmed Mean		2.7747	
	Median		2.9000	
	Variance		.584	
	Std. Deviation		.76419	
	Minimum		.50	
	Maximum		4.00	
	Range		3.50	
	Interquartile Range		1.10	
	Skewness		-.701	.192
	Kurtosis		-.160	.383

5.2.2.2 TL Distribution Graphs

The following histogram shows the distributions of reported levels of TL within the samples TCOs. In Figure 2, the x axis represents the composite self-rated TL score within a TCO and the y axis depicting frequency. Figure 3 shows the Q-Q Normality plot for the TL dataset.

Figure 2: TL – Distribution

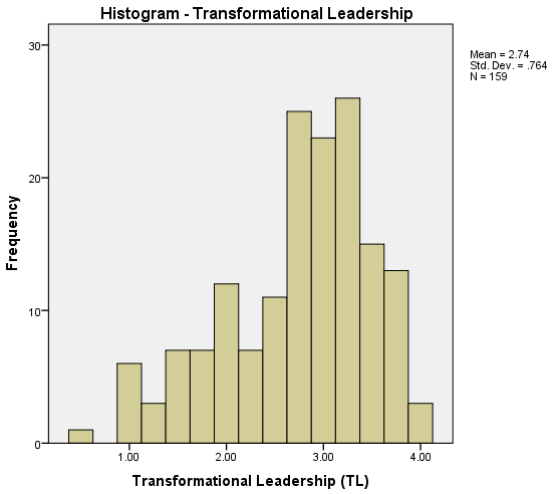
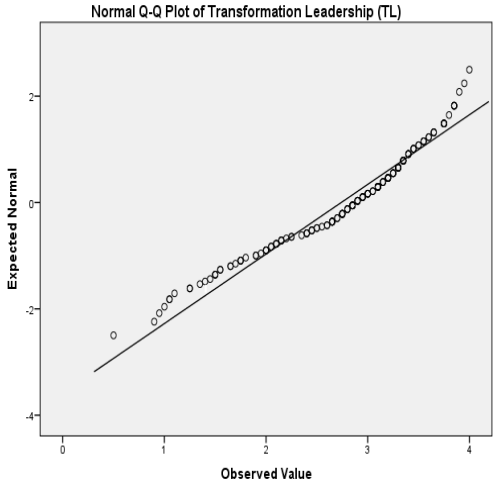


Figure 3: TL - Q-Q Plot



5.2.2.3 TL Normality Tests

The tests results of normality are presented in Table 9.

The results of the Shapiro-Wilk's test of normality indicated that there were significant deviations from normality (WTL = .950, df = 159, p = .000).

Table 9: TL – Test for Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Transformational Leadership (TL)	.115	159	.000	.950	159	.000

a. Lilliefors Significance Correction

5.2.2 Creative Self-Efficacy (CSE) Descriptive Statistics

The case summary for the self-reported levels of employee creative self-efficacy (CSE) is shown in Table 10.

Table 10: CSE – Descriptive Statistics Case Processing Summary Table

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Creative Self-Efficacy (CSE)	159	100.0%	0	0.0%	159	100.0%

5.2.4.1 CSE Descriptives Table

The associated descriptive statistics for CSE is shown in Table 11.

Table 11: CSE – Descriptives Table

Descriptives

			Statistic	Std. Error
Creative Self-Efficacy (CSE)	Mean		4.8910	.04800
	95% Confidence Interval for Mean	Lower Bound	4.7962	
		Upper Bound	4.9858	
	5% Trimmed Mean		4.9044	
	Median		5.0000	
	Variance		.366	
	Std. Deviation		.60529	
	Minimum		3.00	
	Maximum		6.00	
	Range		3.00	
	Interquartile Range		1.00	
	Skewness		-.248	.192
	Kurtosis		.117	.383

5.2.2.2 CSE Distribution Graphs

The histogram shows the distributions of reported levels of CSE Figure 4, the x axis represents the composite self-rated CSE level and the y axis depicting frequency. Figure 5 shows the Q-Q Normality plot for the CSE dataset.

Figure 4: CSE - Distribution

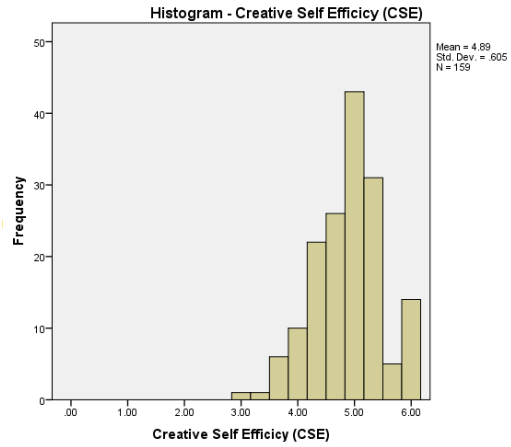
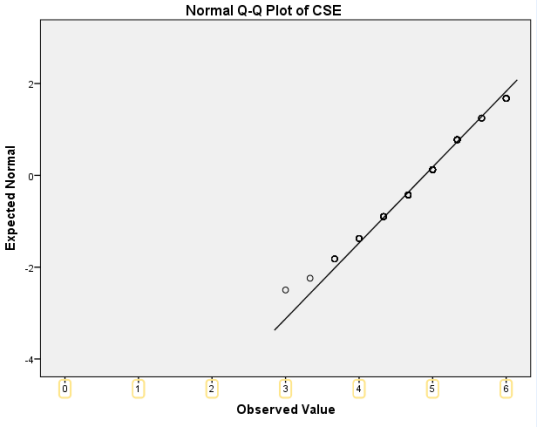


Figure 5: CSE - Q-Q Plot



5.2.2.3 CSE Normality Tests

The tests results of normality are presented in Table 12. The results of the Shapiro-Wilk's test of normality indicated that there were significant deviations from normality (WTL = .955, df = 159, p = .000).

Table 12: CSE – Test for Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Creative Self-Efficacy (CSE)	.156	159	.000	.955	159	.000

a. Lilliefors Significance Correction

5.2.3 Organisational Climate for Innovation (OCI) Descriptive Statistics

The case summary for the self-reported perceived levels of Organisational Climate for Innovation (OCI) is shown in Table 13.

Table 13: OCI – Descriptive Statistics Case Processing Summary Table

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Organisational Climate for Innovation (OCI)	159	100.0%	0	0.0%	159	100.0%

5.2.3.1 OCI Descriptives Table

The associated descriptive statistics for OCI is shown in Table 14.

Table 14: OCI – Descriptives Table

Descriptives

			Statistic	Std. Error
Organisational Climate for Innovation (OCI)	Mean		2.4108	.05918
	95% Confidence Interval for Mean	Lower Bound	2.2939	
		Upper Bound	2.5276	
	5% Trimmed Mean		2.4375	
	Median		2.5455	
	Variance		.557	
	Std. Deviation		.74626	
	Minimum		.18	
	Maximum		3.77	
	Range		3.59	
	Interquartile Range		1.05	
	Skewness		-.518	.192
	Kurtosis		-.281	.383

5.2.3.2 OCI Distribution Graphs

The histogram shows the distributions of reported levels of perceived OCI within the participants TCO in Figure 6, the x axis represents the composite perceived OCI level and the y axis depicting frequency. Figure 7 shows the Q-Q Normality plot for the OCI dataset.

Figure 6: OCI - Distribution

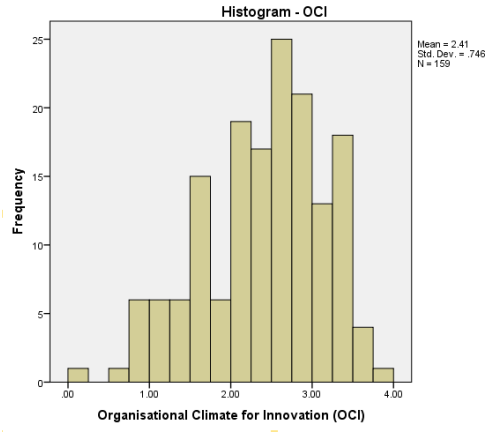
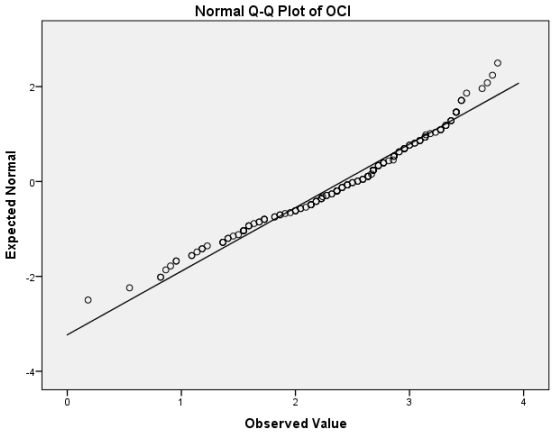


Figure 7: OCI - Q-Q Plot



5.2.3.3 OCI Normality Tests

The tests results of normality are presented in Table 15. The results of the Shapiro-Wilk's test of normality indicated that there were significant deviations from normality (WTL = .971, df = 159, p = .002).

Table 15: OCI – Test for Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Organisational Climate for Innovation (OCI)	.090	159	.003	.971	159	.002

a. Lilliefors Significance Correction

5.2.4 Innovative Working Behaviours (IWB) Descriptive Statistics

The case summary for the self-reported perceived levels of self-reported employee Innovative Working Behaviours (IWB) is shown in Table 16.

Table 16: IWB – Descriptive Statistics Case Processing Summary Table

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Innovative Working Behaviours (IWB)	159	100.0%	0	0.0%	159	100.0%

5.2.4.1 IWB Descriptives Table

The associated descriptive statistics for IWB is shown in Table 17.

Table 17: IWB – Descriptives Table

Descriptives

			Statistic	Std. Error
Innovative Working Behaviours (IWB)	Mean		2.5815	.05124
	95% Confidence Interval for Mean	Lower Bound	2.4803	
		Upper Bound	2.6827	
	5% Trimmed Mean		2.5830	
	Median		2.5556	
	Variance		.417	
	Std. Deviation		.64609	
	Minimum		.67	
	Maximum		4.00	
	Range		3.33	
	Interquartile Range		1.00	
	Skewness		-.069	.192
	Kurtosis		-.095	.383

5.2.4.2 IWB Distribution Graphs

The histogram shows the distributions of self-reported levels of employee IWB in Figure 8, the x axis represents the composite IWB score and the y axis depicting frequency. Figure 9 shows the Q-Q Normality plot for the IWB dataset.

