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## Assessing factors that influence employees' creativity in public-sector organisations The case of Dubai government organisations

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**Assessing factors that influence employees' creativity in public-sector organisations**

**The case of Dubai government organisations**

This proposal is presented as part of the requirements for the award of the degree  
Doctor of Philosophy

By

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## **Publications**

- 1) Al Balooshi, M. Jayashree, P. & Fargher, S. 2013. 'Creativity training in the UAE government sector: Lessons from the literature', 27th Annual Australian and New Zealand Academy of Management Conference (ANZAM): Managing on the Edge, 4–6 December, Hobart, Tasmania.

## **Declaration**

I, Mardeya Darwish Al Balooshi, declare that this thesis is submitted in partial fulfilment of the requirements for the conferral of the degree Doctor of Philosophy from the University of Wollongong, and is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution.

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## **Abstract**

The componential model of creativity and innovation in organisations (Amabile, 1988) focuses on factors that influence employees' creativity in the workplace. The model is widely accepted in the creativity field, which is why many theorists have used it as a foundation to develop their own. However, a limitation of the model is its predominant focus on individual/organisational factors to the exclusion of external factors outside the organisation that might influence employees' creativity. Moreover, the revised model by Amabile and Pratt (2016) prioritised organisational motivation to innovate a factor within the model influence employees' creativity. Despite this, limited studies have examined the direct and mediating role of organisational motivation to innovate to inspire employees' creativity.

Currently, Dubai government organisations prioritise creativity, which is part of the government's strategic plan, vision and mission. That is why all Dubai government organisations apply multiple initiatives to enhance employee creativity. Despite this focus, few empirical studies have been conducted within Dubai government organisations to identify the factors that influences' employee creativity.

Therefore, this study aimed to examine the mediating influence of organisational motivation to innovate between three antecedent factors—a) individual creativity components factors, b) determinants of work context factors and c) government regulation and incentives—on the outcome (creativity among employees') in Dubai government organisations.

A mixed method approach was used in this study, comprising an exploratory/qualitative cycle (Cycle 1), followed by a quantitative design including structural equation modelling with data collected through a questionnaire (Cycle 2). In Cycle 1 of the research design, three Dubai government organisations that focus on creativity were asked to participate in this study. The sample consisted of nine key decision-makers, who were asked about creativity, innovation and factors influencing employees' creativity in public-sector organisations.

Cycle 1 findings supported the applicability of the componential model of creativity and innovation in organisations (Amabile, 1988) and provided evidence that

individual factors and work context factors enable employee creativity. Further, an additional finding emerged from this qualitative phase: government regulation and incentives also influence employees' creativity.

Thus, by drawing on the componential model of creativity and innovation in organisations (Amabile, 1988), a modified conceptual model was developed that aimed to go beyond the present creativity literature. In the modified model, organisational motivation to innovate comprising both organisational encouragement and lack of organisational impediments acted as a mediator between the three antecedent factors: a) the individual creativity components factors, b) determinants of work context factors and c) government regulation and incentives and employees' creativity.

Cycle 2 of the research design included 668 employees from three Dubai government organisations. The participants were asked about the specific individual, work environment and government regulation and incentives factors that influence their creativity.

Statistical analysis of Cycle 2 data indicated that only organisational motivation to innovate had a direct relationship with employees' creativity. Moreover, the results of mediating effects showed significant indirect effects of: 1) domain-relevant skills, 2) sufficient resources, 3) managerial encouragement, 4) work group supports, 5) freedom, 6) challenging work and 7) government regulation and incentives via organisational motivation to innovate enhance employees' creativity. The results of mediating effects demonstrated no indirect effects of: 1) creativity-relevant skills, 2) realistic workload pressure via organisational motivation to innovate inspire employees' creativity.

The findings extended Amabile's (1988) model by examining the impact of government regulation and incentives as factor external to the organisational context on employees' creativity. Moreover, organisational motivation to innovate acted as mediator in most relationships between different factors and employee creativity. Thus, the achieved results provided empirical validation for the revised model by Amabile and Pratt (2016), who recommended further empirical studies to examine

organisational motivation to innovate as a key factor with the potential to influence employees' creativity in the workplace.

The current study extended the literature because it is among the first to examine how antecedent factors (individual, organisational and external) affect organisational outcomes such as employees' creativity in a context (Dubai government organisations) characterised by public reform defined by new public management. The results confirmed that regulatory reforms affect employee creativity positively only when combined with an enabling organisational context that foster employees' creativity. Also, the results has extended Amabile's (1988, 1997) model by examining the direct and indirect impact of organisational motivation to innovate as a summated variable. Moreover, it answered the call for further research about how the indirect relationship between creativity and different wok context can be explained.

Finally, conducting a mixed method approach to address the research question is an additional contribution of the present research, as most studies in creativity literature have used quantitative methodology to address their research questions.

Moreover, this study is foundational research for other researchers in this field, especially in Dubai. Further, for managers and decision-makers who prioritise employees' creativity, these findings will deepen the understanding of the holistic role of organisational motivation to innovate to nurture employees' creativity. Thus, providing a work environment characterised with the availability of different dimensions of organisational motivation to innovate is a long-term investment that will benefit the organisations and enhance employees' creativity.

Keywords: Creativity, public sector, componential model of creativity and innovation in organisations, organisational motivation to innovate, work context factors, and government regulation and incentives.



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Writing this thesis has been a challenge in my life, but it has certainly been worth it because it has developed my competencies and skills.

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Also, I wish to thank my co-supervisor, Dr Scott Fargher, for his support and contribution, and Dr Munyaradzi Nyadzayo for his help in preparing Chapter 7.

Further, I would like to thank my family for their love, confidence and prayers. Honestly, I am what I am today primarily because of my father Darwish, my brothers; Fuad, Omran and Fadhel, and my sister Shamma.

Finally, my deepest gratitude goes to my friends and colleagues.

## **Dedication**

This thesis is dedicated in memory of my beloved mother, Sharifa Jalaal, who was always proud of me and used to call me Dr Mardeya even before I fulfilled the requirements of a PhD degree. She was, and will always remain, my inspiration and driving motivation.

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## **List of Abbreviations**

AGFI	Adjusted Goodness-Of-Fit
AMOS	Analysis Of Moment Structures
APA	American Psychological Association
AVE	Average Variance Extracted
BM	Bootstrap Method
CCL	Center for Creative Leadership
CCQ	Creative Climate Questionnaire
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CR	Composite Reliability
EFA	Exploratory Factor Analysis
FA	Factor Analysis
GFI	Goodness-Of-Fit Index
GOF	Goodness-Of-Fit
H	Hypothesis
HRM	Human Resource Management
IFI	Incremental Fit Index
KEYS	Climate For Creativity
NC	National Culture
NFI	Normed Fit Index
NPM	New Public Management
OC	Organisational Culture
PBE	Public Business Enterprises
PCA	Principle Component Analysis
PIS	Public Institutional Systems
R&D	Research and Development
RMR	Root Mean Square Residual
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modelling
SOQ	Situational Outlook Questionnaire
SPSS	Statistical Package for the Social Sciences

SSSI	Siegel Scale of Support for Innovation
TCI	Team Climate Inventory
TLI	Tucker-Lewis Index
TQM	Total Quality Management
UAE	United Arab Emirates
UK	United Kingdom
UOW	University of Wollongong
US	United States
VIF	Variance Inflation Factor

# Chapter 1: Introduction

This chapter begins with an outline of the background of the study. Creativity in the public sector will be explored, as will creativity in the United Arab Emirates (UAE). Then, empirical studies related to creativity in the UAE context will be highlighted and creativity in Dubai will be analysed. Further, creativity-related rules issued by the Dubai government will be presented. The aim, objective and significance of the study will be discussed and the structure of the thesis will be presented. Additionally, the research gaps and research question will be highlighted. Finally, the main concepts will be defined.

The underlying motivation for this thesis is to understand in depth different factors that influence employees' in government organisations in a new context (i.e., Dubai, UAE, where there is substantial investment in creativity training among government organisation employees). The research investigates the influence of other new external factors on employees' creativity. Finally, the research assesses whether organisational motivation to innovate mediates the relationship between different factors and employees' creativity.

## 1.1 Background

Creativity is an old term. It exists in the writings of ancient Greek and Roman philosophers (Treffinger et al., 2002). In the modern era, during the 1950s, Guilford (1950) was a pioneer in the field of creativity research. He was the first individual to highlight this issue in 1950 and as president of the American Psychological Association (APA), he stated at the annual meeting that just 186 of 121,000 entries in *Psychological Abstracts* dealt with the notion of creativity (Alkahtani, 2009).

There is evidence to indicate that there is a strong relationship between creativity and innovation, as many scholars argued that creativity is considered as a starting point for innovation (e.g. Amabile, 1996; Yusuf, 2009; Udwardia, 1990; O'Shea and Buckley, 2007). However, there are some differences between both concepts. According to McLean (2005), creativity is generated at the individual level, while innovation is resulted at the organisational level. Moreover, De Sousa, Pellissier & Monteiro (2012) argued that creativity is closer to behavioural sciences (e.g., psychology and

education), while innovation is closer to public administration, political science, management and economics.

Creativity is often regarded a vital source of competitive strength for organisations (Shalley, 1995) since it has become appreciated across diverse tasks, professions and industries (Shalley & Gilson, 2004). In particular, creative employees' are considered a precious resource within organisations that are committed to variety, change and adaptation (Gilbert, Preshaw & Ivy, 1996). Therefore, numerous creativity theories and models have been developed to identify factors influencing individuals' and teams' creative behaviour. Key contributors include the componential theory of creativity and innovation in the organisational context (Amabile, 1988), the interactionist theory (Woodman, Sawyer & Griffin, 1993) and the multiple social domains theory (Ford, 1996). However, these theories focus only on the impact of individual and organisational factors on employees' creative outcomes. Building on the dimensions of the above theories and models, a large body of literature has examined the conditions required to enable employees' creativity within the workplace. The results indicate that employees' creativity is affected by individual characteristics (e.g., Amabile, 1989, 1996; Ganesan & Weitz, 1996; Tierney, 1997; Eisenberger & Rhoades, 2001; Shin & Zhou, 2003; Eder & Sawyer, 2008) and organisational characteristics (e.g., Redmond, Mumford & Teach, 1993; Oldham & Cummings, 1996; Cummings & Oldham, 1997; Ekvall & Ryhammar, 1999; Zhou & George, 2001; Farmer, Tierney & Kung-McIntyre, 2003; Zhou, 2003; Politis, 2005; Hauksdóttir, 2011). Few studies have attempted to extend the early theories by examining factors outside the organisations that may influence employees' creative abilities. For example, other factors identified include family and friends (Madjar, Oldham & Pratt, 2002) and supportive family (Horng & Lee, 2009).

## **1.2 Creativity in public-sector organisations**

According to Simpson (2013), the term 'public sector' is frequently synonymous with public administration, public service and governmental entities. Broadbent and Guthrie (1992) defined public sector as 'the part of a nation's economic activity which is traditionally owned and controlled by government' (p. 3). Further, they identified the main domains of any public-sector: central government, local government, public

business enterprises (PBE) and public institutional systems (PIS). Thus, it is consistently clear that government entities are part of public-sector organisations.

Currently, creativity plays a vital role in public-sector organisations (McLean, 2005) Rangarajan (2008) stated that unlike private-sector organisations, investigating creativity has been ignored in the public sector for some time. According to Grell (2013), a main reason for this is the nature of public-sector organisations, which are characterised as rule-based organisation with limited opportunity for creativity.

Recently, this trend has changed and several public-sector organisations have focused on creativity. Mack, Green and Vedlitz (2008) stated that along with efficiency and innovation, creativity has been advocated as a technique for public bureaucracies, governmental and non-governmental, to transform into flexible, reactive units that perform more efficiently and work more effectively for their constituencies (and taxpayers).

Compared to the private sector (e.g., Amabile & Grysiewicz, 1989; Oldham & Cummings, 1996; Amabile, 1988, 1997; George & Zhou, 2001; Eder & Sawyer, 2008; Foss, Woll & Moilanen, 2013), few studies have examined creativity in public-sector organisations (e.g., Heinzen, 1990; West & Berman, 1997; Coveney, 2008; Benito, Montesinos & Bastida, 2008; Berman & Kim, 2010; Hui & Lau, 2010; Luring & Selmer, 2013; Loewenberger, Newton & Wick, 2014).

Most of these studies were conducted in the United States (US) and Western countries (e.g., Heinze, 1990; West & Berman, 1997; Coveney, 2008; Benito, Montesinos & Bastida, 2008; Luring & Selmer, 2013; Loewenberger, Newton & Wick, 2014), while fewer were conducted in Asia (e.g., Yamada, 1991; Berman & Kim, 2010; Iqbal, 2011; Park et al., 2014; Kim & Yoon, 2015). Limited studies have been conducted in other parts of the world, such as South Africa (e.g., Mbatha, 2013).

### **1.3 Creativity in the UAE**

The UAE is a young country that lies in the Arabian Gulf. Created in 1971 (Badrinath et al., 2004), it is a developing country with a mixed workforce comprising people of many different nationalities seeking job opportunities made available by the discovery of oil in the country. The oil industry is regarded as the most vital sector for the UAE

economy (Suliman & Al-Junaibi, 2010). Emirati society is characterised by quick and ongoing progression across all sectors, despite its infancy as a nation (Harold & Stephenson, 2010). The UAE consists of the seven emirates: Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al-Qaiwain, Ras Al-Khaimah and Fujairah (Abdulla, Djebarni & Mellahi, 2011).

The definition of innovation in the UAE context includes creativity and sometimes, both terms are used interchangeably. Similarly, 'creativity' translated from Arabic is innovation (The official portal of the UAE government, 2017). Thus, both creativity and innovation, if required, will be used to explore creativity in the UAE context.

The UAE aims to enhance employee creativity in the public sector through several initiatives. For instance, the UAE President, His Highness Sheikh Khalifa bin Zayed Al Nahyan, officially declared 2016 as the 'Reading Year'. His Highness justified this trend, stating that reading is considered the basic skill for a new generation of scientists, intellectuals and innovators (the official Portal of United Arab Emirates, The Cabinet, 2016). Similarly, 2015 was declared the 'Year of Creativity' by His Highness (Emirates News Agency, viewed 07 January, 2015). Further, the *UAE Vision 2021* (2012) stated:

we want to be among the best countries in the world by 2021 in a strong and safe union. Knowledgeable and innovative Emiratis will confidently build a competitive and resilient economy. They will thrive as a cohesive society bounded to its identity, and enjoy the highest standards of living within a nurturing and sustainable environment.

In addition, in October 2014 His Highness Sheikh Mohammed bin Rashid introduced the national innovation strategy to implement the *UAE Vision 2021*. The strategy aimed to encourage innovation in seven sectors: renewable energy, transport, education, health, technology, water and space. The first phase of the innovation strategy comprises 30 national initiatives to be accomplished within three years. These include new legislation, innovation incubators, investment in specialised skills, private-sector incentives, international research partnerships and an innovation drive within government (The official Portal uaecabine, 2016). The *UAE National Charter for 2021* rests on four major principles:

- 1) Ambitious, united and confident people who stick to their heritage

- 2) A strong federation with a common destiny
- 3) A competitive economy driven by UAE nationals characterised by innovation and knowledge.
- 4) A high quality of life endowed with sustainable environment (*Khaleej Times*, 7 February 2010).

When Sheikh Mohammed bin Rashid Al Maktoum unveiled the UAE Government strategy, he requested that government employees change their mindset and adopt a culture that encourages creativity, innovation, dedication and productivity (*Khaleej Times*, 2007).

Many other UAE government initiatives related to creativity and innovation have been introduced. For instance, in August 2015, His Highness Sheikh Mohammed initiated the 'UAE Innovation Week' (22–28 November 2015) and urged organisations in the government, private and academic sectors to contribute. Additionally, he asked the public to recommend activities for the 'UAE Innovation Week' through social media channels (The official Portal of Emirate News agency, 2016). In 2015, His Highness Sheikh Mohammed introduced Afkari, a government initiative to support, encourage and finance the creative ideas of more than 90,000 federal government employees, and to develop their organisations' work systems (The official Portal of Wamda, 2016). In May 2013, His Highness launched the e-government era with the creation of the 'Mobile Government' (m-Government) initiative, which requires the UAE government to be available and accessible 24 hours a day, 365 days a year (The official Portal of The United Arab Emirates, 2015). This initiative required a large-scale transformation in the delivery of services; thus, creativity was the only choices. In May 2015, it was announced that UAE federal and local governmental entities attained a 96.3 per cent success rate in transferring to m-Government. Specifically, the most significant 337 services were transformed into m-services (Emirates 24/7, news).

There is a strong emphasis on total quality management (TQM) and creativity in the work context of the UAE public sector, with many organisations adopting quality frameworks such as the Emirate Government Excellence Program (The official Portal of Emirate Government Excellence Program, 2013), Sheikh Khalifa Government Excellence Program (The official Portal of Sheikh Khalifa Government Excellence



Program, 2013) and the Ajman Excellence Program (The official Portal of Ajman Excellence Program, 2013). Further, in 2015, His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai launched the fourth cycle of the UAE Government Excellence System, which comprised three main tenets: vision, creativity and enablers. This system aimed to facilitate government entities to attain welfare and happiness for the nation, fulfil community requirements and expectations to reach the seven-star level, improve efficiency and effectiveness in government services delivery and foster government trends associated with innovation to sustain a competitive advantage (The Official Portal Sheikh Khalifa Government Excellence Program, 2013).

The award criteria contain a common theme: the employee or organisation must provide evidence regarding idea generation and strategies for implementing these ideas focus on reducing cost, increasing organisational income or simplifying work processes. The awards also recognise the strong relationship between creativity and innovation, which is further encouraged in most organisations through financial reward and appreciation certificates. The focus on creativity among UAE employees in the public sector indicates that it is valued at the highest level.

#### **1.4 Empirical studies related to creativity in the UAE context**

Limited empirical studies related to creativity have been conducted in the UAE context. For instance, Dayan, Zacca and Di Benedetto's (2013) research investigated the degree to which diverse resource- and individual-related variables affect entrepreneurial creativity and the degree to which alertness to opportunity and internal motivation mediate the association between these antecedent variables and entrepreneurial creativity. The sample included 119 entrepreneurs within firms in Abu Dhabi and Al Ain. The results indicate that expertise and creative self-efficacy are significantly associated with entrepreneurial creativity. Both intrinsic motivation and alertness to opportunity mediate the relationship between contextual factors and entrepreneurial creativity. Similar research conducted by Politis and Politis (2010) in several UAE service organisations investigated the influence of creative work contextual factors and organisational bureaucracy on creativity and innovation. The results indicated a strong and statistically significant relationship between stimulant determinants of the creative work environment and employees' creativity and

innovation. In contrast, organisational impediment had a negative influence on innovation. The findings also showed that organisational bureaucracy factors had a moderate, negative influence on both creativity and innovation. Politis (2005) investigated the relationship between aspects of dispersed leadership (i.e., self-management) and contextual dimensions that are supportive to creativity and productivity. The data were collected from employees working for high-technology organisations in the UAE. The results revealed a positive and significant relationship between dispersed leadership and the stimulant aspects of the work context for creativity. Second, a negative and significant relationship was identified between dispersed leadership—except promoting self-reinforcement—and the obstacle aspects of the work environment for creativity. Finally, the results indicated that the stimulant aspects of the workplace have a positive and significant impact on both creativity and productivity. While a study conducted by Klein, Waxin and Radnell (2009) did not aim to check creativity, the concept has been indirectly related to the research. The authors investigated the influence of Arab national culture (NC) on the style of organisational culture (OC) in 17 firms in the UAE manufacturing and service sectors. The results showed that there is a clear relationship between both concepts, since NC influences, to some extent, the style of OC in UAE organisations. The authors mentioned that managers and leaders in the sample preferred to see OCs in which members strive to attain positive objectives and a sense of achievement. Employees are expected to be creative and enjoy their work. There is a robust sense of mutual encouragement and support the progress and development of other members.

To sum up, previous studies conducted in UAE workplaces support creativity literature in terms of the positive impact of employees' creative abilities and skills. These studies employed quantitative methodology to address the research questions. Regarding place and sector, some studies specified that they have been conducted in service organisations (Politis, 2005, 2015; Politis & Politis, 2010); however, the authors did not mention the Emirate within the UAE. Dayan, Zacca and Di Benedetto (2013) clarified that their research took place in Abu Dhabi and Al Ain firms. In terms of the creativity factors investigated, some studies examined only work environment factors (Politis & Politis, 2010; Politis, 2015), while Politis (2005), examined both individual and organisational factors.

Despite this body of research, little is known about the factors that affect employees' creativity within Dubai government organisations.

New Public Management (NPM) is kind of reform movement in public-sector organisations (Groot & Budding, 2008) which is applied to diverse degrees and with diverse emphases in public sector organisations (Sluis, Reezigt & Borghans, 2017) and different private-sector practices and concepts were introduced to public-sector organisations across the world (Jas & Skelcher (2014).

Currently, Dubai government implements (NPM) as several principles of private-sector organisations have been adopted by its entities. However, there is a lack of studies that examined the impact of adopting NPM principles in Dubai government organisations. Therefore, there is a need to recognise how this reform affects outcomes such as employee creativity.

Further, there are no mixed methods approaches to explore if there are additional factors that have not yet been tested in public-sector organisations. Therefore, this research will attempt to fill these gaps in addition to examining factors that might indirectly affect the relationship between antecedent and outcomes related to creativity.

## **1.5 Creativity in Dubai**

The focus in this study is the Dubai government, primarily because recently, it has placed increased emphasis on creativity (The national news, 2013). Dubai is part of the UAE; its economy was traditionally oil dependent, but after 1985, oil production decreased and the city reshaped its economy away from oil industry (Soto & Haouas, 2012) .The Dubai government's budget for 2018 supported this change, with oil to represent only six per cent of the state's revenue (Albayan newspaper, 2017). Following the excellence models (McAdam et al., 2013), and adopting a strategy based on implementing public-sector excellence (Dubai Strategic Plan, 2015) and creative ideas is an essential income source of the Dubai government.

Thus, the public sector was able to develop and manage creative initiative projects that are considered government income. For instance, in November 2013, Dubai won the right to host the World Expo in 2020. The theme of Expo 2020 is connecting

minds; creativity is the future. This will be the first time that the World Expo is hosted in the Middle East, North Africa and South Asia. It is expected that 25 million visitors travel to Dubai, 70 per cent of which will be from out of the country (Expo 2020, 2015). Another example is Dubai Aluminium, which is considered one of the world's top 10 producers, investing in tourism with revenues exceeding Dubai's oil revenue (Country Profile: United Arab Emirates, 2007). Additionally, the Dubai government has created an online suggestion system to encourage the public to submit suggestions to: 1) develop organisations' performances, 2) increase stakeholder satisfaction and 3) simplify the work process (The official Portal of Wam, 2016).

In 2015, the Mohammed bin Rashid Smart Majlis was launched; this majlis is considered the largest smart and incorporated platform in Dubai, linking 30 entities that receive suggestions, comments and ideas. The Smart Majlis functions under His Highness Sheikh Mohammed's direct supervision (Albayan Newspaper, 2012). Moreover, the focus on unique ideas helped the government win several ideas-related international awards such as Ideas UK (Albayan Newspaper, 2012), German Ideas (*Al Khaleej*, 2013) and Arabic Ideas (Albayan Newspaper, 2013).

The Dubai government has used several techniques to encourage creativity in the public sector, such as the Dubai Government Excellence Program and the Mohammed bin Rashid Initiative for Government Innovation (The official Portal of Mohammad Bin Rashid Centre for Government Innovation, 2016), government innovation labs and public-sector creativity training programs (The official Portal of Dubai Government, 2017).

The Dubai government consists of 46 entities, its plan (2020–2021) is aligned with the UAE government's vision, 'The People'. The 'City of Happy, Creative & Empowered People' is one of themes included in Dubai's strategic plan (The official Portal of Dubai Plan 2021, 2017).

To ensure that Dubai government entities were pursuing creativity, all visions, missions, messages, values and strategies were reviewed. The results showed that all entities prioritised creativity.

Remarkably, in the context of Dubai, the government attempts to influence citizen creativity and provide UAE residents with channels to communicate their responses

and ideas. For instance, when His Highness Sheikh Mohammed bin Rashid Al Maktoum unveiled the UAE government strategy, he requested that public employees change their existing mindset and adopt a culture that encourages creativity, innovation, dedication and productivity (Khaleej Times, 2007). Also, in 2013, His Highness called for the biggest brainstorming session to ever occur in the UAE; all locals and expatriates participated (AlKhaleeg, 2013). As a result, 65,000 suggestions were received; many suggestions relating to the education system have been adopted by decision-makers. In August 2015, when His Highness Sheikh Mohammed, initiated the UAE Innovation Week, he asked the public to recommend activities for the event using social media channels (The official Portal of Mohammed bin Rashid Smart Majlis, 2016). Finally, in the Mohammed bin Rashid Smart Majlis, every person can submit suggestions directly to the relevant entities (The official Portal of Emirate News agency, 2016).

## **1.6 Creativity and innovation rules issued by the Dubai government**

Reviewing the Dubai government's published rules in the official gazette, during 2010–2017 indicates that in addition to previous initiatives and activities, the Ruler of Dubai has issued new laws relating to creativity and innovation. First, *Law No. 29 of 2015* concerns the organisational structure and legislative framework for the Dubai Smart City project. This law aims to boost the development of the Smart City initiative and foster innovation in this sector by encouraging collaboration between the public and private sectors. Second, *Law No. 19 of 2015* concerns the Museum of the Future, and aims to increase innovation in Dubai to keep pace with the necessities of new generations and build smart future cities. Third, *Law No. 20 of 2015* concerns the dirham fee for innovation. Based on this law, several government agencies will apply an innovation fee of AED 10 to each transaction. These funds will be allocated to foster the Museum of the Future and its projects. Fourth, *Law No. 15 of 2014* relates to the Creative Clusters in Dubai, which aims to improve creative industries in the Dubai government and foster the state's innovation strategy (The official Portal of Dubai Government Official Gazette, 2017). Finally, Dubai's *Human Resource Law No. 27 of 2006* requires that managers and supervisors consider critical and creative thinking when assessing employees for annual performance appraisals (The official Portal of Dubai Government Human Resources Department, 2016).

It is concluded that in the UAE context, and Dubai in particular, government orientation may influence employee creativity and new idea generation. However, the literature indicates that there is a lack of studies that have empirically examined the potential influences of government regulation and incentives on employees' creativity. Despite the significant investment of the Dubai government in creativity, no structured effort has yet been made to evaluate the impact of these initiatives or the influencing factors. The overall aim of this thesis is to examine the factors that affect public-sector employees' creativity in a new context.

## **1.7 Objective**

Unlike Amabile's (1988) model, which considered intrinsic task motivation as a principle of creativity, the revised model by Amabile and Pratt (2016) places greater priority on organisational motivation to innovate. Thus, there is a lack of studies that examine the direct and indirect impact of organisational motivation to innovate as a summated variable on employee creativity.

Moreover, in terms of impact of of adaptation NPM principles in the context of public sector, according to Jingjit & Fotaki (2010) limited studies examined the impact of adopting NPM principles in non-Western counties.

The objective of this study is to examine whether organisational motivation to innovate mediates the relationship between a) the individual creativity components, b) determinants of work context and c) government regulation and incentives, creativity among employees' in Dubai government organisations that applies NPM principles in running its entities.

## **1.8 Concepts**

For the purpose of this study, the following theoretical concepts will be used.

Creativity is:

the development of ideas about products and services, practices or procedures that are novel (unique) and potentially useful having a direct or indirect value to the organisation (Amabile, 1996, p. 1).

Domain-relevant skills are:

the essential skills from which any performance should progress. This element is seen as the set of cognitive pathways for solving a given problem or doing a given tasks. This component includes factual knowledge, technical skills, and special talents in the domain in question. (Amabile 1988, p. 130)

Creativity-relevant skills are:

something extra for creative performance and include a cognitive style favorable to taking new perspectives on problems, an application of heuristics for the exploration of new cognitive pathways and a working to conductive to persistent, energetic pursuit of one's work. (Amabile, 1988, p. 130)

Work context; according to Amabile (1996) there are three broad factors related to work context:

1) Organisational motivation to innovate is a basic orientation of organisation innovation as well as supports for creativity and innovation throughout the organisation. 2) Resources refers to everything that the organisation has available to aid work in the domain targeted for innovation (e.g., sufficient time for producing novel in the domain, and the availability of training. 3) Management practices refers to allowance of freedom or autonomy in the context of work, provision of challenging, interesting work, specification of clear overall strategic goals and formation of work teams by drawing together individuals with diverse skills and perspectives. (p. 1156)

## **1.9 Research gaps**

There are theoretical and contextual research gaps in this area.

### **1.9.1 The componential theory of creativity and innovation in organisations**

This research employed Amabile's (1988) componential theory of creativity and innovation in organisations. The justifications for selecting this theory are discussed in detail in Chapter 2. Amabile (1997) demonstrated that the theory incorporates individual and organisational factors that influence employees' creativity at work. However, Amabile and Pratt (2016) stated that one limitation of the componential theory of Amabile (1988), as implemented in the work context, is that it concentrates exclusively on internal features within individual and organisation. It fails to contain external features outside the organisation. Thus, Amabile and Pratt (2016) added external factors to the new model.

There is a dearth of creativity literature that investigates factors external to organisations, such as family and friends (Madjar, Oldham & Pratt, 2002; Horng & Lee, 2009). However, there are several studies that focus on the influence of physical environment on employees' creativity within organisations (e.g., Vithayathawornwong, Danko & Tolbert, 2003; Dul, Ceylan & Jaspers, 2011; Bryant, 2012; Boënné, 2014). Oliver (1997) argued that an organisation's institutional context comprises its internal culture and the broader influence of the state, society and the interfirm relations that describe socially adequate economic behaviour.