Figure 8: IWB - Distribution

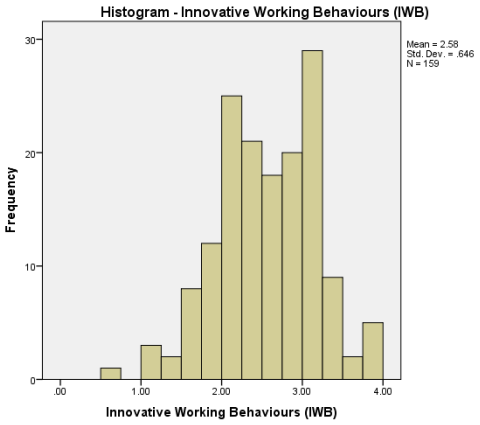
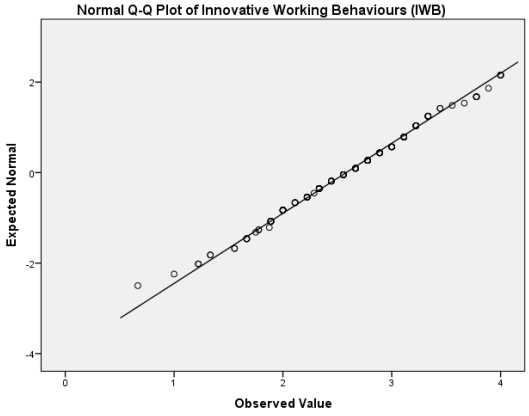


Figure 9: IWB - Q-Q Plot



5.2.4.3 IWB Normality Tests

The tests results for normality are presented in Table 18. The results of the Shapiro-Wilk's test of normality indicated that there were not significant deviations from normality (WTL = .990, df = 159, p = .345).

Table 18: IWB – Test for Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Innovative Working Behaviours (IWB)	.055	159	.200*	.990	159	.345

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

5.3 Linear Regression Analysis

A multiple linear regression was derived to predict employee Innovative Working Behaviours (IWB) levels based on the independent variables; Transformational Leadership (TL), employee Creative Self-Efficacy (CSE) and Organisational Climate for Innovation (OCI). A significant regression equation was found ($F(3,155) = 17.526$, $p<.000$), with an R^2 of .253.

Participants' predicted that IWB was equal to -0.168 + 0.66 (TL) + 0.057 (OCI) + 0.497 (CSE) where Transformational Leadership is coded or measured as a ratio scale (0 to 4), Organisational Climate for Innovation is coded or measured as a ratio scale (0 to 4) and Creative Self-Efficacy is measured as a ratio scale (0 to 6). Employee innovative working behaviours (IWB) increases by 0.497 IWB units, for each CSE unit scale increase. Only CSE was a significant predictor of IWB. The full results of the multiple linear regression are presented in Tables 19 through to Table 23.

Result: The regression equation is: **IWB = -0.168 + 0.66 (TL) + 0.057 (OCI) + 0.497 (CSE)**

5.3.2 Regression Modelling Calculations

The following tables detail the multiple linear regression results.

Table 19: Regression Analysis - Variables Included

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	TL[b]	.	Enter
2	CSE, OCI[b]	.	Enter

a. Dependent Variable: IWB

b. All requested variables entered.

Table 20: Regression Analysis - Model Summary Table

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.185[a]	.034	.028	.63694
2	.503[b]	.253	.239	.56368

a. Predictors: (Constant), TL

b. Predictors: (Constant), TL, CSE, OCI

Table 21: Regression Analysis - ANOVA Analysis Table

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.260	1	2.260	5.571	.019[b]
	Residual	63.694	157	.406		
	Total	65.954	158			
2	Regression	16.705	3	5.568	17.526	.000[c]
	Residual	49.249	155	.318		
	Total	65.954	158			

a. Dependent Variable: IWB

b. Predictors: (Constant), TL

c. Predictors: (Constant), TL, CSE, OCI

Table 22: Regression Analysis - Coefficients Table

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.153	.189		11.416	.000
	TL	.157	.066	.185	2.360	.019
2	(Constant)	-.168	.383		-.439	.661
	TL	.066	.077	.078	.858	.392
	OCI	.057	.079	.066	.721	.472
	CSE	.497	.075	.466	6.622	.000

a. Dependent Variable: IWB

Table 23: Regression Analysis - Excluded Variables Table

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	OCI	.116[b]	1.125	.262	.090	.582
	CSE	.470[b]	6.714	.000	.473	.981

a. Dependent Variable: IWB

b. Predictors in the Model: (Constant), TL

5.3 Hypothesis - Analysis Results

5.3.1 Hypothesis 1: Transformational Leadership & Creative Self-Efficacy

H1 –	*TL is positively associated with employee CSE within the context of a knowledge-intensive services organisation*

A Pearson product-moment correlation coefficient was computed to assess the associative relationship between Transformational Leadership (TL) and employee Creative Self-Efficacy (CSE) in Technology Consulting Organisations (TCOs). There was a very weak / no correlation found between the two variables [r = 0.138, n = 159, p = 0.082]. A scatterplot summarizes the results (Figure 10).

This finding was not aligned with the predicted results from extant academic research. In order to validate the correlative model being applied, the 199 responses from the original data sample was reviewed for *non-TCO* employees in Ireland, 13 entries were found.

A Pearson product-moment correlation coefficient was computed to assess the associative relationship between Transformational Leadership (TL) and employee Creative Self-Efficacy (CSE) in *non-TCO* organisations [Sample size: 13]. There was a moderate-strong correlation found between the two variables [r = 0.533, n = 13, p = 0.061]. A scatterplot summarizes the non-TCO sample results (Figure 11). This outcome is aligned with existing academic research on similar samples groups, validating the method.

The results would suggest that the there is no correlation between TL and CSE in the sample population for TCOs. There is a strong correction was seen for non-TCO employees in the same test [expected]. Hypothesis 1 can be rejected for employees of TCOs.

Figure 10: TL & CSE (in TCO)

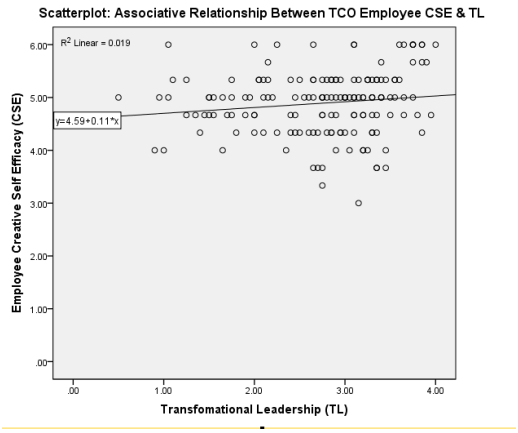


Figure 11: TL & CSE (in Non-TCO)

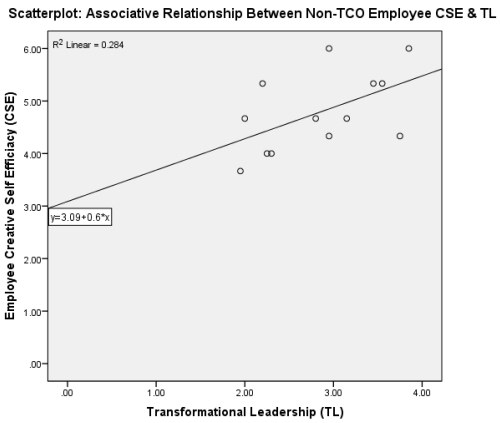


Table 24: TL & CSE (TCO Employees) – Pearson Correlation Coefficient

Correlations

		TL	CSE
Transformational Leadership (TL)	Pearson Correlation	1	.138
	Sig. (2-tailed)		.082
	N	159	159
Creative Self-Efficacy (CSE)	Pearson Correlation	.138	1
	Sig. (2-tailed)	.082	
	N	159	159

Table 25: TL & CSE (Non-TCO Employees) – Pearson Correlation Coefficient

Correlations

		TL	CSE
Transformational Leadership (TL)	Pearson Correlation	1	.533
	Sig. (2-tailed)		.061
	N	13	13
Creative Self-Efficacy (CSE)	Pearson Correlation	.533	1
	Sig. (2-tailed)	.061	
	N	13	13

5.3.2 Hypothesis 2: Transformational Leadership & Org. Climate for Innovation

H2 –	*TL is positively associated with the perceived OCI within the context of a knowledge-intensive services organisation*

A Pearson product-moment correlation coefficient was computed to assess the associative relationship between Transformational Leadership (TL) and an employee's perceived Organisational Support for Innovation (OCI) in Technology Consulting Organisations (TCOs).

There was a strong correlation found between the two variables for this population sample [r = 0.647, n = 159, p = 0.000]. A scatterplot summarizes the results (Figure 12). This result is aligned with the dominant view in the existing academic literature; Hypothesis 2 can be accepted for employees of TCOs.

Figure 12: TL & OCI (in TCO)

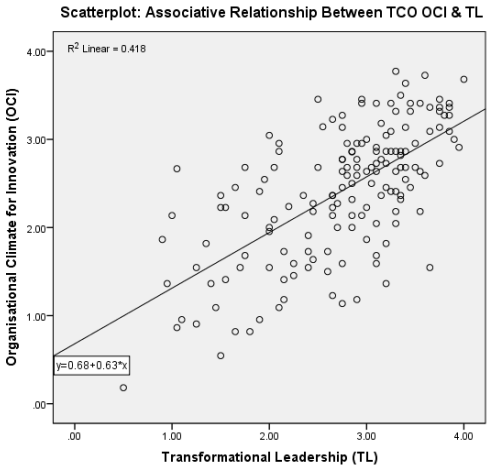


Table 26: TL & OCI (TCO Employees) – Pearson Correlation Coefficient

Correlations

		TL	OCI
Transformational Leadership (TL)	Pearson Correlation	1	.647**
	Sig. (2-tailed)		.000
	N	159	159
Organisational Climate for Innovation (OCI)	Pearson Correlation	.647**	1
	Sig. (2-tailed)	.000	
	N	159	159

**. Correlation is significant at the 0.01 level (2-tailed).

5.3.3 Hypothesis 3: Org. Climate for Innovation & Creative Self-Efficacy

H3 –	*The perceived OCI in an organisation is positively associated with employee CSE, within the context of a knowledge-intensive services organisation*

A Pearson product-moment correlation coefficient was computed to assess the associative relationship between employee Creative Self-Efficacy (CSE) levels and an employee's perceived Organisational Support for Innovation (OCI) in Technology Consulting Organisations (TCOs).

There was a very weak / no correlation found between the two variables for this population sample [r = 0.152, n = 159, p = 0.057]. A scatterplot summarizes the results (Figure 13). The correlation analysis has indicated that CSE and OCI do not have an associative relationship in the context of a TCO environment, for this sample. Hypothesis 3 can be rejected for employees of TCOs.