Thus, this study aims to fill this gap and examine the influence of other significant external variables that cover aspects outside organisational factors that may influence employees' creativity. Supporting with above discussion and since the current study focuses on public sector organisations, the literature shows that public-sector organisations are influenced by both internal and external factors. Perry and Porter (1982) categorised the factors that influence motivation in public organisation: individual, job, work environment and external environment characteristics. The authors clarified that the external environment could be divided into numerous categories such as socionormative, political, demographic, economic and technological.

Therefore, there is a need to identify whether government regulation and incentives, as external variable of the organisational context, influence employees' creativity. This study is among the first to overcome the limitation of the theory to directly investigate the influence of government regulations and incentives on employees' creativity in the Dubai government context.

Moreover, in terms of the mediating role of organisational motivation to innovate, work motivation is described as 'the set of internal and external forces that initiate work-related behavior, and determine its form, direction, intensity, and duration' (Pinder, 1998, cited in Ambrose & Kulik, 1999, p. 231).

The integration of motivation and creativity began during the 1990s (Ambrose & Kulik, 1999). Hartmann (2006) considered motivation a major force through which employees' allocate effort efforts to introduce and execute fresh ideas. Indeed, both intrinsic and extrinsic motivational states have dominated scholarly concentration



(Gong et al., 2017). Thus, over the past 30 years, research on creativity antecedents and underlying motivational mechanisms have been published in high-impact journals at a growing rate, providing valuable knowledge for scholars and practitioners (Liu et al., 2016).

Hong, O'Neil and Peng (2016) mentioned that motivation is a complicated psychological phenomenon for which there is no single comprehensive theory or definition. For example, the componential model of creativity and innovation in organisations (Amabile, 1988), which is the foundation for the current study, contains two types of motivation: intrinsic task motivation and organisational motivation to innovate. Comparing the abovementioned types of motivation, Amabile (1983, cited in Amabile 1997) stated that 'intrinsic motivation is conducive to creativity, but extrinsic motivation is detrimental' (p. 21). Later, she added some conditions to extrinsic motivation: 'informational or enabling extrinsic motivation can be conducive, particularly if initial levels of intrinsic motivation are high' (Amabile, 1983, p. 119). Additionally, as a direction for future research, Amabile and Pratt (2016) suggested the improvement and examination of organisational innovation, which includes resources, organisational motivation to innovate and management practices. The authors stated that the motif at the organisational level is the basic orientation of the organisation towards innovation.

Indeed, Amabile (1997) stated that laboratory research has indicated a positive association between intrinsic motivation and creativity. These extrinsic motivators included 'promised reward, praise, critical feedback, deadlines, surveillance, or specifications on how the work is to be done' (p. 22). Several studies demonstrated that extrinsic motivation had a positive impact on creativity. These motivations include reward (e.g., Eisenberger & Rhoades, 2001; Byron & Khazanchi, 2012; Malik, Butti & Choi, 2015), external evaluation (e.g., Amabile, 1979) and informational components of evaluations (e.g., Shalley, 1995).

Thus, based on Amabile and Pratt's (2016) revised model, the current thesis aims to examine the direct and mediating effects of organisational motivation to innovate for several reasons:

First, theoretical justification: According to Amabile and Pratt (2016), individual intrinsic task motivation is analogous to organisational motivation to innovate. Prior studies have focused only on intrinsic task motivation. Thus, this research aims to empirically examine the latest changes in the model, as no studies were found that examined the role of organisational motivation to innovate as a summated variable on employees' creativity.

Second, contextual justification: Amabile et al. (1996) argued that the social workplace environment can affect the level and frequencies of employees' creativity. Currently, the Dubai government's initiatives aim to provide employees' with with extrinsic motivations to enhance creativity. These initiatives are aligned with literature, in which extrinsic motivation is sufficient to boost creativity. For instance, Byron and Khazanchi (2012) pointed out that supplying incentives to encourage and motivate creativity can enhance individual creativity. Further, a fundamental tenet of economics is that people react to incentives (Benabou & Tirole, 2003). Eisenberger and Cameron (1996) asserted that rewards for creativity can lead to a generalised increase in creativity. Finally, Fernandez (2011) pointed out that extrinsic rewards can be useful motivational techniques in the public sector.

Thus, since Dubai is a new context in which public-sector organisations adopt several practices of the private-sector organisations, creativity studies were rarely empirically examined. This thesis aims to assess whether organisational motivation to innovate, as an extrinsic motivator, influences employees' creativity directly or indirectly.

### **1.9.2 Creativity in public-sector organisations**

Berman and Kim (2010) illustrated that although the significance of creativity is commonly acknowledged, the current literature does not comprise much mention of strategies to harness this potential in public administration. Most studies into creativity were conducted in the private sector (e.g., Amabile, 1988, 1997; Oldham & Cummings, 1996; Amabile & Grysiewicz, 1989; George & Zhou, 2001; Foss, Woll & Moilanen, 2013; Eder & Sawyer, 2008), whereas few studies focused on the public sector (e.g., West & Berman, 1997; Rangarajan, 2008; Park et al., 2014). Consequently, additional empirical research is desperately required in the public sector. Thus, this study aims to examine if creativity practices adopted by public

sector organisations that applies NPM principles show similar results as in private sector organisations or not.

As a future research direction, Rangarajan (2008) suggested research in the public sector to assess the function of contextual, structural and other creativity-related factors. This information can be gathered using established survey instruments such as KEYS for creativity. This study, as discussed in Chapter 6, uses KEYS to examine the work environment related to employees' creativity and innovation. Therefore, this research follows Rangarajan's suggestion to fill in the gap in the creativity literature in public sector. Finally, there is a need for additional empirical studies that examine factors that influence employees' creativity in Arab countries, particularly in public-sector organisations.

### **1.9.3 Creativity in Asia and Arab countries**

Niu and Kaufman (2013) illustrated that most creativity theories have been developed in Western countries, particularly in the US. Lubart (1990) asserted that the Oriental and Western perspectives on creativity are different. Thus, Shalley, Zhou and Oldham (2004) clarified that findings from Western literature might not be applicable to Asia because based on current theories, employees' creativity is related to social-contextual factors that vary according to organisational context. Hence, some studies have compared the impact of cultural difference on creativity. For instance, Yamada's (1991) conceptual research aimed to illuminate creativity barriers in Japan. The author agreed that sociocultural aspects related to creativity in Japan differ from those in Western countries, particularly in terms of language, education system and human resources management practices. Thus, all these factors are considered creativity obstacles in Japan. Moreover, Rice (2006) argued that research into creativity-building practices in countries other than the US usually focuses on advanced economies such as Europe and Japan.

In terms of Arab countries according to Muna (1980, cited in Mostafa, 2005, p. 25), Arab societies share values and an inner likeness. However, Klein, Waxin and Radnell (2009) stated that findings on OC in Arabic countries are limited.

Fadol and Sandhu (2011) cited Hofstede's (1980) work as a key contributor to the cross-cultural comparison literature. Hofstede's (1980, cited in Fadol & Sandhu,

2011, p. 111) study of cultural values included Saudi Arabia, Kuwait, Egypt, Lebanon, Libya, Iraq and the UAE. The results showed that Arab countries were the opposite to Western cultures, as they scored highly in power distance, uncertainty avoidance, collectivism and masculinity.

Mostafa (2005) stated that limited studies have investigated creativity and innovativeness in Arab countries. Creativity literature features just a few studies conducted in Arabic countries, such as the UAE (Zayed & Shaheen, 1995; Politis, 2005; Politis & Politis, 2010), Egypt (Rice, 2003, 2006; Mostafa, 2005; Mostafa & El-Masry, 2008), and the Kingdom of Saudi Arabia (Iqbal, 2011; ElMelegy et al., 2016).

#### **1.9.4 Creativity in Dubai public-sector organisations**

Park et al. (2014) stated that every country has its own culture and national government style. Currently, all Dubai government organisations focus on creativity but few studies have investigated creativity in the UAE context (e.g., Politis, 2005, 2015; Politis & Politis, 2010; Dayan, Zacca & Di Benedetto, 2013).

Therefore, this study will contribute to the creativity research literature through the investigation of the influence of government regulations and incentives on employees' creativity as a variable that has never been examined in creativity studies. It will also examine whether organisational motivation to innovate has a mediation role between various factors and employees' creativity. Finally, the study will be conducted in Asia, specifically in Dubai in which, as discussed earlier, public sector organisations adopt several principles from private organisation such as focusing on creativity. As few studies in non-Western countries have examined the NPM execution in their public sector organisations (Jingjit & Fotaki, 2010). Table (1) depicts the summary of the key studies related to the discussed research gaps

**Table 1.1 Summary of studies related to research gaps**

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
1	Amabile and Pratt (2016)	To revisit basic assumptions of the componential model of creativity and innovation in organisations (Amabile, 1988).	Conceptual paper.	The authors extended Amabile's (1988) model and developed a new model called the dynamic componential model of creativity and innovation in organisations.	<p>The authors agreed that external environment , outside the organisation, influences employee creativity.</p> <p>The authors introduced four new constructs into the model: 1) sense of progress in creative idea development; 2) meaningfulness of the work to those carrying it out; 3) affect; and 4) synergistic extrinsic motivation.</p>	<p>The revisited model has not been empirically examined. There is a trend that believes that employee creativity is also influenced by external factors outside the organisations.</p> <p>Unlike Amabile's (1988) model, the extended model prioritises extrinsic motivation. Both models considered intrinsic task motivation</p>

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
						<p>analogous to organisational motivation to innovate. Most studies have examined the direct and indirect impact of intrinsic task motivation on employee creativity rather than organisational motivation to innovate. Thus, there is a need to empirically examine the direct and indirect impact of organisational motivation to</p>

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
2	Dul, Ceylan and Jaspers (2011)	To investigate the influence of the physical work environment on the creativity of knowledge workers, compared with the impact of creative personality and the social-organisational work environment.	Qualitative methodology (questionnaire survey).	The following factors affect employees' creative performance; creative personality, social-organisational work environment and the physical work environment.	The study supports suggestions made by scholars such as Amabile et al. (1996) regarding the influence of physical environment on enhancing employee creativity.	innovate as summated variable on employees' creativity. The authors constructed new indices for measuring the following variables; social-organisational, and the physical work environment, which might lead to possibility for measurement error in the data. The study focused on small and medium-sized

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
3	Madjar, Oldham and Pratt (2002)	<p>1) To study the associations between creative performance and the degree to which the workforce received encouragement for creativity from work (supervisors/coworkers) and non-work(family/friends) sources.</p> <p>2) To investigate whether workforce mood mediated</p>	Quantitative methodology (questionnaire).	<p>Work and non-work encouragement have a positive relationship with employees' creative performance.</p> <p>Workers' positive mood mediated the above relationship.</p> <p>Workers who are categorised as less-creative personalities react most positively to non-work support.</p>	<p>This is among the limited studies to contribute to creativity literature by indicating the influence of employees' family members and friends on workplace creativity.</p> <p>This study was the first to empirically establish the</p>	<p>enterprises (SMEs). There is a need for new research to examine public-sector organisations to generalise the findings.</p> <p>The study was conducted in a European private-sector organisation. Thus, there is a need for further studies in the Asian public sector.</p>



Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
4	Horng and Lee (2009)	<p>the support–creativity association and if creative personality character moderated these relationships.</p> <p>To discover and analyse external environmental factors that affect the progress of culinary artists’ creativity.</p>	Qualitative methodology (in-depth interviews and content analysis).	<p>There is a clear association between the creativity of culinary artists and environment factors: supportive family, open and advanced society, and culture.</p> <p>Negative environment factors that influence culinary artists’ creativity are organisational hierarchies, the constraints of tradition, limits imposed by the traditional mentor system, the</p>	<p>association between positive mood and creativity.</p> <p>This study is one of few that contribute to creativity literature by indicating the influence of employees’ family and friends on workplace creativity.</p> <p>The sample included artists from different places: the US, Singapore and Taiwan.</p>	<p>The authors used qualitative methodology. There is a need for future research that uses mixed methods, as most creativity studies only use qualitative methodology.</p>

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
5	Berman and Kim (2010)	To illustrate the current practices of creativity management as a strategy used in the Seoul Metropolitan Government to increase initiatives by changing the present reward, management and training systems.	A multimethod study including visits, interviews and mail surveys of employees and managers.	tradition of ‘holding back a trick’, and the traditional prioritisation of academic or scholastic achievement. Creativity management is a useful approach for promoting novel ideas and solutions and expanding innovation practices in public organisations. During a two-year period, 13 per cent of employees’ and managers’ ideas were implemented and the percentage of officials who currently consider their divisions as innovative doubled.	It provided information about new practices in a region outside the US. A mixed method approach was used to collect the data.	The focus was jump-starting innovation rather than creativity management as a procedure to foster higher levels of innovation permanently. There is need for other studies in different regions, such as Asia.
6	Heinzen (1990)	To combine the componential model of	Not mentioned.	The partnership resulted in the creation of the	The developed model allocated tasks for	No details were provided about the

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
7	West and Berman (1997)	<p>creativity and Quinn and Rohrbaugh's (1983) competing values framework and explain how contrasting leadership roles within a single organisation creates organisational creativity in the New York government.</p> <p>To investigate processes through which senior management teams in local US governments create and execute new ideas.</p>	Quantitative methodology (survey).	<p>Public Service Training Program.</p> <p>Senior management teams differ in administrative creativity.</p> <p>Administrative creativity is considerably connected with the use of productivity development strategies.</p> <p>There is a positive relationship between administrative cultures of</p>	<p>internal coordinators to encourage creativity and productivity as a component of the creativity model.</p> <p>The study showed the significance of administrative creativity among local government administrators.</p>	<p>methodology or sample.</p> <p>The study did not illustrate factors that prompt senior management teams to perform with administrative creativity. Thus, there is a need for further study to fill this gap.</p>

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
				organisation and administrative creativity.		
8	Rangarajan (2008)	To observe creativity in government using a sample of government innovation award winners.	Secondary data and interviews.	The findings indicated that proactive creativity was demonstrated more often than responsive, expected and contributory creativity.	Contributed in terms of creativity in public-sector organisations.	The study only included organisations known for their creative potential.
9	Coveney (2008)	To assess employee perceptions of organisational climate for creativity in a United Kingdom (UK) public library service.	Mixed method (qualitative in-depth interviews) and quantitative (survey).	The following factors had positive impact on employee creativity: organisational and supervisory encouragement, work group support, freedom, sufficient resources and	In-depth interviews provided additional positive factors that encouraged employee creativity and were not explicitly developed in the KEYS questionnaire:	The research did not investigate specifically the impact of use of new technologies on employees creativity. It did not

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
10	Kim and Yoon (2015)	To study the influence of senior managers' transformational leadership and the climate for creativity on employees' opinions on the culture of innovation in the context of public management reform in the Seoul Metropolitan Government.	Quantitative methodology (survey).	<p>challenging work. Conventional skills impeded creativity.</p> <p>There is a positive relationship between senior managers' transformational leadership and innovation culture. Climate for creativity is significantly related to employees' perceptions of a culture of innovation. There is a variance in the extent to which the workforce perceives a</p>	<p>small structure, training and the hiring of creative humans.</p> <p>The sample size is big (1,576 responses).</p>	<p>investigate the potential influence of external factors (outside the organisations) on employees' creativity.</p> <p>The case study was conducted on one local government, which may limit external validity.</p> <p>The Seoul Metropolitan Government possess a high degree of financial independence compared to other local governments</p>

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
11	Yamada (1991)	To clarify some sociocultural barriers for creativity in the Japanese context.	Conceptual paper.	<p>culture of innovation among agencies.</p> <p>Supervisors' transactional leadership still matters in promoting a culture of innovation in the context of local government.</p> <p>The key sociocultural creativity barriers in Japan are language, education system and human resources management practices.</p>	<p>The study supported the existed literature; culture influences the creativity of citizens.</p> <p>It-met the objectives of the research.</p>	<p>in Korea, which may limit applicability.</p> <p>Not examined empirically.</p>
12	Iqbal (2011)	<p>To investigate the existing effort towards organisational creativity and innovation in Saudi Arabia.</p> <p>To discover creativity and innovation obstacles in</p>	Conceptual paper.	<p>It introduced a model for innovation in Saudi Arabia, drawn from the experience of top innovation-oriented countries. The components are: 1)</p>	<p>The study proved that both internal and external factors; within organisation and external ones, influence creativity and innovation. This</p>	<p>The study was not examined empirically.</p>

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
13	Park et al. (2014)	<p>terms of organisational effectiveness.</p> <p>To explore the influence of three factors: 1) the workforce's openness to change; 2) knowledge-sharing intention; and 3) knowledge-creation practice on workforce's creativity.</p>	Quantitative methodology (online survey).	<p>government commitment, support and investment; 2) education industry linkage, HRD, R&amp;D and international benchmarking; and 3) infrastructure support, technology transfer and management flexibility.</p> <p>There is a strong association between openness to change and knowledge-creation practice, knowledge-sharing intention and knowledge-creation practice, and between knowledge-creation practice and creativity.</p> <p>There is no direct</p>	<p>expanded the literature, particularly regarding government commitment as a related factor.</p> <p>This was easy for readers to understand. The aims, objectives and direction for future research are clear.</p>	<p>This study is based on Amabile's (1998) theory: individual creativity is based on three elements: expertise, motivation and creative-thinking skills. However, the authors only considered two</p>

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
				<p>association between openness to change and creativity and between knowledge-sharing intention and creativity. There are strong mediating effects of knowledge-creation on the relationships between openness to change and creativity and between knowledge-sharing intention and creativity.</p>		<p>elements: motivation and expertise. No justifications were provided for eliminating creative-thinking skills as a variable.</p>



### **1.9.5 Research question**

The research question, based on the scholarly and contextual gaps as identified above, is:

What is the impact of ‘organisational motivation to innovate’ on the relationship between three antecedent factors: a) individual creativity components factors; b) determinants of work context factors; and c) government regulation and incentives, on the outcome, ‘creativity among employees’ in Dubai government organisations?

This research question is divided into three additional inquiries that are more specific:

- 1) What is the impact of organisational motivation to innovate on the relationship between individual creativity components factors and employees’ creativity among employees in Dubai government organisations?
- 2) What is the impact of organisational motivation to innovate on the relationship between determinants of work context factors and employees’ creativity among employees in Dubai government organisations?
- 3) What is the impact of organisational motivation to innovate on the relationship between government regulation and incentives and employees’ creativity among employees in Dubai government organisations?

### **1.10 Contribution from research**

The benefits of this research comprise theoretical and practical contributions. The theoretical contributions are the extension of the componential theory of creativity and innovation in organisations (Amabile, 1988) through the examination of the impact of a new variable (government regulation and incentives) on employees’ creativity in a new context and the mediating effects of organisational motivation to innovate between the various factors and employees’ creativity. Additionally, this study might be considered foundational research for other researchers who are interested in this field in a new regional context, especially in the UAE. Further, it will contribute to knowledge by formalising a framework that determines the required conditions to enhance employees’ creativity. In terms of practical implications, it will inform relevant practitioners and decision-makers about the significance of different factors in developing and nurturing employee creativity in public-sector organisations.

## **1.11 The significance of the study**

1) This thesis is among the first studies to extend Amabile's (1988) componential theory of creativity and innovation in organisations by examining the potential impact of government regulations and incentives as a new external factor never been examined, on employees' creativity. Also, it is the first to introduce and evaluate the mediating role of organisational motivation to innovate between three antecedent factors: individual creativity components factors, determinants of work context factors, and government regulation and incentives, on the outcome, creativity among employees in Dubai government organisations and employees' creativity.

2) It develops and validates a new framework for related factors that influence employees' creativity in a new region. Further, it is among the first studies to investigate the antecedents and outcomes in a context that applies NPM principles, Dubai government organisations, that has never been studied. As discussed earlier, Dubai government organisations are increasingly adopting many principles (such as creativity) of private-sector organisations. Extensive reforms have taken place in public-sector organisations in different countries (Bartlett & Dibben, 2002; Narayan & Singh, 2014), such as NPM, which adopts successful private-sector practices (Jas & Skelcher, 2014). However, few studies have investigated the application of NPM in non-Western public-sector organisations (Jingjit & Fotaki, 2010).

## **1.12 Structure of the thesis**

This thesis contains nine chapters. Chapter 1 is an introduction, while Chapter 2 reviews the related literature, focusing on the historical background of creativity, identification of main themes in creativity literature, creativity in work contexts and the factors that influence employees' creativity. Chapter 3 focuses on the methodology of the qualitative cycle of research design and Chapter 4 presents the findings of the qualitative research cycle. Chapter 5 defines the concepts used, and explores the developed conceptual framework and propositions. Chapter 6 presents the mixed method approach, which is used in the empirical study, and focuses more on the quantitative methodology applied in Cycle 2 of the research design. Chapter 7 presents the analysis and findings of the quantitative cycle of the research design, while Chapter 8 outlines the findings of the quantitative cycle. Finally, Chapter 9

discusses the main implications of the findings, the central limitations and the directions for further research.

### **1.13 Conclusion**

This chapter has highlighted that few studies have extended Amabile's (1988) componential theory of creativity and innovation in organisations by investigating the influence of external factors, outside the organisation, on employees' creativity in the workplace. In addition, there is lack of studies have examined the direct and indirect (mediating) role of organisational motivation to innovate. Further, empirical studies related to creativity of employees working in public sector in Asia (and particularly in the Dubai government) are limited. Examining the impact of NPM practices in non-Western countries is rare in the literature; few studies have empirically tested whether applying NPM in the public sector leads to the same results as it does when applied in private-sector organisations.

Accordingly, further investigation is needed to address these gaps in the body of literature and the Dubai government context by examining the mediating role of organisational motivation to innovate on the relationship between individual creativity components factors, determinants of work context factors and external factors on creativity among employees.

A mixed method approach based on interviews and survey questionnaires was used to answer the research question. Two cycles were employed. In the exploratory phase, interviews were conducted with key decision-makers in three Dubai government organisations to gather information about creativity and its influencing factors, while Cycle 2 used a survey questionnaire to identify factors that influence employee creativity in three Dubai government organisations.

### **1.14 Summary**

This chapter has introduced the basics of this thesis and presented an overview of the research. The significance of creativity was explored providing a clear motivation for conducting this study in the UAE public sector in general, and in the Dubai government specifically. The aims, objective, research gaps, thesis structure and the significance were also discussed, and the research question was addressed. In addition

to introducing main concepts, the conclusion summarised the key concepts covered in the chapter.

Chapter 2 will discuss the literature review related to public-sector organisations, creativity and its influencing factors in the workplace.

## **Chapter 2: Literature Review**

### **2.1 Introduction**

Chapter 1 presented a brief overview of the background to the current thesis.

This chapter presents a comprehensive literature review and is divided into three main sections. The first section provides an overview on the nature of public and private-sector organisations. As the research for this thesis was conducted in public-sector organisations, more details about this sector (particularly government organisations) and NPM will be explored. The second section focuses more on creativity as part of workplace management practices. Initially, the historical background of creativity will be introduced, main themes in the creativity-related literature will be illustrated and creativity in the work context will be discussed. The focus will then turn to factors that influence employees' creativity in the workplace. Next, the focus turns to innovation, therefore, the history of innovation will be explored, innovation on the workplace will be analysed. Creativity and innovation will be illustrated in terms of differentiating their nature and identifying any relationships between them. Then, prominent creativity-related theories, instruments used to measure workplace climate, and factors influencing creativity in organisational settings will be explored. Key findings from the literature will be highlighted and a summary of the overall chapter will be presented.

As discussed in Chapter 1, this thesis aims to explore creativity within Dubai government organisations and to assess whether organisational motivation to innovate acts as a mediator between the different factors and employees' creativity.

### **2.2 Public-sector organisations v. private-sector organisations**

Hvidman and Andersen (2014) pointed out that in the real world, organisations are frequently characterised by a range of structural forms combining different features of public and private sectors. However, likenesses and distinctions between public and private sectors have actively been argued in the literature (Scott & Falcone, 1988; Perry & Rainey, 1988; Rainey & Bozeman, 2000; Boyne, 2002; Hvidman & Andersen, 2014). A main difference is ownership. According to Boyne (2002),

entrepreneurs or shareholders own private organisations, whereas members of political community collectively own public-sector organisations. Rainey and Bozeman (2000) examined key streams in the research literature comparing public and private organisations. According to the authors, private and public sectors differ in terms of:

- Goal complexity and goal ambiguity. It has been argued that public organisations have greater goal complexity and ambiguity than private organisations do. This is due to public organisations' shortage of sales and profit indicators and incentives. Also, complications arise because of political oversight and interference from various authorities and interest groups; and value-laden and sharply conflicting mandates.
- Organisational structure. Some empirical studies found that public organisations demonstrate a higher degree of formalisation, or correlated dimensions such as 'red tape'.
- Formalisation of personnel and purchasing processes. Public and private organisations vary more robustly on human resources procedures, purchasing processes and administrative procedures, which are set by central administrative authorities and commanded by system-wide mandates.
- Work-correlated attitudes and values, work satisfaction, incentive, estimation of rewards, and work results. Currently, there is a tradition of analysing variations between human resources and managers in terms of work-correlated attitudes and values, as it has been concluded that work satisfaction is lower among employees in the public sector.

Previous empirical studies have consistently showed that respondents who work in the public sector, particularly those at higher professional and managerial levels, place higher value than their private-sector counterparts do on rewards and motives. Further, Guthrie and English (1997) highlighted the other differences. For example, most public-sector organisations do not follow the market model for the distribution of goods and services, and revenue is not an indicator of performance. Financial information embodied in an operating statement and balance sheet do not determine whether government units have attained their goals. Conversely, in the private sector,

goals are measured fundamentally in terms of profit, market share and return on equity and assets, and are frequently mentioned in financial terms.

Several studies have attempted to empirically investigate these sectoral differences with respect to different managerial practices by examining the same research topic in both sectors (e.g., Wise, 1999; Groeneveld & Verbeek, 2012; Luring & Selmer 2013; Hvidman & Andersen, 2014). For example, Wise (1999) compared the attitudes and behaviours of managers in central government with others working in the business sector. Additionally, Wise evaluated the extent to which managers were ready to adopt pay policy reforms. One thousand top managers and executives from both sectors who were responsible for setting pay participated in this study. The results indicated significant differences between central government and private-sector managers; those working in central government appeared to use slightly larger average pay differentials than others did. In terms of the factors that influenced the extent of reform implementation in private-sector organisations, entity size and income level were the most significant. For central government managers, income status was the most important. Additionally, Luring and Selmer (2013) compared the work outcomes and creativity of self-initiated expatriates in the private sector and their public-sector counterparts. The findings showed that performance and effectiveness were higher among private-sector employees than they were among public-sector workers. Hvidman and Andersen (2014) investigated whether performance management has the same impact on results in similar public and private associations in lower-performing secondary schools in Denmark. The findings indicated that management matters are different in public and private organisations.

As this thesis is conducted in public-sector organisations, more details about this sector, particularly the impact of government on employee performance, are discussed in Section 2.3.

### **2.3 Public-sector organisations**

According to Simpson (2013), the term public sector is frequently synonymous with public administration, public service and government entities. Broadbent and Guthrie (1992) defined public sector as ‘the part of a nation’s economic activity that is traditionally owned and controlled by government’ (p. 3). Borins (2001) explained

that legislative appropriations fund public-sector organisations, and that shared ownership does not exist in this sector. Finally, employee salaries are fixed and bonuses are limited compared to bonuses awarded in private organisations.

Broadbent and Guthrie (2007) specified that public services are ‘those activities that are enshrined within the notion of public good or service based on universal access for all citizens, rather than commodities sourced in the private market’ (p. 132). The authors clarified that it is assumed that public services must be obtainable for all members of society, and provided in an equitable fashion.

Broadbent and Guthrie (1992) identified the main domains of any public sector as central government, local government, PBE and PIS. French and Emerson (2014) argued that, based on prior studies, the public sector consists of human resources of federal, state and local governments, public corporations, and other bodies offering extended public services (e.g., education and health care). Further, the authors elaborated that the public sector might attract employees who are concerned with job security, career tenure and retirement benefits, which are often connected with government employment. There are also individuals who display behaviours and actions that are not encouraged solely by extrinsic motives and self-interest.

According to Parker and Bradley (2000), the characteristics of public organisations closely comply with Weber’s legal–rational model (Weber, 1984, cited in Parker & Bradley, 2000, p. 130), which described bureaucracy as hierarchical, rule enforcing, impersonal in the application of laws and composed of members with specialised technical knowledge of rules and procedures.

Boyne (2003) stated that public services own tangible aspects (e.g., quantity, speed of delivery and effectiveness) that are likely valued by constituencies, even if the valuations vary between groups or over time. Thus, Bryson, Ackermann and Eden (2007) argued that a central key to success for public-sector organisations is recognising and building strategic capabilities to generate the greatest public value for main stakeholders at a convenient cost. However, Hood et al. (1998, cited in Boyne, 2003, p. 369) pointed out that public service providers are not free to decide their own procedures and strategies but instead should perform within policy constraints determined by higher political authorities. Luring and Selmer (2013) explained that



public-sector organisations fulfil objectives forced upon them by stakeholders through the political process, rather than being chosen by the public managers or the workforce themselves. Groeneveld and Verbeek (2012) shared a similar viewpoint, stating that public-sector organisations are under political pressure to develop ethnic minority representation and identify policy measures to fulfil this obligation.

Since public service motivation could affect provided services (Andersen, Kristensen & Pedersen, 2013), several investigations aimed to recognise factors that influence the performance of public-sector organisations (e.g., Perry & Porter, 1982; Boyne, 2003; Petrovsky, James & Boyne, 2014). Perry and Porter (1982) divided the factors that influence motivation in public organisation into categories: individual, job, work environment and external environment. The authors clarified that the external environment could be divided into numerous categories, such as socionormative, political, demographic, economic and technological. Due to the lack of comprehensive and established theories related to service improvement, Boyne (2003) reviewed 65 empirical studies on the determinants of public service performance. The five sources identified resources, regulation, market structure, organisation and management as influencing factors in the public sector. The analysis showed that additional resources and better management were the most important sources for developing public service organisations.