Figure 13: CSE & OCI (TCO)

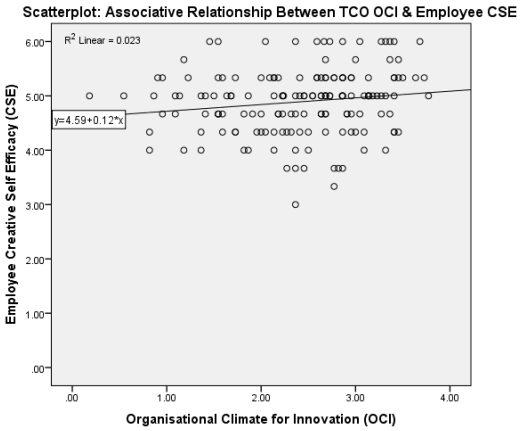


Table 27: CSE & OCI (TCO Employees) – Pearson Correlation Coefficient

Correlations

		OCI	CSE
Organisational Climate for Innovation (OCI)	Pearson Correlation	1	.152
	Sig. (2-tailed)		.057
	N	159	159
Creative Self-Efficacy (CSE)	Pearson Correlation	.152	1
	Sig. (2-tailed)	.057	
	N	159	159

5.3.4 Hypothesis 4: Org. Climate for Innovation & Innovative Working Behaviours

H4 –	*The perceived OCI in an organisation is positively associated with employee IWB within the context of a knowledge-intensive services organisation*

A Pearson product-moment correlation coefficient was computed to assess the associative relationship between an employee's perceived Organisational Support for Innovation (OCI) score and an employee's Innovative Working Behaviours (IWB) in Technology Consulting Organisations (TCOs).

There was a very weak / no correlation found between the two variables for this population sample [r = 0.187, n = 159, p = 0.018]. A scatterplot summarizes the results (Figure 14). The correlative analysis has indicated that OCI and IWB do not have an associative relationship in the context of a TCO environment for this sample. Hypothesis 4 can be rejected for employees of TCOs.

Figure 14: OCI & IWB (TCO)

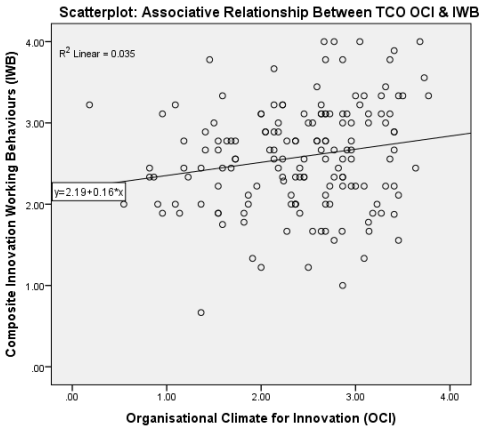


Table 28: OCI & IWB (TCO Employees) – Pearson Correlation Coefficient

Correlations

		OCI	IWB
Organisational Climate for Innovation (OCI)	Pearson Correlation	1	.187*
	Sig. (2-tailed)		.018
	N	159	159
Innovative Working Behaviours (IWB)	Pearson Correlation	.187*	1
	Sig. (2-tailed)	.018	
	N	159	159

*. Correlation is significant at the 0.05 level (2-tailed).

5.3.5 Hypothesis 5: Creative Self-Efficacy & Innovative Working Behaviours

H5 -	*The measure of an employee's CSE can be positively correlated with employee's IWB in a knowledge-intensive services organisation*

A Pearson product-moment correlation coefficient was computed to assess the associative relationship between employees' Creative Self-Efficacy (CSE) scores and employees' Innovative Working Behaviours (IWB) levels in Technology Consulting Organisations (TCOs).

There was a moderate-strong correlation found between the two variables for this population sample [r = 0.486, n = 159, p = 0.000]. A scatterplot summarizes the results (Figure 15). The correlative analysis has indicated that CSE and IWB do have a moderate to strong associative relationship in the context of a TCO environment, for this sample. Hypothesis 5 can be accepted for employees of TCOs.

Figure 15:CSE & IWB (TCO)

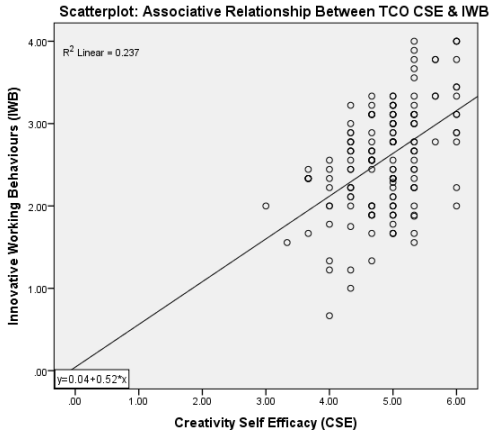


Table 29: CSE & IWB (TCO Employees) – Pearson Correlation Coefficient

Correlations

		CSE	IWB
Creative Self-Efficacy (CSE)	Pearson Correlation	1	.486**
	Sig. (2-tailed)		.000
	N	159	159
Innovative Working Behaviours (IWB)	Pearson Correlation	.486**	1
	Sig. (2-tailed)	.000	
	N	159	159

**. Correlation is significant at the 0.01 level (2-tailed).

5.3.6 Hypothesis 6: Transformational Leadership & Innovative Working Behaviours

H6 -	*Transformational leadership has a positively associated relationship with employee innovative working behaviours in knowledge-intensive services organisation*

A Pearson product-moment correlation coefficient was computed to assess the associative relationship between Transformational Leadership (TL) scores and employees' Innovative Working Behaviours (IWB) levels in Technology Consulting Organisations (TCOs).

There was a very week to no correlation found between the two variables for this population sample [r = 0.185, n = 159, p = 0.019]. A scatterplot summarizes the results (Figure 16). The correlative analysis has indicated that TL and IWB do not have an associative relationship in the context of a TCO environment, for this sample. Hypothesis 6 can be rejected for employees of TCOs.

Figure 16: TL & IWB (TCO)

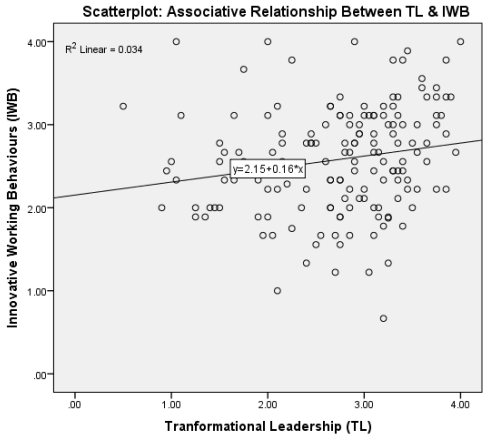


Table 30: TL & IWB (TCO Employees) – Pearson Correlation Coefficient

Correlations

		TL	IWB
Transformational Leadership (TL)	Pearson Correlation	1	.185*
	Sig. (2-tailed)		.019
	N	159	159
Innovative Working Behaviours (IWB)	Pearson Correlation	.185*	1
	Sig. (2-tailed)	.019	
	N	159	159

*. Correlation is significant at the 0.05 level (2-tailed).

H6a – The subconstructs of TL (IM, IA, IS and IC) are equally weighted in terms of their positive association with employee IWB.

Hypothesis 6a assumed, based on the extant academic literary view, that Transformational (TL) Leadership and its subconstructs had positive correlations with TCO employee Innovative Working Behaviours (IWB).

A Pearson product-moment correlation coefficient was computed to assess the associative relationship between each of the Transformational Leadership (TL) subconstructs and the TCO employees' Innovative Working Behaviours (IWB) score.

In all cases, a weak / no correlation was found as shown by the Pearson Correlation value in the following table:

Table 31: TL Subconstructs & IWB (TCO Employees) – Pearson Correlation Coefficient

Correlations

		IWB
Innovative Working Behaviours (IWB)	Pearson Correlation	1
	N	159
Transformational Leadership – Idealised Attributes	Pearson Correlation	.137
	Sig. (2-tailed)	.085
	N	159
Transformational Leadership – Idealised Behaviours	Pearson Correlation	.231
	Sig. (2-tailed)	.003
	N	159
Transformational Leadership – Inspirational Motivation	Pearson Correlation	.140
	Sig. (2-tailed)	.078
	N	159
Transformational Leadership – Intellectual Stimulation	Pearson Correlation	.174
	Sig. (2-tailed)	.028
	N	159
Transformational Leadership – Individual Consideration	Pearson Correlation	.150
	Sig. (2-tailed)	.060
	N	159

Based on the results, Hypothesis 6a can be rejected for the sample population of employees of TCOs.

5.5 Summary & Supporting Qualitative Analysis

Table 32: Hypothesis Results Summary Table

Hypothesis	Assumed Positive Correlation	Result
H1	TL → CSE	**Rejected**
H2	TL → OCI	**Accepted**
H3	OCI → CSE	**Rejected**
H4	OCI → IWB	**Rejected**
H5	CSE → IWB	**Accepted**
H6	TL → IWB	**Rejected**

Based on the hypotheses findings, the results of the pilot group were cross referenced with the statistical findings, and 3 candidate's results were identified to match the findings. These candidates were approached and requested to participate in a short unstructured interview to discuss their results. Due to availability constraints, only 1 of the 3 participants was interviewed. Participant A is a senior consultant with a Dublin-based TCO.

The following section details their commentary and the corresponding inductive analysis.

5.5.1 H1 & H1a: Transformational Leadership and Creative Self-Efficacy

Participant A: *'While I understand the role of transformational leadership and its potential to support staff behaviours and creative abilities; the reality is that within the consulting environment, you are rarely working directly with your manager or lead, as you are onsite with customers even sometimes in different countries. And therefore, it is hard to measure the influence of a consulting firm's managers on their direct staff, when we are usually not collocated, working together or have regular day-to-day contact'.*

Analysis: The commentary from Participant A, indicates that the influence of the subconstructs of that make up Transformation Leadership are reduced due to the leadership structure with the consulting environment.

The distributed team structure reduces the ability for the leader to demonstrate the TL's 'Idealised Attributes (IA) and Behaviours (IB)' to employees; this reduces the leader's ability to gain follower commitment through the creation of a sense of admiration and loyalty.

By the nature that the TCO leader is not working directly with their staff they are unable to Intellectually Stimulate (IS) their employee nor empower followers to view (new/old) problems from alternate viewpoints.

Due to the distributed TCO team structures, it is not possible the leader to demonstrate TL's 'Individual Consideration (IC)'.

H1a – The effect of TL on employee CSE is not diluted in a distributed team environment.

Based on the Participant A's commentary it can be inferred that TL is diluted and weakened through the distributed leadership structure of TCOs. Hypothesis 1a is rejected.