Based on above discussion, that factors that influence public-sector organisations are classified into two types: internal (within the organisation) and external (outside the organisation).

## **2.4 New public management**

Jurisch et al. (2013) argued that public-sector organisations require continual change. The authors clarified that to tackle existing financial, social and political challenges, public-sector organisations should rethink, adjust and change their fundamental service processes.

Hence, according to Parker and Bradley (2000), since the 1980s, management theories have suggested a framework of management designed to overcome the limitations of

the traditional bureaucratic model of public management. Further, this framework would provide a foundation for increased productivity in public services.

Narayan and Singh (2014) pointed out that public-sector reform is not a new phenomenon, as governments in different countries have experience with a great array of management reforms (Walker & Boyne, 2006). Additionally, the literature on public management reforms indicates that radical changes related to values, work and organisation have taken place or are still occurring (Ackroyd, Kirkpatrick & Walker 2007). Moreover, Andrews et al. (2008) mentioned that reforms in the public sector can be categorised into two broad types: switches in the external context of public organisations and switches in the internal features of the organisations themselves. The influence of these reforms can, in turn, be either complementary or contradictory.

According to Sluis, Reezigt and Borghans (2017), compared with the private sector, the public sector is described as less effective and efficient, and consequently, expensive. To change this, policymakers have introduced private-sector concepts and methods into the public sector, like outcome-based accountability and market-driven management.

Thus, NPM is a kind of reform movement in public-sector organisations (Groot & Budding, 2008). According to Ikeanyi (2016), NPM is defined as ‘a set of reform paradigms introduced by many Anglo-Saxon countries starting from the late 1970s. At some point, its principles became such a benchmark for gauging administrative economy, efficiency and effectiveness that, from the 1980s, it became attractive to most developing countries’ (p. 563). Jingjit and Fotaki (2010) stated that NPM began in Anglo-Saxon nations and have since been implemented in other countries. Thus, NPM is now a global phenomenon. However, limited studies have investigated the challenges of NPM execution in non-Western public-sector organisations. Jas and Skelcher (2014) elaborated that during the 1980s, different private-sector practices and concepts were introduced to public-sector organisations across the world and became generally identified as NPM. However, according to Sluis, Reezigt and Borghans (2017), NPM reforms were applied to diverse degrees and with diverse emphases. For example, Pérez-López, Prior and Zafra-Gómez (2015) argued that NPM literature is thorough and covers numerous fields, such as accountability,

outsourcing, performance management, decentralisation, public–private partnerships, e-government and collaborative networks.

The objective of NPM is to enhance efficiency and effectiveness to decrease costs and develop performance (Trotta et al., 2011) by applying managerial techniques (Parker & Bradley, 2000) and market disciplines (Haworth & Pilott, 2014) used in private-sector organisations. Thus, NPM reforms might affect strategy processes in public organisations by influencing both their formalisation and centralisation at the organisational level in addition to individual outcome (Williams, Rayner & Allinson, 2012). Moreover, Andersen (2008) emphasised that NPM concentrates more on public service outcomes.

Boyne (2002) stated that managers in public-sector organisations must seek to emulate the successful practices of private-sector organisations in areas such as TQM, devolved management, performance-related pay and management by objectives.

According to Andersen (2008), extensive resources have been devoted to reforming the public sectors of many countries around the world. Thus, several countries have adopted NPM in their public-sector organisations, including Denmark (Andersen, 2008; Hansen & Jacobsen, 2016), Italy (Trotta et al., 2011), Thailand (Jingjit & Fotaki, 2010), the UK (William, Rayner & Allinson, 2012; Ikeanyibe, 2016), the Netherlands (Verhoest, Verschuere & Bouckaert, 2007; Sluis, Reezigt & Borghans, 2017), Australia (Pick & Teo, 2017), Nigeria (Ikeanyibe, 2016) and Spain (Alonso, Clifton & Díaz-Fuentes, 2015; Pérez-López, Prior & Zafra-Gómez, 2015).

These findings are particularly significant within the context of Dubai public-sector organisations, which have endured several reforms within the public sector due to the emphasis of the Dubai government to push towards building a knowledge-intensive and service-oriented economy. Thus, public-sector reforms, including creativity investments, provide a unique context in which to examine the key research questions proposed in this study.

## **2.5 Government**

As mentioned earlier, according to Simpson (2013) the term public sector is frequently synonymous with public governmental entities. Thus, government is a part of the

public sector (e.g., Broadbent & Guthrie, 1992; French & Emerson, 2014) because it aims to provide certain goods or services (Hoppe & Schmitz, 2010) and seeks efficient techniques to develop and deliver the desired public services (Boyne, 2003).

Bartlett and Dibben (2002) stated that over the past decade, extensive reforms have taken place in local government. Thus, new structures and practices have been introduced to improve efficiency and performance. This is why research on local government has frequently concentrated on political and institutional changes at the local level (Laffin, 2009).

Stakeholder literature considered government a crucial stakeholder for organisations. According to Savage et al. (1991), stakeholders 'include those individuals, groups, and other organisations who have an interest in the actions of an organisation and who have the ability to influence it' (p. 61). Most stakeholder studies considered government a force that affects organisations (e.g., Savage et al., 1991; Mitchell, Agle & Wood, 1997; Henriques & Sadosky, 1999; O'Higgins & Morgan 2006). Indeed, O'Higgins and Morgan (2006) classified government as one of an organisation's primary stakeholders because it presents infrastructure for the organisation's operations. According to Savage et al. (1991), primary stakeholders 'are those who have formal, official, or contractual relationships and have a direct and necessary economic impact upon the organisation' (p. 62).

Additionally, other studies identified government as one of the most vital stakeholders that imposes a remarkable amount of pressure on private-sector organisations in applying particular managerial practices (e.g., Delmas, 2002; Fraj-Andrés et al., 2009; Zailani et al., 2012; Chang, Li & Lu, 2015). However, a defining feature of public-sector organisations is the existence of regulatory restrictions imposed by government (Bozeman, 1987, cited in Andrews et al., 2008).

Unlike in the private sector, Boyne (2003) reviewed relevant literature and clarified that limited empirical studies have investigated the impact of government regulation on the performances of public-sector organisations (e.g., Molnar & Rogers, 1976; D'Aunno et al., 1991; Wolf, 1993; Andrews et al., 2008).

This review was the latest performed in this field and no other new related studies were found. Thus, there is a need for further studies to understand the impact of government regulation on public-sector organisations.

## **2.6 Historical background of creativity**

The term creativity has existed in writings of ancient Greece and Rome philosophers (Treffinger et al., 2002). According to Becker (1995), the foundations of creativity were investigated during the nineteenth century, as the authors focused on addressing five main questions:

- 1) 'How is creativity defined?
- 2) Who has creativity?
- 3) What are the characteristics of creative people?
- 4) Who should benefit from creativity?
- 5) Can creativity be increased through conscious efforts?' (p. 215).

In the modern era, concerns about creativity were evident in the mid-twentieth century (Treffinger et al., 2002), although many outstanding studies before 1950 related to both creative talents and creative individuals were investigated (Runco, 2004). The major changes in creativity research occurred during the 1950s; Guilford (1950) was a pioneer in creativity research field. He was the first individual in the modern era to highlight this issue. In 1950, as president of the APA, he declared at the annual meeting that just 186 of 121,000 entries in *Psychological Abstracts* dealt with the notion of creativity (Alkahtani, 2009).

By 1956, the number of researchers publishing in the creativity field had doubled. Since then, *Scientific Creativity* was published with abstracts of the first three biennial Utah-NSF conferences, about 400 references post-1940 (mostly of an experimental study character) were found (Barron & Harrington, 1981). In 1965, the comprehensive bibliography of the Creative Education Foundation (Razik, 1965, cited in Barron & Harrington, 1981), which contains articles and books outside the professional field of psychology, included 4,176 references, almost 3,000 of which were dated after 1950. This exponential increase has tapered off to a stream of about 250 new theses, articles or books each year since 1970.

During 1950–1980, there were a limited number of big questions on which most researchers concentrated. These centred on creative personality and creative-thinking methods (Hennessey & Amabile, 2010).

Scholars regarded individual characteristics as a component of the wider framework describing creativity in the work context (Politis, 2005; Park et al., 2014). During the late 1980s until the mid-1990s, studies on employee creativity were introduced as a new sub-area (Zhou & Shalley, 2003).

Since the 1990s, extra emphasis has been placed on the social psychology of creativity, and a virtual explosion of areas, perceptions and methodologies have been introduced in the literature. However, few of the significant big questions have been pursued by a critical mass of creativity academics. In many respects, researchers' recognition of the psychology of creativity has been amazingly sophisticated. However, in the work context, research was often performed on only one unit of analysis, such as the individual or the group (Hennessey & Amabile, 2010) and extended to include temporary states as antecedent variables in addition to dyads and workgroups as creative actors (Zhou & Hoever, 2014).

## **2.7 Main directions in creativity literature**

Basadur, Graen and Green (1982) clarified that the literature demonstrates that creativity research has taken the three distinctly different routes:

- 1) The identification approach, which aims to improve cognition, and personality tests capable of recognising relatively more- or less-creative people
- 2) Organisational factors in the workplace that tend to restrain or foster creativity
- 3) Training or development through training the individuals and making them more creative or enhancing their capability to utilise their intrinsic creativity.

### **2.7.1 The identification approach**

According to Basadur, Graen and Green (1982) the identification approach focuses on individuals' creativity by enhancing their cognitive and personality abilities by running the suitable tests.

Creativity literature has much in common with personality studies, as both prioritise uniqueness (Hennessey & Amabile, 2010). Thus, since the 1950s, creativity studies have focused on highly-creative personalities; several scholars have tried to clarify whether there are general traits of creative personalities or personality differences between highly creative or eminent people, which gave a great impulse to the research in the field of creativity (Chávez-Eakle, Eakle & Cruz-Fuentes, 2012). Additionally, many related tests have been developed, such as Khatena-Torrance Creative Perception Inventory (Khatena, 1977) and the Buffalo Creative Process Inventory (Puccio, 1999). Conversely, according to Palaniappan (1998), lots of empirical research has attempted to determine the relationship between cognitive styles or process with creativity. Many tests have been developed for this purpose. For instance, the Combined Cognitive Preference Inventory test which comprises 20 items: 10 in biology, five in physics and five in chemistry. Every item includes an initial statement, which includes some scientific information; four answers follow the statement. The participant must rank the responses according to his or her preference (Tamir, 1988). The Test of Cognitive Skills is a group-administrated test that evaluates three cognitive aspects: verbal, non-verbal and memory capabilities (Macmillian, 1993, cited in Russo, 2004).

### **2.7.2 The organisational factors**

According to Dul and Ceylan (2011), the social–organisational work environment refers to workers’ social and organisational circumstances in terms of job design, teamwork, reward systems and leadership styles. The social–organisational context is categorised into three levels: organisational level (e.g., culture and human resource management policies); team level (e.g., group composition); and job level (e.g., complex and demanding jobs, autonomy and supervisory support).

Several studies aimed to determine whether the work situational factors influenced creativity (e.g., Andriopoulos, 2001; Horng & Lee, 2009; Dul & Ceylan, 2011). For instance, Andriopoulos (2001) reviewed the related literature and discovered that five factors play a pivotal role in encouraging creativity in an organisation: ‘organisational climate, leadership style, organisational culture, resources and skills, and the structure and systems of an organisation’ (p.835). Horng and Lee (2009) aimed to examine the impact of extrinsic environmental factors on culinary creativity using in-depth

interviews and content analysis. The results indicated a close association between the creativity of culinary artists and the quality of their environment. Thus, it is vital to develop and sustain a physical, social, cultural and educational environment that encourages culinary creativity. Finally, Dul and Ceylan (2011) showed that there are 21 elements of the work environment that can foster creativity: ‘challenging job, teamwork, task rotation, autonomy in job, coaching supervisor, time for thinking, creative goals, recognition of creative ideas, incentives for creative results, furniture, indoor plants/flowers, calming colors, inspiring colors, privacy, window view to nature, any window view, quantity of light, daylight, indoor (physical) climate, sound and smell’. (p. 719–721)

### **2.7.3 Creativity training**

One question that has been addressed in creativity literature is whether creativity can be taught. Most scholars agree that creativity can be taught (e.g., Hallman, 1964; Mansfield, Busse & Krepelka, 1978; Best, 1982; Zelinski, 1989; Joseph & Jennifer, 1994; Dutton, 1996; Williams, 2001; Garaigordobil, 2006; Pollitt, 2007; Simonton, 2012; Susnea & Tataru, 2014). Thus, creativity training is considered an accepted approach to developing individual levels of creativity through training in creative-thinking techniques (Mansfield, Busse & Krepelka, 1978).

Creativity trainings is defined as ‘a group of exercises which are oriented at increasing participants’ creative potential, understood both as creative abilities (divergent thinking, imagination, fluency, flexibility and originality of thinking), but also creative attitudes’ (Karwowski & Soszynski, 2008, p. 163). It aims to:

- 1) Provide participants with a limited set of practices that will boost their creative thoughts (Scott, Leritz & Mumford, 2004a)
- 2) Provide affective instruments that foster individual innovation (Birdi, 2007)
- 3) Develop participants’ capabilities and steer the world around them (Tsai, 2012).

As a result, several creativity training techniques were developed. Like, creativity training research seminars (Stephenson & Treadwell, 1966), the Purdue creativity thinking program (Feldhusen, Speedie & Treffinger, 1970), future problem-solving (Torrance, 1978), the complete process of creative problem-solving (Basadur, Graen



& Green, 1982), six thinking hats (De Bono, 1985), the MBS training program (Rickards, De Cock & Evans, 1994), creative problem-solving (Treffinger, 1995), creativity and science day camp (Saxon et al., 2003), evaluational brainstorming (Bezzi, 2011), the creative capacity building program (Bott et al., 2014), an entrepreneurship course on creativity and innovation (Gundry, Ofstein & Kickul, 2014), the creativity compass program (Dziedziewicz, Gajda & Karwowski, 2014), ideational skills training and relaxation training (O'Connor, Gardiner & Watson, 2016).

In terms of the work context, organisations are interested in training employees on creativity tools and techniques for several reasons. First, a creative workforce is an important organisational resource (Gilbert, Prenshaw & Ivy, 1996). Second, creativity training is considered a tool to progress employees' problem-solving skills (Wang & Horng, 2002) and innovativeness (Birdi, Leach & Magadley, 2012). Third, it encourages employee idea generation, which leads to enhanced employee competencies (Birdi, 2005). Finally, this field is regarded as an additional financial income resource for some individuals and corporations because many consultants earn their living through creativity training and assisting staff in different organisations about how implement creative processes in performing their jobs (Puccio et al., 2006).

## **2.8 Historical background of innovation**

Ravichandran (2000) clarified that during early 1960s research on innovation launched to proliferate and carry on to advance. Both conceptualization and theory building were the center of investigation during the period of 1960s up to 1970s. It was noticed that the research was more of a descriptive nature, analyzing the relationship between distinct contextual factors and organisational features. Whilst during the period of 1980s till 1990s, the theory of innovation was much extended and presented prescriptions towards designing innovative work context.