5.5.2 H3: Organisational Climate for Innovation and Creative Self-Efficacy

Participant A:

'Consultancies are places where we are always trying to keep up to date on the latest technology and trends in our own specialist areas, and we are regularly asked to deliver customer presentation, in-house knowledge transfers and new service proposals on these new emerging trends. However, because we are usually in roles where we are assigned to specific customer sites to deliver on specialist tasks or services, there is little opportunity for us to innovate with technologies or bring a new approach to customer organisations [as they may not be supportive of new approaches]'.

Analysis: The commentary from 'Participant A' indicates that while TCOs are innovative environments to work within; i.e. they do support innovation in service designs and the require that staff stay abreast of emerging trends. There are limitations to the creative endeavours that the organisations can support, due to its need to delivery on customer commitments in customer specified service designs. This factor reduces the ability for the TCO's own OCI to influence the employee's CSE.

5.5.2 H5: Creative Self-Efficacy and Innovative Working Behaviours

Participant A: *'I do feel that a person's own drive to be creative and problem solve is a self-driven character trait. I don't believe that organisations necessarily need to promote this trait in people, but that should they [TCO employees] already have it.*

Having that character trait does lead to people wanting to innovate in the workplace and on customer sites, so even when opportunities are limited in what we can do from a service delivery perspective - it is possible to work with customers [co-create] to see if we can improve

processes and how we deliver services to them. I don't believe that the influence of a consulting manager or lead is needed to support this behaviour'.

Analysis: The commentary from 'Participant A' indicates that self-acquired CSE is a greater influencer of employee IWB, above the TCO's leadership team's style. It appears as through while the TCO OCI and leadership teams aspire to promote innovative behaviours, this is tempered by the distributed leadership structures within TCO organisations.

6.0 Discussion

6.1 Academic and Theoretical Discussion

6.1.1 Transformational Leadership and Creativity, Climate & Innovative Behaviours

Finding: This research paper has found that there was no associative relationship between transformational leadership (TL) and employee innovative working behaviours (IWB). Creative Self-Efficacy was not positively associated with Transformational Leadership (TL). TL does have an association with a positive an Organisational Climate for Innovation (OCI).

Discussion: The dominant view within the academic literature cites a positive associative relationship between Transformational Leadership (TL), creativity and the Innovation Working Behaviours (IWB) of employees (Choi et al. 2016; Kao et al., 2015; Jung, Chow & Wu, 2003). While positive correlations have been reported between TL and IWB, research has focused on the technology product-centric innovation sector (Choi et al., 2016; Sattayaraksa & Boon-itt, 2016; Jung, Chow & Wu, 2003). There has been less focus on the investigation of the relationship in the service sectors.

Kao et al. (2015) recently advanced the academic research in services innovation, by further investigating the relationship between TL and IWB within the unskilled services sector. This research and associated results build on the earlier research by Shin and Zhou (2003) who found a positive correlation between TL and IWB in a service innovation context.

The research findings Shin and Zhou (2003) has not been without challenge; research by Jaussi and Dionne (2003) has rejected the positive TL and IWB relationship finding, based on their results that indicated that TL had no influence in employee creativity. The Jaussi and Dionne (2003) finding was consistent with the results from this study; where a non-associative relationship between Transformational Leadership and employee Creative Self-Efficacy (CSE) was found for TCOs.

While Kao et al. (2015) cite that transformational leadership 'is an integral part for successful service innovation' – this research study's findings would challenge that observation, [given the different sample population of knowledge-intensive services organisation employees within this paper]. The results of this study have shown that TL and IWB do not have an associative relationship.

This research paper has identified a potential gap in the extant literature, on the subject of TL and IWB (in a services context). The existing has focused on traditionally structured

organisations (Kao et al, 2015; Shin & Zhou, 2003). Within the 'traditional' workplace paradigm, leadership team(s) are collocated with their subordinate employees, and the TL leaders have the ability to directly act out the idealised behaviours of a transformational leader on a daily basis (Bass & Avolio, 1994). A collocated working environment supports the transformational leader's ability to influence followers through mere proximity.

The 'traditional' organisational and leadership structure is not consistent with that experienced in the day-to-day working environment of TCO employees; who work in distributed teams across multiple customer organisations and geographical locations. As such, the opportunity for transformational leaders (within technology consulting organisations) to influence employee IWB through the demonstration of idealised TL behaviours the is greatly reduced, if not negated.

Research by Whitford and Moss (2009) may possibly challenge this negative assertion on the association between TL influence and distributed leadership structures; citing their 2009 research results, which showed that technology does enable transformational leadership to work across distributed work groups. To counter challenge this argument; Whitford and Moss's (2009) research was shared across a diverse sample of participant professions (with only ~25% of the sample being categorised as 'consultants') and therefore does not give a homogenous or services-centric analysis of a TCO-type organisations.

The dominant literary view is that Transformational Leadership (TL) does activity promote and support employee creativity. Jung, Chow and Wu (2003) cite that through their leadership style '[top managers] can affect employee creativity and organisational innovation' levels, through shaping their employee self-perceptions of their ability to achieve creative endeavours (CSE) and by creating a 'sustaining climate and culture that nurtures creative efforts'.

While the proponents of the benefits of TL make up the majority of the literary opinion; there are opponents to this view. Wyld (2013), cites that transformational leaders and their performances is contingent on the environment in which they are working. A view that is supported by Li et al. (2013) who cited that TL as negated where contextual 'favourable conditions' are missing. Based on the results seen is this study, where TL was not associated with CSE for TCOs; and having understood the leadership experience contextual framing of the TCO employee in a distributed structure – it could be argued that Li et al. (20013) and Wyld (2013) are correct in their contingency assumptions on the influence of TL.

It can be argued that within the distributed environmental context of a TCO, that the influence of TL on CSE is negated, which challenges the dominant literary understanding of TL.

A positive relationship between TL and OCI was found during this study; a positive relational association that is accepted by the dominant literary opinion (Choi et al., 2016; Sattayaraksa & Boon-itt, 2016; Jung, Chow & Wu, 2003; Kao et al., 2015; Tierney & Farmer, 2011).

Based on the research results from this paper, it can be asserted that TL is negated by distributed team structures, this reduces the TL influence on IWB and employee creativity. It can also be cited that distributed leadership structures reduce the beneficial potency of TL.

6.1.2 Employee Creative Self-Efficacy and Innovative Working Behaviours

Finding: The research paper found a positive association between employee Creative Self-Efficacy (CSE) and employee Innovative Working Behaviours (IWB).

Discussion: The creation of a positive organisational Climate in Innovation (OCI) has been identified as a supporting factor for promoting innovation in organisations (Yuan & Woodman, 2010), and in promoting creativity in individuals (Tierney & Farmer, 2011). The driving influence of Transformational Leadership to support employee Creative Self-Efficacy (CSE) has been accepted as the populous opinion in the extant academic literature.

The need for TL influence in the process of supporting employee's CSE can be challenged in light of the results of this research paper. The research finding is this paper has identified that employee CSE can be present in the absence of TL influence, and still have a positive influence on employee IWB.

CSE by its nature is an individualised character attribute that is embodied by perseverance and self-belief (Tierney & Farmer 2002), and as such it could be perceived as a standalone self-perpetuating phenomenon devoid of the need for external prompting. Tierney (1997) argues that without the promotion of an individual's belief in their own ability to innovate, then the probability of them demonstrating creative behaviours are unlikely.

Motivational thought leaders such as Dan Pink (2009) cite that employees actively seek out opportunities to innovate themselves without prompting. Pinks (2009) observation ties in with the findings of this research paper, whereby CSE is a standalone construct that by its nature promotes individual IWB.

Assuming the above statement to be true, it can be argued that measuring employee CSE is a robust predictor of future innovative capacity within an organisation.

6.2 Practitioner / Managerial Implications

6.2.1 Leadership Structures, Engagement and Distributed teams

One of the key findings of the research has been that transformational leadership (TL) is not positively associated with employee innovative working behaviours (IWB), in the TCO context.

This finding is at odds with the dominant literary opinion on TL and IWB, however it must be highlighted that the [services] sector and working environment context for TCOs is non-traditional, and these factors has not been researched in depth by the extant literature.

TCO employees are normally based on customer sites (away from their organisational offices) and reporting to distributed leadership structures. This abstraction and reduced near-proximity to the TCOs leadership team appears to reduce its influence and negate the benefits of a transformational leader behaviours.

Previous research by Whitford and Moss's (2009) suggests that TL is possible in distributed teams, using modified leadership techniques such as path-goal setting. Their research also focused on the use of technology to enable transformational leaders to demonstrate the influential behaviours that in turn drive positive employee behaviours.

While Whitford and Moss's (2009) research is not TCO or services-centric; it does put focus on some key factors to address the challenges faced by TCO leadership teams; such as their employee engagement and communications models, and communication frequency to maintain employee engagement.

It is recommended that TCO leadership team review their current infrastructure to support continual employee communication and engagements. Only through an on-going dialogue, can leadership teams build awareness employee needs (demonstrating TL's 'Individual Concern'), support employee creative self-efficacy building activities, and demonstrate the desire TL's idealised behaviours that should in-turn promote more customer-centric employee behaviours.

6.2.2 Creative Self-Efficacy: A Predictor of Innovative Capacity

Creative Self-Efficacy (CSE) is defined as an individual's self-confidence in their own ability to complete a creative endeavour or task (Waterwall, Fuller & Budden, 2017). There are key character traits such as self-drive and perseverance that are key in supporting an individual's CSE levels and innovative output.

In light of the research results, indicating a strong correlation between employee CSE and Innovative working behaviours (IWB). It could be proposed that the measurement of employee's self-reported CSE, during the hiring phase, is a more accurate predictor of their future innovative performance and by-association a better predictor for the organisation's potential for innovative capacity in the future.

The regression analysis (section 5.3) between the constructs TL, CSE, OCI and IWB, identified that CSE offered a far stronger influence on the levels of IWB by employees; and as such CSE as a key predictor for future organisational innovative capacity.

The results also indicated the importance in the role of leadership teams in promoting their employee's CSE. Tierney (1997) highlighted that without the promotion of an individual's belief in their own ability to innovate, then the probability of them demonstrating creative behaviours are unlikely. A by-product on non-promotion of CSE within an organisation is an immediate reduction innovative output by employees, and longer-term reduced organisational innovative potential.

6.3 Research Limitations & Future Research

6.3.1 Research Design and Future Design Proposal

The research sample population was from several different technology consulting organisations, each with their own and varying level of TL (so the ability to control for this variable was limited). The research methodology was limited to a cross-sectional study, supporting a time-specific measure of the associative relationships between the constructs only. It would be recommended for future research, that a longitudinal quantitative analysis of the relationship between TL, CSE, OCI and IWB on a single TCO and constant sample population. This will support a deeper understanding of how TCO leadership frameworks can leverage the difference constructs, and understand their influence over time. It must also be noted that the questionnaires used as part of this study, used the 'self-reporting' questionnaires only. Through conducting a longitudinal study on a TCO, there would be the opportunity to include 'leader-scored' questionnaires which would be a deeper understanding of the TL from both the leader and follower perspective.