## **2.9 Innovation on the workplace**

Management scholars, educators and practitioners gave main concern to innovation (Udwadia, 1990; Lin & Liu, 2012). Thus recent years have seen boosting emphasis placed on innovation at work place for the following reasons. First innovation is widely known as the input for growth and economic improvement (Isaksen &

Akkermans, 2011), company's survival (Udwadia, 1990) and success in the current intensely competitive business context (Udwadia, 1990; Mumford, 2000; Bassett-Jones, 2005; Armbruster, *et. al* , 2008; Gumusluoglu & Ilsev, 2009). As a result, Lin & Chen (2007), considered it as among of the main competencies of current's business world. Second, innovation is critical for the competitiveness of organisations (Lin & Chen, 2007; Armbruster et al., 2008; Lin & Liu, 2012), that's why it can utilise to deal with the quick changing in economic environment (Lin & Liu, 2012). Third, the existing wave of globalization has made innovation more central than at any other time in the past when companies frequently functioned within their isolated and protected markets (Amar & Juneja, 2008). Consequently, it is a must for organisations to adopt innovation to grow, to be efficient, and even to survive (Damanpour & Wischnevsky, 2006), besides deliver high quality products and services on time and at a lower charge compared to the competitors (Miron, Erez & Naveh, 2004). Fifth, innovation is considered as one of fundamental organisation's outputs that directly influence on the viability of organisations and its profound impact on the trends of demographic change (Sorensen & Stuart, 2000). Six, innovation is considered as a component of organisational change (Woodman, Sawyer & Griffin, 1993), since innovation is constantly driven by social and political actors who are controlling particular problems and demand and select to exploit specific chances (Sørensen & Torfing, 2011). Also, Damanpour (1991) demonstrated that all kinds of organisations adopt innovation in order to react to internal and external changes.

A considerable work in innovation field has concentrated on individual attempts towards innovation and its antecedents (Bhatnagar, 2012). Thus, several reasons support the concentration on innovation at work context as follows; First, according to Paulus and Dzindolet (2008) no innovation can occur without an effort of persons. Indeed individual with high levels of creative potential are one of the means that assist the organisation to raise its innovative performance (Hunter, Cushenbery & Friedrich (2012). It was found that employee's performance has a major and positive influence on both innovation performance and organisation performance (Sadikoglu & Zehir, 2010), because employee's innovation engages recognising problems, seeking support for executing solutions to known problems, and introducing products or presenting services (Hu & Zhao, 2016). Second, Goepel, Hölzle & Knyphausen-Aufse (2012)

stated that innovation is determined by human being who have an idea, value it, or desire to change a particular situation. Janssen, Vliert and West (2004) argued that innovative ideas are progressed and supported by individual employees. Third, innovation relies on the generation of creative and novel ideas (Mumford, 2000), because producing creative ideas is an element of innovation behavior (Yuan & Woodman, 2010), Janssen (2004, p 202) clarified that 'innovative behavior consists of idea generation, idea promotion, and idea realisation'. Thus employees who own good ideas and develop them are one of the sources of organisations innovation (Amabile et al., 1996). Fourth, individuals' engagement in innovation introduces new and enhanced means of performing products and services in the workplace and help in improving their work context (Bunce & West, 1995). Finally, indeed innovation occurs in the organisation by developing and implementing the creative outcomes introduced by individuals (Cummings & Oldham, 1997), that's why it is significant for organisations to adopt the mechanisms required to encourage individuals in their quest to gain knowledge (Shipton et al., 2005).

Thus a substantial body of research has focused on examining the role of innovation at work place (e.g. Shipton et al., 2005; Shipton et al., 2006; Jansen, Van Den Bosch, & Volberda, 2006; Lin & Chen, 2007; Bauernschuster, Falck & Heblich, 2009; Wanga & Shyu, 2009; Sadikoglu & Zehir, 2010; Halpern, 2010; Aas & Pedersen, 2011; Forsman, 2011). Such as Shipton et al., (2005) tested the relationship between Human Resources Management (HRM) systems and organisational innovation in thirty-five UK manufacturing organisations. The measurement of HRM included a variety of activity in the following domains: performance management, hiring and selection, induction and socialisation, training and commitment. The results found that effective HRM systems forecast organisational innovation related to products and production technology. Also, Lin and Chen (2007) carried out a study to identify the nature and kind of daily innovation practices of small- and medium-sized enterprises. The findings revealed that eighty per cent of the companies participated in the study carried out some kind of innovation. The two main kinds of innovation were technological and marketing innovation. Additionally the study showed that innovation had a weak relationship with corporate sales. While administrative innovation was the most central factor in clarifying sales instead of technological innovations. Other empirical study done by Sadikoglu and Zehir (2010) tested the associations between TQM practices and multiple performance measures, and to

investigate the mediating influences of workforce performance and innovation performance on the association between TQM practices and company's performance. The findings showed that workforce performance and innovation performance to a limited extent mediate the association between TQM practices and company performance.

Innovation is considered increasingly significant to managers working in both the public and private sector organisations (Gist, 1989). Rosenblatt (2011) clarified that, from the organisational point of view, both public and private sector organisations would like their workforce to innovate. Albury (2005) stated that innovation is considered important and not an optional luxury for the public sector, because this sector has to perform smarter not harder, in order to continue development in the delivered public services. In addition, various researchers stated that public managers give priority to innovation as other managers do (Wise, 1999). Sørensen and Torfing (2011) explored that dramatic transformation in form and content of public policies was as a result of adapting innovation in this sector. Walker, Damanpour and Devece (2011) justified that the reasons for adapting innovation by public sector organisations are to develop the services provided to users and society, to progress quality of life and establish better and stronger societies. Besides, according to Walker (2006) governments around the world encourage innovation and consider it as a key technique to advance public services. That's why Björk and Magnusson (2009) considered governments among the well-recognised sources for innovation. Thus, literature showed that many techniques have been used to develop innovation in the public sector. These include recognition (Borins, 2001; Rosenblatt, 2011), entrepreneurship (Mack, Green & Vedlitz, 2008; Korres, Papanis, Kokkinou & Giavrimis, 2011), local policy innovation (Chien & Ho, 2011) and creativity training (Wang & Horng, 2002; Birdi, 2007).

Thus lots of studies have examined innovation empirically in public sector organizations (e.g. Hipp & Grupp, 2005; Oke, 2007; Rincke, 2009; Naranjo-Gil, 2009; Choi & Chang, 2009; Walker, Damanpour & Devece, 2011; Lan & Galaskiewicz, 2012). For example, Naranjo-Gil (2009) run a study to address the following two objectives 1) To investigate organisational and environmental factors that might clarify the adoption of innovations in public sector organizations. 2) To

explain how technical and administrative innovations impact firms. Performance organisational factors included strategy and firm size, while environmental factors contained uncertainty and market concentration. The achieved results showed both environmental and organisational factors had inconsistent influence on the adaption of administrative and technical innovations. Also high adopters of administrative and technical innovations were more critical to environmental factors than organisational factors. Finally, the study showed that firms increase their performance when they decide to combine technical and administrative innovations. Also Walker, Damanpour and Devece's (2011) study aimed to check the influence of management innovation on firm's performance both directly and indirectly via performance management on public organisations. The results showed there was indirect impact of management innovation on performance management; also performance management mediated this relationship. Finally, there was a positive relationship between performance management and organisational performance.

A rich literature existed in describing factors influence which innovation at work context. These factors were categorized into three types; individual, organisational and external ones. Few studies were found that examined individual factors. Such as personality and demographic characteristics (e.g. Keller & Holland, 1978), gender (e.g Foss, Woll & Moilanen, 2013), risk-taking propensity (e.g. García-Granero et al., 2015) and intrinsic motivations (e.g. Rosenblatt, 2011).

Furthermore, the relationship between innovation and a variety of organisational factors were examined. Such as organization climate, supervisor (e.g., Scott & Bruce, 1994), leadership (e.g. Howell & Avolio, 1993; McMurray, et al., 2013; Ryan & Tipu, 2013), extrinsic motivation (e.g. Rosenblatt, 2011), creative climate and learning organisation factors (e.g Ismail, 2005), human resource management activities (e.g. Shipton et al., 2005;\_Wichitchanya & Durongwatan, 2012), climate (e.g. Abbey& Dickson, 1983; Baer & Frese, 2003), organisational culture which was operationalised as learning and development, participative decision-making, communication and tolerance towards conflict and risks, kaizen (continuous improvement) and leadership (e.g. Satsomboon & Pruetipibultham, 2014), organisational characteristics which reflected bureaucratic control, internal communication, external communication, organisational innovation and organisation's size (e.g. Brandyberry, 2003).

Some studies combined individual and organisational factors. Such as job characteristics, personal change, role innovation, self-esteem and subjective well-being (e.g., Munton & West, 1995), knowledge structure as organisational characteristics and environmental dynamism as external organisational characteristic (e.g. Ong, Wan & Chng, 2003), individual, organisational and environmental input and other organizations (e.g. Baldrige & Burnham, 1975).

Although Mathisen and Einarsen (2004) clarified that successful innovation in organisation is associated with a various external and internal factors, limited studies examined the influence of factors outside the work environment on employees' innovation. Such as external stakeholders (e.g Hueske, Endrikat & Guenther, 2015), environmental input from the community and other organisations (e.g. Baldrige & Burnham, 1975).

In terms of categorising studies according to the work domain, it was observed that majority of innovation studies have been conducted in manufacturing companies (e.g. Ong , Wan & Chng, 2003; Shipton et al., 2005; Shipton et al., 2006; Armbruster et al., 2008; Wanga & Shyu, 2009), some studies combined manufacturing industries with other ones, for example, a comparison between firms concentrating on manufacturing industries and others that do not have the same priority for innovation (e.g. Aas & Pedersen, 2011), manufacturing and service sectors (e.g. Forsman, 2011). While only few studies were tested in different fields like airports (e.g. Halpern, 2010), financial institution (e.g. Howell & Avolio, 1993), biotechnology industry (e.g Hueske, Endrikat, & Guenther, 2015), healthcare sector (e.g Naranjo-Gil, 2009), ceramic tile producers (García-Granero et al., 2015), and research & development (e.g Abbey & Dickson, 1983).

The previous researches were carried out at different parts of the world. However, most of them were examined in Western countries (e.g. Abbey & Dickson, 1983; Howell & Avolio, 1993; Munton & West, 1995; Wise ,1999; Shipton et al., 2005; Shipton et al., 2006; Oke, 2007; Armbruster et al., 2008; Bauernschuster, Falck & Hebllich, 2009; Rincke, 2009; Naranjo-Gil ,2009; Halpern, 2010; Walker, Damanpour, & Devece, 2011; Aas & Pedersen, 2011; McMurray et al., 2013; Hueske, Endrikat, &

Guenther, 2015; García-Granero et al., 2015), Some were conducted in Asian region , such as Taiwan ( e.g. Lin & Chen, 2007; Wang & Shyu, 2009), Turkey (e.g. Sadikoglu & Zehir ,2010) , China (e.g. Lan &Galaskiewicz , 2012; Yang et al., 2012), Singapore (e.g. Ong , Wan & Chng, 2003), Pakistan (e.g. Ryan & Tipu, 2013), Korea (e.g. Choi &Chang, 2009), Thailand (e.g. Satsomboon & Pruetipibultham, 2014).

Unlike creativity literature, there was a balance between innovation investigation in private sector (e.g. Abbey& Dickson, 1983; Howell & Avolio, 1993) and public sector organisations (Oke, 2007; Naranjo-Gil ,2009; Walker, Rincke , 2009; Choi & Chang, 2009; Damanpour, & Devece, 2011).

## **2.10 Creativity v. innovation**

Although this thesis focuses only on creativity as an outcome, the componential model of creativity and innovation in organisations (Amabile, 1988) contains both creativity and innovation. Thus, Section 2.8.1 will differentiate between the nature of creativity and innovation and section 2.8.2 will discuss the relationship between both variables.

### **2.10.1 Differentiating between the nature of creativity and innovation**

Lin (2011) emphasised the importance of distinguishing between creativity and innovation in different research areas. McLean (2005) also argued that the difference between creativity and innovation is an important consideration for human resources development scholars and practitioners. Thus, to discuss the relationship between the two concepts, this section begins by differentiating between the nature of each.

There are some differences between creativity and innovation. For example, creativity is generated at the individual level, while innovation is resulted at the organisational level (Oldham & Cummings, 1996; McLean, 2005). It has been argued that creativity as a phenomenon begins and exhibits at the individual level (McLean, 2005). From an organisational viewpoint, innovation success exists in the marketplace (Lin & Chen, 2007). In terms of the relationship with other fields, creativity is closer to behavioural sciences (e.g., psychology and education), while innovation is closer to management,

economics, public administration or political science (De Sousa, Pellissier & Monteiro, 2012). Rank, Pace and Frese (2004) clarified that creativity and innovation vary concerning the desired amount of idea novelty and social interaction; creativity is truly novel, but innovation can be based on ideas adopted from prior experience or various firms.

O'Shea and Buckley (2007) summarised the main differences between both concepts in terms of purpose, process, scope, relationship, determining factors and teams (see Table 2.1).

**Table 2.1: Examples of existing contradictions in the study of innovation and creativity**

<b>Area</b>	<b>Creativity</b>	<b>Innovation</b>
Purpose	Creativity does not need a purpose in its purest sense. However, in business, an idea must be useful and appropriate if it is to be creative.	Innovation is adaptive and is typically undertaken in response to unfamiliar, unexpected, or non-routine problems.
Process	Creativity is needed in all steps of the innovation process.	Creativity is the first step in innovation.
Scope	Creativity is the remit of the individual.	Innovation is the remit of organisations.
Relationship	Creativity produces innovation.	Innovation produces creative ideas.
Determining factors	Individual creativity is needed for an innovative organisation.	An innovative organisation is needed to foster individual creativity.
Teams	Creativity in teams is thinking about new things.	An innovative organisation is needed to foster team creativity.

Source: O'Shea and Buckley (2007, p. 102).

### **2.10.2 The relationship between creativity and innovation**

The literature on creativity and innovation is very closely associated (Heye, 2006; Shalley & Gilson, 2004); both are interested in the process of creating and implementing new knowledge (Gurteen, 1998). Heye (2006) added that twentieth-century information experts want features of creativity and innovation to remain relevant.



Four types of relationships between creativity and innovation have been discussed. First, both concepts were used interchangeably and many authors considered creativity and innovation as the same phenomenon (e.g., Martins & Terblanche, 2003; McLean, 2005; Mostafa, 2005). For instance, Mostafa (2005) used both concepts interchangeably and clarified that ‘innovation or creativity refers to a systemic development and practical application of a new idea’ (p. 8).