6.3.2 Services-Sector Limitations and Future Opportunities

The research conducted by Kao et al. (2015) focused on the non-skilled services sector in Taiwan. This study extended a similar research model into the technology knowledge-intensive service sector in Ireland. It would be recommended to extend the usage of this

model into different geographical locations to understand the different cultural and contextual influence on the responses and the model.

It must be noted that this study and Kao et al. returned different results from the aspect of the correlations between Transformational Leadership and employee Innovative Working Behaviours (IWB). Further investigation is required to understand the business contextual factors that have led to such a deviation in the results.

As the new model is agnostic to services sectors, the application of the model to different professional service sectors would widen the current scope for the model, and support the generalisability of its findings in the future (e.g. expansion in to the financial services, other management consulting domains).

6.3.3 Transformational Leadership in Distributed Services Organisations

One of the key findings from this research paper was the negating influence of distance and distributed teams on the purported beneficial influences of Transformational Leadership (TL). The academic literature review found limited research on this topic, which was primarily focused on product-centric organisations. A future channel of research would be to extend the understanding of the influence of TL in the consultancy environment context (other than technology domain) and to extend this research across distributed consulting teams.

6.4 Reflections on Learning

This research study has deepened the understanding of the influence of organisational environments and leadership 'cues' on employee contextual perceptions of their working environment. The research has further investigated the associative relationship between Transformational Leadership (TL), creativity and innovation in the context of a knowledge-intensive services organisation. The research findings opposed the common literary view that TL is a driver of innovation in all business environments contexts, and has raised questions as to the application some aspects of Fielders (1965) 'Leadership Contingency Theory' in the case of Transformation Leaders and their effectiveness in different contextual settings.

The qualitative research has added a contextual framing to the perceptions and experiences of study participants. This contextual framing identified that transformational leadership's influence can be negated through a distributed team structure.

The greatest challenge faced by leadership teams within their knowledge-intensive services sector will be to attract, engage and retain innovative employees. The research finding that

suggests that an individual's CSE is a strong predictor of future potential innovative capacity, which, suggests that TCO leadership teams must actively screen for this attribute when selecting new talent to grow organisations.

7.0 Conclusion

A new research model was built upon the research models used by Choi et al. (2016) and Kao et al. (2015) into the associative relationships between TL and IWB in both technology product-centric organisations and unskilled services organisations respectively.

This research paper developed a multi-factor model for measuring the influence of the Transformational Leadership (TL) on employee Innovative Working Behaviours (IWB), while monitoring the influencing socio-psychological factors in the innovation process; such as employee Creative-Efficacy (CSE) and perceived Organisational Climate for Innovation (OCI).

This research paper extends the extant research and understanding of the associative relationship between transformational leadership and innovative working behaviours into knowledge-intensive services sector.

The research findings have indicated that there is no associative correlation between transformational leadership, employee innovation working behaviours (IWB) and creative self-efficacy (CSE) in the context of a technology consulting organisation. While the non-correlation finding between TL and IWB is at odds to the dominant literary opinion, there are academic gaps in current understanding of transformational leaderships influence in different working contexts and paradigms.

The results did indicate that employee creative self-efficacy levels are strong predictors of future employee innovative working behaviours. A linear regression equation was derived, offering a predictive model of Innovative Working behaviours (IWB) based in the independent variables; transformation leadership levels, employee creative self-efficacy level and the employee perceived organisational climate for innovation.

A supporting qualitative research analysis indicated that the distributed leadership and team structure of consulting organisations negates the recognised positive influences of the transformational leadership. TCO leaders are unable to demonstrate the idealised behaviours of transformational leaders, in order to gain the support and following of TCO employees. Managerial recommendations to address the above challenges include the investigation of modified leadership techniques to mitigate the challenges of distributed team structures.

Based on the research results from this paper, it can be asserted that TL is negated by distributed team structures; this reduces the TL influence on IWB and employee creativity. It can also be assumed that distributed leadership structures reduce the beneficial potency of transformational leadership; further research is needed to strengthen the extant literature.

8.0 References

Aas, T. H., & Pedersen, P. E. (2011). The impact of service innovation on firm-level financial performance. Service Industries Journal, 31(13), 2071–2090.

Akram, T, Lei, S, & Haider, M. (2016). 'The impact of relational leadership on employee innovative work behavior in IT industry of China', Arab Economic And Business Journal, 11, pp. 153-161.

Alan-Prince, R. (2014). The Future Of Thought Leadership. [online] Forbes.com. Available at: https://www.forbes.com/sites/russalanprince/2014/06/17/the-future-of-thought-leadership/#4bf244c42973 [Accessed 25 Aug. 2017].

Amabile, T. M. (1996). Creativity in context: Update to the social psychology of creativity. Boulder, CO: Westview Press.

Amabile, T. M. (1998). How to kill creativity. Harvard Business Review, 76, 77–87.

Amabile, T.M., Conti, R., Coon, H., Lazenby, J. and Herron, M. (1996). "Assessing the work environment for creativity", Academy of Management Journal, Vol. 39 No. 5, pp. 1154-1184.

Ancona. D,, & Caldwell, D. (1987). "Management issues facing new product team's in high technology companies". In D. Lewin, D. Lipsky, & D. Sokel (Eds.), Advances in industrial and labor relations, vol. 4: 191-221. Greenwicb, CT: JAI Press.

Anderson, N. R., & West, M. A. (1998). Measuring climate for work group innovation: Development and validation of the team climate inventory. Journal of Organizational Behavior, 19, 235–258.

Avey, J. B., Luthans, F., & Youseff, C. M. (2010). The additive value of positive psychological capital in predicting work attitudes and behaviors. Journal of Management, 36(2), 430-452.

Avolio, B.J., Bass, B.M. and Jung, D.I., 1999. Re-examining the components of transformational and transactional leadership using the multifactor leadership questionnaire. Journal of Occupational and Organizational Psychology, 72, pp. 441-462.

Avolio, B.J., Zhu, W.C., Koh, W. and Bhatia, P. (2004), "Transformational leadership and organizational commitment: mediating role of psychological empowerment and moderating role of structural distance", Journal of Organizational Behavior, Vol. 25 No. 8, pp. 951-968.

Awamleh, R., & Gardner, W. L. (1999). Perceptions of leader charisma and effectiveness: The effects of vision content, delivery, and organizational performance. Leadership Quarterly, 10, 345–73.

Bandura, A. (1977). "Self-Efficacy: Toward a Unifying Theory of Behavioral Change." Psychological Review 84(2): 191-215.

Barnes, B.R., Fox, M.T. & Morris, D.S. 2004, "Exploring the Linkage between Internal Marketing, Relationship Marketing and Service Quality: A Case Study of a Consulting Organization", Total Quality Management & Business Excellence, vol. 15, no. 5, pp. 593-601.

Barras, R. (1986). "Towards a Theory of Innovation in Services," Research Policy.

Barrett, M, Davidson, E, Prabhu, J, & Vargo, S 2015, 'SERVICE INNOVATION IN THE DIGITAL AGE: KEY CONTRIBUTIONS AND FUTURE DIRECTIONS', MIS Quarterly.

Barron, F. and Harrington, D.M. (1981), “Creativity, intelligence, and personality”, Annual Review of Psychology, Vol. 32 No. 1, pp. 439-476.

Bass, B. M. & Avolio, B. J. (1994). Improving organizational effectiveness through transformational leadership. Thousand Oaks, CA: Sage.

Bass, B.M. (1985). “Leadership and Performance Beyond Expectations”. Free Press, New York NY.

Bass, B.M. (1999), “Two decades of research and development in transformational leadership”, European Journal of Work and Organizational Psychology, Vol. 8 No. 1, pp. 9-32.

Bass, B.M. and Avolio, B.J. (1995), MLQ, Multifactor Leadership Questionnaire, 2nd ed., Mind Garden, Redwood City, CA.

Bass, B.M. and Riggio, R.E. (2006), Transformational Leadership, 2nd ed., Lawrence Erlbaum, Mahwah, NJ.

Bei, H. & Yidan, Z. (2016), 'Creative Self-Efficacy Mediates The Relationship Between Knowledge Sharing And Employee Innovation', Social Behavior & Personality: An International Journal, 44, 5, pp. 815-826, Psychology and Behavioral Sciences Collection.

Bunce, D., & West, M. (1994). Changing work environments: Innovating coping responses to occupation stress. Work and Stress, 8, 319-331.

Burns, J.M. (1978) Leadership. New York. Harper & Row

Caldwell, S. (2012). 'Statistics Unplugged'. Belmont, Calif., Wadsworth, Andover. Cengage Learning.

Caplan, R. D. (1983). Person-environment fit: Past, present and future. In C. L. Cooper (Ed.), Stress research (pp. 35-78). London: Wiley.

Choi, J. N. (2004). Individual and contextual predictors of creative performance: The mediating role of psychological processes. Creativity Research Journal, 16, 187–199.

Choi, S.B., Kim, K., Ullah, S.M.E. & Kang, S. (2016). "How transformational leadership facilitates innovative behavior of Korean workers: Examining mediating and moderating processes", Personnel Review, vol. 45, no. 3, pp. 459-479.

Cohen, L. (1992). Power Primer. Psychological Bulletin, 112(1) 155-159.

Connelly, C.E. and Kelloway, E.K. (2003), “Predictors of employees’ perceptions of knowledge sharing culture”, Leadership & Organization Development Journal, Vol. 24 No. 5, pp. 294-230.

Crawford, S.D., Couper M.P. & Lamias M.J. (2001). ‘Web surveys: Perceptions of burden’. Social Science Computer Review 19.2 146-162.

Cronk, B. C. (2012). How to use SPSS statistics: A step-by-step guide to analysis and interpretation (7th ed.). Glendale, CA: Pyrczak Pub.

Damanpour, F., Walker, R. M., and Avellaneda, C. N. (2009). “Combinative Effects of Innovation Types and Organizational Performance: A Longitudinal Study of Service Organizations,” Journal of Management Studies.

De Groot, T., Kiker, S. and Cross, S. (2000), “A meta-analysis to review organizational outcomes related to charismatic leadership”, Revue Canadienne des Sciences de l’Administration, Vol. 17 No. 4, pp. 356-372.

De Jong, J.P. & Den Hartog. D.N. (2008). ‘Innovative work behavior: Measurement and validation’. EIM Business and Policy Research (2008), pp. 1-27

De Jong, J.P.J. & Den Hartog, D. N. (2007). 'How leaders influence employees' innovative behaviour', European Journal Of Innovation Management, 1, p. 41.

Den Hertog, P. (2000). “Knowledge-Intensive Business Services as Co-Producers of Innovation,” International Journal of Innovation Management 2000 04:04.

Deutskens, E, De Ruyter, K, Wetzels, M, & Oosterveld, P. (2004). 'Response Rate and Response Quality of Internet-Based Surveys: An Experimental Study', Marketing Letters, 1, p. 21.

DeVellis, R.F. (2012). Scale development: Theory and applications. Los Angeles: Sage. pp. 109–110.

Donaldson, S.I. & Grant-Vallone, E.J. (2002). ‘Understanding Self-Report Bias in Organizational Behavior Research’. Journal of Business and Psychology. Vol17: 245.

Drazin, R., Glynn, M. A., & Kazanjian, R. K. (1999). ‘Multilevel theorizing about creativity in organizations: A sensemaking perspective’. Academy of Management Review, 24: 286–307.

Duncan, R. (1976). The ambidextrous organization: Designing dual structures for innovation. Killman, R. H., L. R. Pondy, and D. Sleven (eds.) The Management of Organization. New York: North Holland. 167-188.

Dunford, R. (2000).“Key challenges in the search for the effective management of knowledge in management consulting firms”, Journal of Knowledge Management, vol. 4, no. 4, pp. 295-302, 2000.

Edwards, J.R., & Cooper, C. L, (1990). The person-environment fit approach to stress: Recurring problems and some suggested solutions. Joumal of Organisational Behavior, 11, 293-307,

Eisenberger, R, Cummings, J, Armeli, S, & Lynch, P. (1997). 'Perceived Organizational Support, Discretionary Treatment, and Job Satisfaction', Journal Of Applied Psychology.

Elias, L. (2015). ‘Intelligent Questionnaire Design for Effective Participant Evaluations', Training & Development (1839-8561), 42, 2, pp. 8-10.

Fiedler F (1965), “Engineer the Job to Fit the Manager”, Harvard Business Review, September-October, pp. 115-122

Fink, A. (2003). The Survey Handbook.2nd Ed. Sage Publications: California.

French, J.R.P. and Raven, B. (1959), “The basis of social power”, in Cartwright, D. (Ed.), Studies in Social Power, University of Michigan Press, Ann Arbor, MI, pp. 529-69.

Gallouj, F. (2002). “Innovation in the Service Economy: The New Wealth of Nations”, Edward Elgar Publishing, Inc.

Gallouj, F., & Savona, M. (2009). Innovation in services: A review of the debate and a research agenda. Journal of Evolutionary Economics, 19(2), 149–172.

Gardner, W. L., & Avolio, B. A. (1998). The charismatic relationship: A dramaturgical perspective. Academy of Management Review, 23, 32–58.

George, D., & Mallery, M. (2010). SPSS for Windows Step by Step: A Simple Guide and Reference, 17.0 update (10a ed.) Boston: Pearson.

George, J. M., Sc Brief, A. P. (1992). Feeling good-doing good: A conceptual analysis of the mood at work-organizational spontaneity relationship. Psychological Bulletin, 112, 310-329.

Gist, M. E. (1989). ‘The influence of training method on self-efficacy and idea generating among managers’. Personnel Psychology, 42: 787-805.

Gliem, J.A., and Gliem, R.R. (2003). Calculating, interpreting, and reporting Cronbach’s alpha reliability coefficient for Likert-type scales. Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education.

Gong, Y., Huang, J., & Farh, J. (2009). Employee learning orientation, transformational leadership, and employee creativity: The mediating role of employee creative self-efficacy. Academy of Management Journal, 52(4), 765–778.

Guanxiong, P. (2017), 'Structuring Leadership and Team Creativity: The Mediating Role Of Team Innovating Climate ', Social Behavior & Personality: An International Journal, 45, 3, pp. 369-376, Psychology and Behavioral Sciences Collection,

Hogel, M., Parboteeah, K.P. and Munson, C.L. (2003), “Team-level antecedents of individuals’ knowledge networks”, Decision Sciences, Vol. 34 No. 4, pp. 741-770.

Hsu, M, Sheng-Tsung, H, & Hsueh-Liang, F. (2011). 'Creative Self-Efficacy and Innovative Behavior in a Service Setting: Optimism as a Moderator', Journal Of Creative Behavior, 45, 4, pp. 258-272.

HU, H., GU, Q. and CHEN, J., 2013. How and when does transformational leadership affect organizational creativity and innovation? Nankai Business Review International, 4(2), pp. 147-166.

Huffman, C. and Kahn, B.E. (1998), “Variety for sale: mass customization or mass confusion?”, Journal of Retailing, Vol. 74 No. 4, pp. 491-513.

Hurley, R.F. and Hult, G.T. (1998), “Innovation, market orientation and organization learning: an integration and empirical examination”, Journal of Marketing, Vol. 62 No. 3, pp. 42-54.

İnal, H, Yilmaz Kogar, E, Demirdzuen, E, & Gelbal, S 2017, 'Cronbach's Coefficient Alpha: A Meta-Analysis Study', Hacettepe University Journal Of Education, 32, 1, pp. 18-3

Janssen, O. (2000), “Job demands, perceptions of effort-reward fairness, and innovative work behavior”, Journal of Occupational and Organizational Psychology, Vol. 73 No. 3, pp. 287-302.

Janssen, O., E. van de Vliert & M. West (2004), The bright and dark sides of individual and group innovation: a special issue introduction, Journal of Organizational Behavior, 25(2), 129-146.

Jaussi, K. S., & Dionne, S. D. (2003). 'Leading for creativity: The role of unconventional leader behavior'. Leadership Quarterly, 14(4), 475–498.

Johnson, B. (2014). 'Ethical issues in shadowing research'. Qualitative Research in Organizations and Management, 9, 21-40.

Jung, D. (2001). Transformational and transactional leadership and their effects on creativity in groups. Creativity Research Journal, 13, 185–95.

Jung, D.I., Chow, C. and Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. The Leadership Quarterly, 14(4), pp.525-544.

Kanter, R.M. (1988), "When a thousand flowers bloom: structural, collective, and social conditions for innovation in organizations", in Staw, B.M. and Cummings, L.L. (Eds), Research in Organizational Behavior, Vol. 10, JAI Press, Greenwich, CT, pp. 169-211.

Kao, P, Pai, P, Lin, T, & Zhong, J (2015), 'How transformational leadership fuels employees' service innovation behavior', Service Industries Journal, 35, 7/8, pp. 448-466.

Keller, R. T. (1992). Transformational leadership and the performance of research and development project groups. Journal of Management, 18, 489–501.

Khadim, R.A., Asghar, M., Khan, R., Farooq, O. & Afzal, M. 2016, "Determining the Role of Transformational Leadership on Firm Performance through Organizational Innovation and Technological Innovation Capabilities", European Online Journal of Natural and Social Sciences, vol. 5, no. 4, pp. 951.

Kivimaki, M., & Elovainio, M. (1999). A short version of the team climate inventory: Development and psychometric properties. Journal of Occupational and Organizational Psychology, 72(2), 241–246.

Lester, D. 2013, "Measuring Maslow's Hierarchy of Needs", Psychological Reports, vol. 113, no. 1, pp. 15-17.

Levin, K.A., (2006). Study design III: Cross-sectional studies. Evidence-based dentistry, 7(1), p.24.

Li, N., Chiaburu, D. S., Kirkman, B. L., & Xie, Z. (2013). Spotlight on the followers: An examination of moderators of relationships between transformational leadership and subordinates' citizenship and taking charge. Personnel Psychology, 66(1), 225-260.

Liebowitz, J. (2002), "Facilitating innovation through knowledge sharing: a look at the US Naval Surface Warfare Center-Carderock Division", Journal of Computer Information Systems, Vol. 42 No. 5, pp. 1-6.

Lin, L. (2013). The impact of service innovation on firm performance. Service Industries Journal, 33 (15–16), 1599–1632.

Lundy, 0. and Cowling, A. (1996), Strategic Human Resource Management Routledge, London.

Lynch, P.D., Eisenberger, R. and Armeli, S. (1999), “Perceived organizational support: inferior versus superior performance by wary employees”, Journal of Applied Psychology, Vol. 84 No. 4, pp. 467-483.

Machlup, F. (1980). “Knowledge: Its Creation, Distribution and Economic Significance,” Knowledge and Knowledge Production. Princeton, NJ. Princeton University Press.

MacNeil, C.M. (2004), “Exploring the supervisor role as a facilitator of knowledge sharing in teams”, Journal of European Industrial Training, Vol. 28 No. 1, pp. 93-102.

Martins, E.C. & Terblanche, F. (2003). 'Building organisational culture that stimulates creativity and innovation', European Journal Of Innovation Management, 1, p. 64.

Merriam, S. (1988). ‘Qualitative Research and Case Study Applications in Education’. San Francisco: Jossey-Bass.

Mumford, M. D., & Gustafson, S. B. (1988). Creativity syndrome: Integration, application, and innovation. Psychological Bulletin, 103, 27–43.

Ng, T. W., and D. C. Feldman. (2012). “A Comparison of Self-Ratings and Non-Self-Report Measures of Employee Creativity.” Human Relations 65(8): 1021-1047.

Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. Academy of Management Journal, 39, 607–34.

Ordanini, A., & Parasuraman, A. (2011). Service innovation viewed through a service-dominant logic lens: A conceptual framework and empirical analysis. Journal of Service Research, 14(1), 3–23.

Panuwatwanich, K., Stewart, R. A., and Mohamed, S. (2008). Enhancing innovation and firm performance: the role of climate for innovation in design firms. Paper presented at the Proceedings of the 5th International Conference on Innovation in Architecture, Engineering and Construction, Antalya, Turkey.

Patterson, M.G., West, M.A., Shackleton, V.J., Dawson, J.F., Lawthom, R., Maitlis, S., Robinson, D.L. & Wallace, A.M. (2005), 'Validating the Organizational Climate Measure: Links to Managerial Practices, Productivity and Innovation', Journal Of Organizational Behavior, 4, p. 379

Perry, C. 1998, "Processes of a case study methodology for postgraduate research in marketing", European Journal of Marketing, vol. 32, no. 9/10, pp. 785-802.

Pink, D. H. (2009). Drive: The surprising truth about what motivates us. New York, NY: Riverhead Books.

Politis, J.D. (2002), “Transformational and transactional leadership enabling (disabling) knowledge acquisition of self-managed teams: the consequences of performance”, Leadership & Organization Development Journal, Vol. 23 No. 4, pp. 186-197.

Porat, M. U. and Rubin, M.R. (1977). The Information Economy. 9 Volumes. Washington DC US Government Printing Office.