Second, other scholars argue that individuals’ creativity is considered a starting point for organisational innovation (e.g., Udvardia, 1990; Scott & Bruce, 1994; Amabile, 1996; West et al., 2004; Politis, 2005; Bassett-Jones, 2005; O’Shea & Buckley, 2007; Alves et al., 2007; Yusuf, 2009; Klijn & Tomic, 2010; Sarri, Bakouros & Petridou, 2010; Jiang, Wang & Zhao, 2012; Çokpekin & Knudsen, 2012; Rosso, 2014; Zhou & Hoever, 2014). For instance, Amabile et al. (1996) stated that innovation begins with creative ideas. Alves et al. (2007) shared the same opinion and explained that creativity is recognised as idea generation, while innovation transforms those ideas into new products or services; that is why innovation is the execution of creativity results. Klijn and Tomic (2010) highlighted that creativity is the keystone of innovation, and to promote innovation, awareness of the process of creativity and its mediators is essential. Çokpekin and Knudsen (2012) suggested that it has been assumed that encouraging creativity improves innovation. Moreover, Bruton (2011) clarified that creativity literature is full of strategies for novice thinkers to extend their thinking abilities to be innovative. Even for creativity at the organisational level, Woodman, Sawyer and Griffin (1993) clarified that organisational creativity is regarded as a subset of the broader field of innovation.

Third, other scholars argued that creativity is not enough to lead to innovation because successful innovation relies on other factors (Amabile, 1996). Innovation is a broader and more complex term than creativity (Axtell et al., 2000). Innovation is part of organisational change; conversely, creativity can also comprise the adaptation of pre-existing products or processes, or those developed outside of the work context (Woodman, Sawyer & Griffin, 1993).

Fourth, very few researchers claimed that there is no relation between creativity and innovation. For instance, Mintzberg et al. (2001, cited in Borghini, 2005, p. 19) argued that organisational creativity does not relate to innovation because it can also

be obtained through gradual changes and is not compulsorily attributable to the discovery and adoption of new methods and rules. Instead, it is connected to the idea of more or less major structural change in the system, like the move from one arrangement to another in the competitive plan.

Uowadia (1990) clarified that despite the significant role of employees' creativity in implementing organisational innovations, interest has focused on innovation, while creativity has received comparatively less attention. The justification for this might be that innovation is a broader and more complex term than creativity (Axtell et al., 2000). Indeed, creativity is considered an element of organisational innovation (Gilmartin, 1999). Ma (2006) shared this viewpoint and illustrated that the evolution of civilization relies on innovation, and innovation relies on creativity. Moreover, some researchers framed creativity as a part of the broader field of innovation, while innovation is part of organisational change (Woodman, Sawyer & Griffin, 1993).

## **2.11 Creativity in the workplace**

Within the management literature, creativity has a relatively brief history; very few studies have investigated the means of creative thinking in different organisations (Ogilvie & Simms, 2009). However, the mindset has changed, particularly since the 1990s. Creativity has gradually been recognised as a topic of interest to organisational psychologists and management scholars (Zhou & Hoever, 2014). Thus, according to Cooper and Jayatilaka (2006), creativity within the organisational context has obtained an increasing amount of study interest.

Numerous authors agreed that creativity is important for both employees and the workplace (e.g., Woodman, Sawyer & Griffin, 1993; James, Brodersen & Eisenberg, 2004; Rank, Pace & Frese, 2004; Zhou, Hirst & Shipton, 2012; Escribá-Esteve & Montoro-Sánchez, 2012). Escribá-Esteve and Montoro-Sánchez (2012) illustrated that creativity is—and will remain—a key prerequisite of staff and workplace growth. Zhou, Hirst and Shipton (2012) argued that creativity is central for individuals, various jobs and industries. Woodman, Sawyer and Griffin (1993) supported the view that creativity is significant for individuals and organisations, because it exemplifies a dramatic feature of organisational change that could offer a key to realising change phenomena and, ultimately, organisational effectiveness and survival.

Thus, organisations are interested in creativity for several reasons:

- 1) Creativity is considered a device of innovation, growth and societal progress (Zhou & Hoever, 2014), which is why it is now appreciated across a variety of jobs, professions and industries (Shalley & Gilson, 2004).
- 2) Creativity is regarded as an essential condition for organisational effectiveness (Basadur & Hausdorf, 1996; Basadur, Pringle & Kirkland, 2002), competitive power (Shalley, 1995) and permanent organisational health (Park et al., 2014), which is why many researchers have defined creativity as a significant outcome to a system (Drazin, Glynn & Kazaniian, 1999).
- 3) It helps the organisations improve technology, change work atmosphere, adjust organisational forms or strategies, defeat competitors, fulfil client wishes and evolve societies increasingly affected by global concerns (Egan, 2005).
- 4) Organisations require creativity to respond to the quick-changing environment and revive themselves (Tan, 1998).

Management scholarship prioritises employees' creativity in organisations. Cummings and Oldham (1997) defined employee creativity as 'individuals' generation of novel and useful products, ideas, and procedures that are raw material for innovation' (p. 23). The following reasons highlight the significance of employee creativity. First, creativity is a phenomenon that begins and presents at the individual level (McLean, 2005), as organisational creativity starts with creative workers (Gilmartin, 1999); the process of creativity initiates in the human mind (Amar & Juneja, 2008). However, a person consciously chooses to engage in the generation of new ideas (Drazin, Glynn & Kazaniian, 1999). Therefore, employees play a significant role in the generation and execution of novel ideas (Foss, Woll & Moilanen, 2013) and can perform creative work in any occupation at any level of an organisation (Rice, 2006). Second, due to the rise of knowledge-based economies, creative employees are classified as important organisational assets that help to provide a competitive advantage (Petty & Guthrie, 2000) through improving new knowledge, progressing technologies or developing processes that change or develop an organisation's products or services (Cummings & Oldham, 1997). Third, employees' creative performance has a crucial role in the continued existence and

development of organisations (Simmons & Ren, 2009). Other scholars delved further and specified that organisations must focus on increasing individual creativity to achieve good mental health and personality development, leading to new knowledge and the ability to solve daily problems (Russell & Meikamp, 1994).

As a result of observed organisational interest in creativity, more studies on creativity in the organisation context have been published (Driver, 2001). The findings have demonstrated a better understanding of creativity in organisational settings (e.g., West & Berman, 1997; Eskildsen, Dahlgard & Norgaard, 1999; Banks et al., 2002; McAdam & McClelland, 2002; Bharadwaj & Menon, 2002; Hannah, 2004; Rangarajan, 2008; Coveney, 2008; Moultrie & Young, 2009; Weinzimmer, Michel & Franczak, 2011; Bissola & Imperatori, 2011; Kalyar, 2011; Jiang, Wang & Zhao, 2012; Zhou, Hirst & Shipton, 2012). For instance, Eskildsen, Dahlgard and Norgaard (1999) conducted a study to understand the causal relationship between creative organisation, learning organisation and business excellence. The results clearly indicated a significant relationship between the three variables. McAdam and McClelland (2002) examined 17 UK firms to illustrate where the more and less successful manufacturing firms discovered their ideas for novel products, and how the firms revealed these ideas. The results showed that ideas for new products originated from internal sources like marketing, sales and R&D departments, and external sources such as customers. Further, customers were deemed the most profitable external source of ideas, while departments like marketing, sales and R&D were the most profitable internal sources. The findings indicated the relative financial gains of other sources of novel product ideas used by customers of high-performance synthetic fibres in the UK. Another empirical study, which included two organisations in the high-technology sector carried out by Hannah (2004) aimed to study factors that affect staff beliefs regarding the real owners of work ideas. The result indicated that beliefs on idea ownership are influenced by two factors: the workforce mindset regarding the positive points of their own legal claim to ideas and the positive points of the rival legal claim of the business owners. Further, these variables are affected by factors related to every individual idea.

Weinzimmer, Michel and Franczak (2011) attempted to study the affiliation between creativity and performance. The results illustrated that action orientation mediated the

relationship between creativity and organisational performance. Recent research (Zhou, Hirst & Shipton, 2012) examined the association between a job's problem-solving demand and employee creativity in three Chinese organisations. The findings showed a positive relationship between problem-solving demand and employees' creativity; this association was mediated by creative self-efficacy. Further, intrinsic motivation moderated the association between problem-solving demand and creative self-efficacy such that the association was stronger for employees with a high level of intrinsic motivation.

## **2.12 Creativity in public-sector organisations**

Many researchers agreed that creativity is widely prevalent in both private and public-sector organisations. For instance, Egan (2005) stated that the existence and performance of creative employees is fundamental to every organisation, regardless of the sector. Conversely, Rangarajan (2008) clarified that most creativity research was conducted in the private sector, while only few concentrated on government organisations (which are part of the public sector). The author justified this direction by assuming that government organisations are essentially incapable of creativity, unlike the private sector. Further, McLean (2005) declared that creativity plays a significant role in local government organisations by employing ideas in a creative manner to fulfil the requirements of the community and enhance quality of life. Rangarajan (2008) shared the same viewpoint, stating that investigating creativity in public-sector organisations is significant for two reasons:

- 1) It has been, in general; ignored compared to creativity in the private sector.
- 2) The possible effect on collective utility is superior, since more people are influenced by decisions made by organisations in the public sector.

Creativity exists in business organisations through the development of innovative products and services required for customers, consequently meeting customer expectations, creating jobs and contributing to the economy. Mack, Green and Vedlitz (2008) stated that along with efficiency, creativity and innovation have been advocated as a technique for public bureaucracies, governmental and non-governmental, to transform into flexible, more reactive units that perform more efficiently and effectively. Supporting this argument, Loewenberger, Newton and

Wick (2014) identified a growing demand for delivering more for less in public services, which creates demand for new ideas; however, normally creativity and innovation are stifled by solid bureaucracy.

According to Grell (2013), the public sector is regarded as a rule-based industry with controlled flexibility and space for creative performance. Hence, most creativity literature has focused exclusively on the private sector, which has resulted in limited recognition of organisational creativity within the public service (Rangarajan, 2008).

Nevertheless, some creativity studies have been conducted in public-sector organisations (e.g., Berman & Kim; 2010). For instance, Nordenflycht (2007) examined the influence of firms' public ownership on professional service. The findings showed that public ownership is related to inferior performance for small agencies but not for large agencies; there was no relationship between ownership and agency creativity, supporting the notion that public ownership did not stop agencies from competing with strategies that necessitate highly-skilled professionals.

Compared to the private sector (e.g., Amabile & Grysiewicz, 1989; Amabile, 1988, 1997; Oldham & Cummings, 1996; George & Zhou, 2001; Amabile et al., 2004; Verbeke et al., 2008; Eder & Sawyer, 2008; Foss, Woll & Moilanen, 2013), fewer studies have examined creativity in public-sector organisations (e.g., Heinzen, 1990; West & Berman, 1997; Coveney, 2008; Rangarajan, 2008; Loewenberger, Newton & Wick 2014; Kruyen & van Genugten, 2017), although creativity has figured in government programs across the world such as in the British Transport Police (Loewenberger, Newton & Wick, 2014), public-sector accounting in Spain (Benito, Montesinos & Bastida, 2008), creativity management practice in the Seoul Metropolitan Government (Berman & Kim, 2010), education in China, Hong Kong, Singapore and Taiwan (Hui & Lau, 2010), and leadership development training in the New York state government (Heinze, 1990). Thus, it is evident that there is a dearth of studies that have examined the factors that affect creativity within the public-sector context, specifically within the context of a new region that demonstrates evidence of practice by the principles of NPM (Jingjit & Fotaki, 2010).

## **2.13 Main creativity theories**

There are two different themes in the creativity literature. First, according to Sadi and Al-Dubaisi (2008), the traditional theory of creativity asserts that it is performed by creative individuals. In other words, creativity is a capability that creative humans are born with. Conversely, there are many theories that propose that creativity is affected by different factors (e.g., Woodman, Sawyer & Griffin, 1993; Ford, 1996; Amabile, 1997).

Several creativity theories and models have been developed to recognise factors that influence individuals and teams, such as Woodman's interactionist theory (Woodman, Sawyer & Griffin, 1993), the componential model of creativity and innovation in organisations (Amabile, 1988), an OC model to promote creativity and innovation (Martins & Martins, 2002), and a model for the integration of creativity and innovation (O'Shea & Buckley, 2007).

### **2.13.1 The componential theory of creativity and innovation in organisations**

Amabile (1983) developed the componential theory of individual creativity due to the rarity of experimental research that examined social and environmental influences on creativity. The model features three key components of individual (or small team) creativity:

- 1) Domain-relevant skills: Amabile (1988) defined domain-relevant skills as 'the essential skills from which any performance should progress. This element is seen as the set of cognitive pathways for solving a given problem or doing a given task. This component includes factual knowledge, technical skills, and special talents in the domain in question' (p. 130).
- 2) Creativity-relevant skills: Amabile (1988) clarified that creativity-relevant skill is 'something extra for creative performance and included a cognitive style favorable to taking new perspectives on problems, an application of heuristics for the exploration of new cognitive pathways and a working to conductive to persistent, energetic pursuit of one's work' (p. 130). The author added that creativity-relevant skills components also included knowledge of heuristics for generating novel ideas and a work style conductive to creativity.

This component depends on ‘personality characteristics, training such as different types creativity training programs or even on experience with idea generation’.

- 3) Intrinsic task motivation: Amabile (1988) highlighted that ‘task motivation makes the difference between what an individual can do and what one will do. Additionally, task motivation appears to depend strongly on the work environment; it may vary not only from one domain to another, but from one task to another within one domain, depending on the work environment. Task motivation includes two elements: the individual’s baseline attitude towards the task, and the individual’s perceptions of his or her reasons for understanding the task in a given instance’ (p. 133).

Along with the former theory of individual creativity, and due to the magnitude of organisational influences on creativity, Amabile (1988) extended the above theory to cover both creativity and innovation in the work context. According to Amabile (1996) there are three elements of the organisational work environment:

- 1) Organisational motivation to innovate ‘is a basic orientation of the organisation toward innovation, as well as supports creativity and innovation throughout the organisation’ (p. 1156).
- 2) Resources refers to ‘everything that the organisation has available to aid work in a domain targeted for innovation (e.g., sufficient time for producing novel work in the domain, and the availability of training)’ (p. 1156).
- 3) Management practices refers to ‘allowance of freedom or autonomy in the conduct of work, provision of challenging interesting work, specification of clear overall strategic goals, and formation of work teams by drawing together individuals with diverse skills and perspectives’ (p. 1156).

The current study will use the componential theory of creativity and innovation in organisations (Amabile, 1988). This will be described in greater detail, particularly the revised model (Amabile & Pratt, 2016) and the justifications will be explained in Chapter 5; Theoretical framework.



### 2.13.2 The interactionist theory

The base of this theory was the interactionist model of creative behaviour introduced by Woodman and Schoenfeldt (1989). Woodman, Sawyer and Griffin (1993) defined organisational creativity as ‘the creation of a valuable, useful new product, service, idea, procedure, or process by individuals working together in a complex social system’ (p. 293). The theory considers the perspective of interactional psychology on the integration of process, product, person and situation into a larger theory of organisational creativity. Thus, the authors justified following an interactionist perspective because it has great promise for demonstrating human behaviour in complicated social settings.