Quinlan, C (2011). Business research methods. Andover: South-Western Cengage Learning.

R. Srinivasan, “The management consulting industry: Growth of consulting services in India: Panel discussion”, IIMB Management Review, Volume 26, Issue 4, December 2014, Pages 257-270

Redmond, M. R., Mumford, M. D., & Teach, R. (1993). ‘Putting creativity to work: Effects of leader behaviour on employee creativity’. Organisational Behaviour and Human Decision Processes, 55:120-151.

Rhoades, L. and Eisenberger, R. (2002), “Perceived organizational support: a review of the literature”, Journal of Applied Psychology, Vol. 87 No. 4, pp. 698-714.

Rogelberg SG and Luong A (1998) ‘Non-response to mailed surveys: A review and guide’. Current Directions in Psychological Science 7 60-65.

Ruggles, R. (1998), “The state of the notion: knowledge management in practice”, California Management Review, Vol. 40 No. 3, pp. 80-89.

Salomo, S., Weise, J. and Gemünden, H.G. (2007), “NPD planning activities and innovation performance: the mediating role of process management and the moderating effect of product innovativeness”, Journal of Product Innovation Management, Vol. 24 No. 4, pp. 285-302.

Sarantakos, S. (2005). Social Research 3rd ed. Melbourne: Macmillan Education.

Sattayaraksa, T. & Boon-itt, S. 2016, "CEO transformational leadership and the new product development process", Leadership & Organization Development Journal, vol. 37, no. 6, pp. 730-749.

Saunders, M. (2009). 'A Real-World Comparison of Responses to Distributing Questionnaire Surveys by Mail and Web', Proceedings Of The European Conference On Research Methods For Business & Management Studies, pp. 323-330.

Saunders, M., Lewis, P. & Thornhill, A. 2009;2007;, Research methods for business students, 5th;5th;4th; edn, Financial Times Prentice Hall, Harlow.

Schneider, B. (1990). The climate for service: an application of the climate construct. In B. Schneider (Ed.), Organizational climate and culture (pp. 383–412). San Francisco, CA: Jossey-Bass.

Schneider, B., Bowen, D. E., Ehrhart, M. G., & Holcombe, K. M. (2000). The climate for service: evolution of a construct. In N. M. Ashkanasy, C. P. M. Wilderom, & M. F. Peterson (Eds.), Handbook of organizational culture and climate (pp. 21–36). Thousand Oaks, CA: Sage.

Scott, S, & Bruce, R. (1994). 'Determinants Of Innovative Behaviour: A Path Model Of Individual Innovation In The Workplace', Academy Of Management Journal, 37, 3, pp. 580-607

Shih, T.H. & Fan, X. (2008). Comparing response rates from web and mail surveys: A meta-analysis Field Methods 20.3 249-271

Shin, S. J., & Zhou, J. (2003). ‘Transformational leadership, conservation, and creativity: Evidence from Korea’. Academy of Management Journal, 46(6), 703–714.

Sosik, J. J., Avolio, B. J., & Kahai, S. S. (1997). Effects of leadership style and anonymity on group potency and effectiveness in a group decision support system environment. Journal of Applied Psychology, 82, 89–103.

Srinivasan, R 2014, 'Round Table: The management consulting industry. Growth of consulting services in India: Panel discussion', IIMB Management Review, 26, pp. 257-270.

Subramaniam, M. & Youndt, M.A. 2005, "The Influence of Intellectual Capital on the Types of Innovative Capabilities", The Academy of Management Journal, vol. 48, no. 3, pp. 450-463.

Tierney, P. (1997). “The Influence of Cognitive Climate on Job Satisfaction and Creative Efficacy.” Journal of Social Behavior and Personality 12(4): 831-847.

Tierney, P. and Farmer, S.M. (2002), “Creative self-efficacy: its potential antecedents and relationship to creative performance”, Academy of Management Journal, Vol. 45 No. 6, pp. 1137-1148.

Tierney, P., & Farmer, S. M. (2011). Creative self-efficacy development and creative performance over time. Journal of Applied Psychology, 96(2), 277–293.

Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. Personnel Psychology, 52, 591–620.

Tomaskovic-Devey D, Leiter J & Thompson S. (1994). ‘Organizational survey non-response’, Administrative Science Quarterly 39 439-457.

Trotter, P. and Vaughan, J. (2012), “Innovation in UK companies: an evaluation of the implementation of best practice in front end innovation processes and methodologies”, International Journal of Innovation Science, Vol. 4 No. 4, pp. 191-204.

Tuli, F. (2010). ‘The basis of distinction between qualitative and quantitative research in social science’. Ethiopian Journal of Educational Sciences. Vol 6: 97-108.

Tyldum, G. (2012). ‘Ethics or access? Balancing informed consent against the application of institutional, economic or emotional pressures in recruiting respondents for research’. International Journal of Social Research Methodology, 15, 199-210.

Van de Ven, A. H. 1986. Central problems in the management of innovation. Management Science, 32: 590-607.

Wang, P., Rode, J. C., Shi, K., Luo, Z., & Chen, W. (2013). A workgroup climate perspective on the relationships among transformational leadership, workgroup diversity, and employee creativity. Group & Organization Management, 38(3), 334–360.

Waterwall, B, Fuller, B, & Budden, H. (2017). 'Understanding the Inner Muse: Integrating the Creative Self-Efficacy Literature', Journal Of Managerial Issues, 29, 2, pp. 189-210.

Whitford, T, & Moss, S 2009, 'Transformational Leadership in Distributed Work Groups: The Moderating Role of Follower Regulatory Focus and Goal Orientation', Communication Research, 36, 6, pp. 810-837

Wold, H. (1985). Systems analysis by partial least squares. In: P. Nijkamp, H. Leitner, & N. Wrigley (Eds.), Measuring the unmeasurable (pp. 221–52). Dordrecht: Martinus Nijhoff.

Wyld, D.C.,(2013).'Transformation Leadership: When is It Redundant?'. Academy of Management Perspectives. Vol. 27, No. 2.

Yasin Ghadi, M., Fernando, M. and Caputi, P. (2013), "Transformational leadership and work engagement", Leadership & Organization Development Journal, Vol. 34 No. 6, pp. 532-550.

Yuan, F. R., & Woodman, R. W. (2010). Innovative behavior in the workplace: The role of performance and image outcome expectations. Academy of Management Journal, 53(2), 323-342.

Yuan, F., & Woodman, R. W. (2010). Innovative behavior in the workplace: The role of performance and image outcome expectations. Academy of Management Journal, 53, 23–342.

Yukl, G. (1999). 'An evaluation of conceptual weaknesses in transformational and charismatic leadership theories', Leadership Quarterly, 10, 2, p. 285.

Yukl, G. (2001). 'Leadership in organizations'. Upper Saddle River, NJ: Prentice-Hall.

Zubair, A., Bashir, M., Abrar, M., Baig, S. A., & Hassan, S. Y. (2015). Employee's participation in decision making and manager's encouragement of creativity: The mediating role of climate for creativity and change. Journal of Service Science and Management, 8, 306–321.

Appendix I: Research Questionnaire

Investigating the Relationship between Leadership Styles and Innovative Staff Behaviours, in Irish Technology Consulting Organisations

The objective of this study is to investigate correlations between the workplace leadership styles and innovative working behaviours by teams, in technology consulting organisations.

This research will be based on the results from this questionnaire.

The questionnaire will take about 10 minutes to complete. Please complete all sections - your time is appreciated.

All responses are anonymous and confidential. The collected data will not be shared.

Your data only be used for this research study, and will only be accessible to myself and research supervisor. You will not be rewarded for participation in this study.

You may choose to opt out of the survey at any time.

If you have any questions regarding this study, please contact me at x15016030@student.ncirl.ie.

__NOTE:__ Your response is not recorded until you click the 'Submit' button.

About You...

The following section captures some demographic information about participants. Please complete all questions. This data will not be shared, and is only accessible by myself and research supervisor.

Demographics...

D1. Which age group are you in? *

Mark only one oval.

- ◯ Under 18
- ◯ 19 to 29
- ◯ 30 to 39
- ◯ 40 to 49
- ◯ 50 to 59
- ◯ Over 60
- ◯ Prefer Not to Say

D2. Which is your gender? * Mark only one oval.

- Female
- Male
- Prefer Not to Say

D3. What is your Highest Education Level Attained? * Mark only one oval.

- No Formal Education or Training
- Secondary Level
- Technical or Vocational
- Advanced Certificate or Completed Apprenticeship
- Higher Certificate
- Ordinary Bachelor Degree or National Diploma
- Honours Bachelor Degree/Professional qualification or both
- Postgraduate Diploma / Degree / Masters
- Doctorate (Ph.D) or Higher
- Other: _____

About Your Role...

D4. Are you currently in employment? * Mark only one oval.

- Yes
- No
- Prefer Not to Say

D5. Is your job based in Ireland? * Mark only one oval.

- Yes
- No
- Other: _____

D6. Do you work in a Technology Consulting or Technology Delivery Role? * Mark only one oval.

- [ ] Yes
- [ ] No
- [ ] Other: _____

D7. **Optional:** Name of Employer / Organisation

_____

D8. Which title best describes your role level?

* Mark only one oval.

- [ ] CEO / Partner
- [ ] Director / Head of Function
- [ ] Manager / Senior Manager (Technical Role)
- [ ] Manager / Senior Manager (Non-Technical Role)
- [ ] Consultant / Senior Consultant (Technical Role)
- [ ] Consultant / Senior Consultant (Non-Technical Role)
- [ ] Engineer / Senior Engineer
- [ ] Graduate

Other: _____

D9. Tenure with Organisation *

Mark only one oval.

- [ ] 0 to <5 years
- [ ] >5 to <10 years
- [ ] >10 to <15 years
- [ ] >15 to <20 years
- [ ] >20 years

Creative Self-Efficacy

Creative self-efficacy refers to the belief that someone has in their ability to produce creative outcomes, the questionnaire taken from the Farmer & Tierney (2002) paper.

Please answer in your case. Please answer all items.

Use the following rating scale:

* 0 = Very Strongly Disagree
* 1 = Disagree
* 2 = Somewhat Disagree
* 3 = Neither Agree nor Disagree
* 4 = Somewhat Agree
* 5 = Agree
* 6 = Very Strongly Agree

How do the following statements relate to you...

C1. I have confidence in my ability to solve problems creatively. * Mark only one oval.

	0	1	2	3	4	5	6	
Very Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Very Strongly Agree

C2. I feel that I am good at generating novel ideas. Mark only one oval.

	0	1	2	3	4	5	6	
Very Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Very Strongly Agree

C3. I have the knack to for further developing the ideas of others. Mark only one oval.

	0	1	2	3	4	5	6	
Very Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Very Strongly Agree

Working Behaviours

The following section investigates your working behaviours, the questionnaire taken from Onne Janssen's (2000) paper.

Please answer in your case. Please answer all items, if an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank.

Use the following rating scale:

* 0 = Not at All
* 1 = Once in a While
* 2 = Sometimes
* 3 = Fairly Often
* 4 = Frequently, if not Always

In your role, how often do you spend time…

W1. Creating new ideas for difficult issues Mark only one oval.

	0	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

W2. Searching out new working methods, techniques, or instruments Mark only one oval.

	1	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

W3. Generating original solutions for problems Mark only one oval.

	2	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

W4. Mobilising support for innovative ideas Mark only one oval.

	0	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

W5. Acquiring approval for innovative ideas Mark only one oval.

	0	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

W6. Making important organisational members enthusiastic for innovative ideas Mark only one oval.

	1	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

W7. Transforming innovative ideas into useful applications Mark only one oval.

	2	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

W8. Introducing innovative ideas into the work environment in a systematic way Mark only one oval.

	3	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

W9. Evaluating the utility of innovative ideas Mark only one oval.

	4	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

Organisation Climate for Innovation

The following section investigates your organisation's climate for innovation, the questionnaire taken from Bruce & Scotts (1994) paper.

Please answer all items, if an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank.

Use the following rating scale:

* 0 = Strongly Disagree
* 1 = Disagree
* 2 = Undecided * 3 = Agree
* 4 = Strongly Agree

How would you describe your organisation's working climate with respect to innovation?

I1. Creativity is encouraged here. Mark only one oval.

	0	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I2. Our ability to function creatively is respected by the leadership. Mark only one oval.

	1	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I3. Around here, people are allowed to try to solve the same problems in different ways. Mark only one oval.

	2	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I4. The main function of members in this organisation is to follow orders which come down through channels. Mark only one oval.

	3	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I5. Around here, a person can get in a lot of trouble by being different. Mark only one oval.

	4	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I6. This organisation can be described as flexible and continually adapting to change. Mark only one oval.

	5	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I7. A person can't do things that are too different around here without provoking anger. Mark only one oval.

	0	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I8. The best way to get along in this organisation is to think the way the rest of the group does. Mark only one oval.

	0	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I9. People around here are expected to deal with problems in the same way. Mark only one oval.

	0	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I10. This organisation is open and responsive to change. Mark only one oval.

	1	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I11. The people in charge around here usually get credit for others. Mark only one oval.

	2	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I12. In this organisation, we tend to stick to tried and true ways. Mark only one oval.

	3	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I13. This place seems to be more concerned with the status quo than with change. Mark only one oval.

	4	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I14. Assistance in developing new ideas is readily available. Mark only one oval.

	5	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I15. There are adequate resources devoted to innovation in this organisation.

	0	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I16. There is adequate time available to pursue creative ideas here. Mark only one oval.

	0	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I17. Lack of funding to investigate creative ideas is a problem in this organisation. Mark only one oval.

	1	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I18. Personnel shortages inhibit innovation in this organisation. Mark only one oval.

	2	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I19. This organisation gives me free time to pursue creative ideas during the workday. Mark only one oval.

	3	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

I20. The reward system here encourages innovation. Mark only one oval.

	0	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

I21. This organisation publicly recognises those who are innovative. Mark only one oval.

	0	1	2	3	4	
Not at All	◯	◯	◯	◯	◯	Frequently, if not Always

I22. The reward system here benefits mainly those who don't rock the boat.

	0	1	2	3	4	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

Leadership Style

The following questionnaire is based on the MLQ by Avolio and Bass (Offline usage licensed by Mind Garden July 2017)

Please answer this questionnaire anonymously. Please select a leader with your organisation and complete the questionnaire in relation to that person.

This questionnaire is to describe the leadership style of the person / your work leader as you perceive it.

Please answer all items, if an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank.

About You...

IMPORTANT: Please answer this question (Its necessary for the analysis processing)

T0. Which best describes you?
Mark only one oval.

- I am at a higher organizational level than the person I am rating.
- The person I am rating is at my organizational level.
- I am at a lower organizational level than the person I am rating.
- I do not wish my organizational level to be known.

Measuring Leadership...

The following section has descriptive statements relating to the person you are rating.

Judge how frequently each statement fits the person you are describing. Use the following rating scale:

* 0 = Not at All
* 1 = Once in a While
* 2 = Sometimes
* 3 = Fairly Often
* 4 = Frequently, if not Always

"The Person I am Rating..."

T1. Re-examines critical assumptions to question whether they are appropriate

	0	1	2	3	4	
Not at All						Frequently, if not Always

T2. Talks about their most important values and beliefs
Mark only one oval.

	0	1	2	3	4	
Not at All	⬭	⬭	⬭	⬭	⬭	Frequently, if not Always

T3. Seeks differing perspectives when solving problems Mark only one oval.

	0	1	2	3	4	
Not at All	⬭	⬭	⬭	⬭	⬭	Frequently, if not Always

T4. Talks optimistically about the future Mark only one oval.

	0	1	2	3	4	
Not at All	⬭	⬭	⬭	⬭	⬭	Frequently, if not Always

T5. Instills pride in me for being associated with him/her Mark only one oval.

	0	1	2	3	4	
Not at All	⬭	⬭	⬭	⬭	⬭	Frequently, if not Always

***Note:** Only 5 indicative Items from the MLQ Survey are included in this Dissertation Appendix.*

This is due to copyright restrictions under the Mind Garden Inc. (2017) MLQ licensing agreement.

Appendix 2: SPSS Reliability Analysis Results

A2.1 TL: Reliability Analysis - SPSS Outputs

Table 33: TL (1) Idealised Attributes Case Summary

Case Processing Summary

		N	%
Cases	Valid	159	100.0
	Excluded[a]	0	.0
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 34: TL (1) Idealised Attributes Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.829	4

Table 35: TL (2) Idealised Behaviours Case Summary

Case Processing Summary

		N	%
Cases	Valid	159	100.0
	Excluded[a]	0	.0
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 36: TL (2) Idealised Behaviours Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.739	4

Table 37: TL (3) Inspirational Motivation Case Summary

Case Processing Summary

		N	%
Cases	Valid	159	100.0
	Excluded[a]	0	.0
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 38: TL (3) Inspirational Motivation Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.849	4

Table 39: TL (4) Intellectual Stimulation Case Summary

Case Processing Summary

		N	%
Cases	Valid	159	100.0
	Excluded[a]	0	.0
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 40: TL (4) Intellectual Stimulation Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.820	4

Table 41: TL (5) Individual Consideration Case Summary

Case Processing Summary

		N	%
Cases	Valid	159	100.0
	Excluded[a]	0	.0
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 42: TL (5) Individual Consideration Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.869	4

Table 43: TL (1,2,3,4,5) Composite Case Summary

Case Processing Summary

		N	%
Cases	Valid	159	100.0
	Excluded[a]	0	.0
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 44: TL (1,2,3,4,5) Composite Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.952	20

A2.2 CSE: Reliability Analysis - SPSS Outputs

Table 45: CSE Case Summary

Case Processing Summary

		N	%
Cases	Valid	159	100.0
	Excluded[a]	0	.0
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 46: CSE Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.669	3

A2.3 OCI: Reliability Analysis - SPSS Outputs

Table 47: OCI (1) Support for Creativity Case Summary

Case Processing Summary

		N	%
Cases	Valid	157	98.7
	Excluded[a]	2	1.3
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 48: OCI (1) Support for Creativity Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.843	6

Table 49: OCI (2) Tolerance of Difference Case Summary

Case Processing Summary

		N	%
Cases	Valid	158	99.4
	Excluded[a]	1	.6
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 50: OCI (2) Tolerance of Difference Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.895	6

Table 51: OCI (3) Resource Availability for Innovation Case Summary

Case Processing Summary

		N	%
Cases	Valid	158	99.4
	Excluded[a]	1	.6
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 52: OCI (3) Resource Availability for Innovation Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.834	6

Table 53: OCI (4) Reward for Innovation Case Summary

Case Processing Summary

		N	%
Cases	Valid	157	98.7
	Excluded[a]	2	1.3
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 54: OCI (4) Reward for Innovation Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.813	4

Table 55: OCI (1,2,3) Composite Case Summary

Case Processing Summary

		N	%
Cases	Valid	155	97.5
	Excluded[a]	4	2.5
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 56: OCI (1,2,3) Composite Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.930	18

Table 57: OCI (1,2,3,4) Composite Case Summary

Case Processing Summary

		N	%
Cases	Valid	154	96.9
	Excluded[a]	5	3.1
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 58: OCI (1,2,3,4) Composite Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.944	22

A2.4 IWB: Reliability Analysis - SPSS Outputs

Table 59: IWB (1) Idea Generation Case Summary

Case Processing Summary

		N	%
Cases	Valid	159	100.0
	Excluded[a]	0	.0
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 60: IWB (1) Idea Generation Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.719	3

Table 61: IWB (2) Promotion Case Summary

Case Processing Summary

		N	%
Cases	Valid	157	98.7
	Excluded[a]	2	1.3
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 62: IWB (2) Promotion Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.804	3

Table 63: IWB (3) Idea Realisation Case Summary

Case Processing Summary

		N	%
Cases	Valid	157	98.7
	Excluded[a]	2	1.3
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 64: IWB (3) Idea Realisation Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.834	3

Table 65: IWB (1,2,3) Composite Case Summary

Case Processing Summary

		N	%
Cases	Valid	156	98.1
	Excluded[a]	3	1.9
	Total	159	100.0

a. Listwise deletion based on all variables in the procedure.

Table 66: IWB (1,2,3) Composite Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.876	3

Appendix 3: Submission of Thesis Form

Submission of Thesis to Norma Smurfit Library, National College of Ireland

Student name: Jeremy Kearney		**Student number:**	15016030
School:	School of Business	**Course:**	MBA

Degree to be awarded: Master of Business Administration

Title of Thesis:

'An Investigation into the Associative Relationship Between Transformational Leadership and Innovative Working Behaviour, in Irish Technology Consulting Organisations'

One hard bound copy of your thesis will be lodged in the Norma Smurfit Library and will be available for consultation. The electronic copy will be accessible in TRAP (http://trap.ncirl.ie/), the National College of Ireland's Institutional Repository. In accordance with normal academic library practice all theses lodged in the National College of Ireland Institutional Repository (TRAP) are made available on open access.

I agree to a hard bound copy of my thesis being available for consultation in the library. I also agree to an electronic copy of my thesis being made publicly available on the National College of Ireland's Institutional Repository TRAP.

Signature of Candidate:

_____

For completion by the School:

The aforementioned thesis was received by _____ Date: _____

This signed form must be appended to all hard bound and electronic copies of your thesis submitted to your school.