According to Woodman, Sawyer and Griffin (1993) the model includes:

- 1) Individual creativity which ‘is a function of antecedent conditions (e.g., past reinforcement history, biographical variables), cognitive style and ability (e.g., divergent thinking, ideational fluency), personality factors (e.g., self-esteem, locus of control), relevant knowledge, motivation, social influences (e.g., social facilitation, social rewards), and contextual influences (e.g., physical environment, task and time constraints)’ (p. 294).
- 2) Group creativity ‘is a function of individual creative behavior “inputs,” the interaction of the individuals involved (e.g., group composition), group characteristics (e.g., norms, size, degree of cohesiveness), group processes (e.g., approaches to problem-solving), and contextual influences (e.g., the larger organisation, characteristics of group task)’ (p. 296).
- 3) Organisational creativity ‘is a function of the creative outputs of its component groups and contextual influences (organisational culture, reward systems, resource constraints, the larger environment outside the system, and so on)’ (p. 296).

The Gestalt of creative output includes new products, services, ideas, procedures and processes. These outputs come from the diverse mosaic of individual, group and organisational features and behaviours emerging within situational influences (both creativity coercing and enhancing) at each level of social organisation. Further, a vital

characteristic of the model is its capability to address impacts across levels of analysis (Woodman, Sawyer & Griffin, 1993).

### **2.13.3 A model for the integration of creativity and innovation**

O'Shea and Buckley (2007) developed a model for the integration of creativity and innovation in the study of organisations, technology and science. The authors suggested four propositions for the integrative interest of creativity and innovation:

- 1) Creativity and innovation can be believed as processes, working parallel, which can be exhibited at the individual, team, organisational or industry level (P1).
- 2) Moving from the individual level, to the team level, to the organisational level, and to the broadest level of analysis (industry), the fundamental concentration moves from creativity level of analysis to innovation at the industry level (P2).
- 3) The organisational level of analysis offers the investigator the greatest chance to examine innovation and creativity in connection with one another (P3).
- 4) The procedures of creativity and innovation on a broad level are affected by individual aspects, team aspects, task aspects, support factors, organisational aspects and external demands (P4).

This model, in addition to individual and organisational factor, includes external demand, which is defined as 'the external context of group's work, e.g., organisational climate, support systems, market environment or environmental uncertainty, that is likely to have a highly significant influence on its creativity and innovation implementation' (O'Shea & Buckley, 2007, p. 112). However, no studies that empirically tested the suggested model were discovered.

### **2.13.4 An OC model to promote creativity and innovation**

Martins and Terblanche (2003) conducted a descriptive literature review to investigate which determinants of OC would encourage creativity and innovation in the workplace. From this, the authors developed a framework that specified five determinants of the work environment that encourage creativity and innovation: strategy, structure, support mechanisms, behaviour that promotes innovation and communication.

Many studies have employed the previous model to address their research question (e.g., Martins, Martins & Terblanche, 2004; Zdunczyk & Blenkinsopp, 2007). Amar and Juneja (2008) argued that individual creativity emerges because of the interaction between the thoughts of individual and a context, which leads to innovation. However, unlike other creativity and innovation theories that include different factors, this model focused only on work culture. The authors did not justify their model parameters through empirical testing or any other validation.

### **2.13.5 A descriptive model of innovation and creativity in organisations**

Amar and Juneja (2008) began to synthesise published studies to assist managers of knowledge workers to realise how to encourage creativity, innovation and productivity through improved work conditions. The authors incorporated existing research from well-known academic journals, practitioner-oriented periodicals, professional surveys and books written by experts. As a result, the proposed model assumes that the foundation of innovation in the workplace builds on three antecedents that are within management's control:

- 1) A firm's knowledge repositories
- 2) A culture that not only encourages creativity but actually buoys it
- 3) The availability of social capital from which the employees can draw.

The occurrence of these antecedents assists creativity in workers engaged in innovation. However, few empirical studies have adopted this developed theory.

In terms of evaluating the existing theories and frameworks related to creativity at work context, Eder and Sawyer (2008) stated that most creativity and innovation theories that have been mainly conducted at workplace were: the componential theory of creativity and innovation in organisations (Amabile, 1988) and the interactionist theory (Woodman, Sawyer & Griffin, 1993). Shalley and Gilson (2004) shared this view and clarified that both theories are considered as general frameworks that illustrate a range of significant factors that can either support or hinder employee creativity. Even Ford (1996), who developed the theory of individual creative action in multiple social domains, considered them leading theories in the field and explained how his new theory was extended by the componential theory of creativity

and innovation in organisations (Amabile, 1988) and the interactionist theory (Woodman, Sawyer & Griffin, 1993).

Thus the above discussion confirms that Amabile's (1988) theory is among the leading theories in creativity. Also as will be shown in Chapter 4, the findings of Cycle 1 of the research design confirmed the applicability of the componential model of creativity and innovation in organisation (Amabile, 1988) in Dubai government organisations. Hence, the current study considered this model as a foundation for this study. Further details have been included in Chapter 4.

## **2.14 The organisational climate for creativity**

Schneider, Ehrhart and Macey (2013) illustrated that during the 1960s and 1970s, the topic of organisational climate was prevalent in early human organisational environments. Abbey and Dickson (1983) defined work climate as 'a relatively enduring quality of an organisation's internal environment that results from the behaviour and policies of members of the organisation, especially its top management' (p. 362). According to Isaksen et al. (2000–01), climate 'is the recurring patterns of behavior, attitudes, and feelings that characterize life in the organisation' (p. 172). Schneider, Brief and Guzzo (1996) classified the four key climate dimensions: '1) The nature of interpersonal relationships, 2) The nature of the hierarchy, 3) The nature of work and 4) The focus of support and rewards' (p. 10).

The literature indicates that there is elevated interest in specific climate foci, such as the climates for initiative and psychological safety (Baer & Frese, 2003), ethics (Wimbush, Shepard & Markham, 1997) and procedural justice (Colquitt, Noe & Jackson, 2002).

Glisson (2007) defined psychological climate as 'the individual employees' perceptions of the psychological impact of their work environment on their own wellbeing' (p. 739). The author explained that organisational climate is regarded as one of the main elements in organisational social contexts. It is generated when employees in a work unit, team or organisation share the same opinions of how their work context influences them as individuals. Isaksen et al. (2000–01) differentiated

between psychological climate and organisational climate; psychological climate is at the individual level, while organisational climate is at the organisational level.

Some authors demonstrated that climate is not limited to organisations' internal elements; external elements should also be considered. Cilla (2011) highlighted that it is becoming increasingly significant for organisations to concentrate on recognising their own climate, and the external climate in which they seek to work. Huţu (2005, cited in Rusua & Avasilcai, 2014, p. 53) mentioned that in addition to internal factors, external factors, such as the political and economic environments, symbolise the aspects of organisational climate that affect workforce motivation, work satisfaction and performance.

In the creativity literature, the concept of creative climate was introduced by Ekvall (1996), who defined climate as 'an attribute of the organisation, a conglomerate of attitudes, feelings, and behaviours which characterizes life in the organisation, and exists independently of the perceptions and understandings of the members of the organisation' (p. 105).

Climate is considered a significant element that can either support or impede employee creativity (Amabile et al., 1996). Mathisen and Einarsen (2004) pointed out that the organisation has an obvious role in creating an atmosphere in which creativity and innovation are either encouraged or hindered. In terms of industry and sector type, it seems that a creative climate is significant across various workplace settings, like profit, non-profit, manufacturing, R&D and mixed settings (Hunter et al., 2007).

The same distinction has been followed in defining the climate for creativity; Amabile et al. (1996) demonstrated that at the individual level of analysis, the climate for creativity reflects a psychological climate that focuses on employees' perceptions of different contextual elements in the work environment.

## **2.15 Instruments used to measure organisational climate for workplace creativity**

Amabile et al. (1996, cited in Mathisen & Einarsen, 2004) illustrated that the measurement of creative and innovative environments might be practical in diagnosing the extent to which an organisation's work environment is conducive to

creativity and innovation. This may also be useful in the assessment of development efforts, and in the recognition of relative strengths and weaknesses within and between units and work groups.

Accordingly, the literature shows that several researchers have become increasingly interested in developing instruments to measure the climate for creativity. These tools include assessing the climate for creativity (Amabile et al. 1996), creative climate questionnaire (CCQ) (Ekvall, 1996), situational outlook questionnaire (SOQ) (Isaksen, Lauer & Ekvall, 1999), team climate inventory (TCI) (Anderson & West, 1998) and the Siegel scale of support for innovation (SSSI) (Siegel & Kaemmerer, 1978).

This section focuses on well-known instruments that measure climate for creativity at the individual level in the work context. Thus, TCI (Anderson & West, 1998), was eliminated because it targets team-level analysis. The main instruments used in the literature to measure the climate for creativity in the workplace will be discussed in Section 2.13.1–2.13.4.

### **2.15.1 Creative climate questionnaire**

This instrument was developed as the result of research program in Sweden, held during the 1980s. It focused on organisational settings that encourage or impede creativity and innovation (Ekvall, 1990, cited in Ekvall, 1996, p. 106). The instrument aims to measure organisational structure and climate for creativity and innovation. Ekvall (1996) mentioned that organisational climate is different from OC; however, if climate has to be integrated in a culture model, it has to be considered a manifestation of culture on Schein's (1985) model.

The questionnaire (Ekvall, 1996) contains 50 items that cover 10 factors of five items. The 10 factors are:

- 1) 'Challenge: the emotional involvement of the members of the organisation in its operations and goals' (p. 107).
- 2) 'Freedom: the independence in behaviour exerted by the people in the organisation' (p. 107).
- 3) 'Idea support: the ways new ideas are treated' (p. 107).

- 4) 'Trust/openness: the emotional safety in relationships' (p. 107).
- 5) 'Dynamism/liveliness: the eventfulness of life in the organisation' (p. 107).
- 6) 'Playfulness/humour: the spontaneity and ease that is displayed' (p. 108).
- 7) 'Debates: the occurrence of encounters and clashes between viewpoints, ideas, and differing experiences and knowledge' (p. 108).
- 8) 'Conflicts: the presence of personal and emotional tensions (in contrast to conflicts between ideas) in the organisation' (p. 108).
- 9) 'Risk-taking: the tolerance of uncertainty in the organisation' (p. 108).
- 10) 'Idea time: the amount of time people can use (and do use) for elaborating new ideas' (108).

Many researchers have subsequently adopted the questionnaire in their studies (e.g., Ekvall & Ryhammar, 1999; Sundgren et al., 2005; Moultrie & Young, 2009; Rasulzada & Dackert, 2009; Lundmarka & Björkman, 2011).

### **2.15.2 Situational outlook questionnaire**

Isaksen, Lauer and Ekvall (1999) agreed on the significance of creative climate in the workplace. Thus, there was a need to develop a precise instrument to evaluate more accurately the climate for creativity and change in organisations. Moreover, CCQ was translated from Swedish to English and consequently, in 1996, the SOQ was introduced and accessible to use with groups and organisations.

Isaksen (2007) illustrated that the SOQ aims to evaluate the climate in organisations that encourages change, innovation and creativity, to provide key decision-makers with relevant interventions. The questionnaire includes 53 items to measure nine dimensions:

- 1) The challenge/involvement dimension 'focuses on how much people are involved in daily operation, long-term goals and visions' (p. 457).
- 2) The freedom dimension 'refers to the independence in behavior exerted by the people in the organisation' (p. 457).
- 3) The trust/openness dimension 'addresses emotional safety in relationships' (p. 457).
- 4) Idea-Time refers to 'the amount of time people can use (and do use) for elaborating new ideas' (p. 457).

- 5) The playfulness/humour dimension ‘address the spontaneity and ease displayed within the workplace’ (p. 457).
- 6) Conflict refers to ‘the presence of personal and emotional tensions in the organisation’ (p. 458).
- 7) The idea-Support dimension focuses on ‘the way new ideas are treated’ (p. 458).
- 8) The debate dimension ‘assesses the occurrence of encounters and disagreement between viewpoints, ideas and different experiences and knowledge’ (p. 458).
- 9) The risk-taking dimension ‘addresses the tolerance of uncertainty and ambiguity expressed in the workplace’ (p. 458).

In addition to the above questions, the updated version comprised three open-ended questions intended to collect narrative data from participants about what is encouraging or impeding their creativity in the workplace. They are also questioned on actions they would take to develop the climate for creativity.

Isaksen, Lauer and Ekvall (1999) clarified that following eight dimensions have a positive association with creativity and change: challenge/involvement, freedom, trust/openness, idea time, playfulness/humour, idea support, debate and risk-taking. Conflict has a negative association with creativity and change.

Mathisen and Einarsen (2004) compared the SOQ and CCQ, and stated that the CCQ consists of 10 factors while the SOQ includes nine factors. It has been observed that in the SOQ, the factor of dynamism/liveliness has been eliminated and new items have been added to the challenge factor. Many authors have used this instrument (e.g., Isaksen et al., 2000–2001; Isaksen & Lauer, 2002; Isaksen, 2007; Isaksen & Akkermans, 2011).

### **2.15.3 Assessing the climate for creativity**

Amabile et al. (1996) developed a new instrument (KEYS) that aimed to examine employees’ perceptions of creativity and innovation in the work environment because none of the previous instruments were designed specifically to measure this. KEYS consists of 78 numerical items and a scale is divided into two types: stimulant and obstacle scales. Scales are measured by eight dimensions (Amabile et al., 1996):



- 1) Organisational encouragement is defined as an ‘organisational culture that encourages creativity through the fair constructive judgment of ideas, reward and recognition for creative work, mechanisms for developing new ideas, an active flow of ideas, and a shared vision of what the organisation is trying to do’ (p. 48).
- 2) Managerial encouragement is defined as ‘a supervisor who serves as a good work model, sets goals appropriately, supports the work group, values individual contributions, and shows confidence in the work group’ (p. 48).
- 3) Work group support is defined as a ‘diversely skilled work group in which people communicate well, are open to new ideas, constructively challenge each other’s work, trust and help each other and feel committed to the work they are doing’ (p. 48).
- 4) Sufficient resources is defined as ‘access to appropriate resources, including funds, materials, facilities, and information’ (p. 48).
- 5) Challenging work is defined as ‘a sense of having to work hard on challenging tasks and important projects’ (p. 48).
- 6) Freedom is defined as a ‘freedom in deciding what work to do or how to do it; a sense of control over one’s work’ (p. 48).
- 7) Organisational impediments are defined as ‘an organisational culture that impedes creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk and an overemphasis on the status quo’ (p. 48).
- 8) Workload pressure is defined as ‘extreme time pressures, unrealistic expectations for productivity, and distractions from creative work’ (p. 48).

Finally, the questionnaire measures two kinds of outcomes: creativity and productivity. Creativity is defined as ‘a creative organisation or unit, where a great deal of creativity is called for and where people believe they actually produce creative work’ (Amabile, 1997, p. 49). Productivity is defined as ‘an efficient, effective, and productive organisation or unit’ (p. 49). It was noticed that innovation is categorised as creativity.

As will be shown in Chapter 4, the findings of Cycle 1 of the research design confirmed the applicability of the componential model of creativity and innovation in

organisation (Amabile, 1988) in Dubai government organisations. Hence, KEYS questionnaire, which has been developed by the same author, will be used to measure the work climate for creativity in Dubai government organisations.

Many studies have used KEYS to investigate the factors that influence employees' creativity in the workplace (e.g., Hickman, 1998; Amabile & Congoti, 1999; Amabile et al., 2004; Politis & Politis, 2010; Tseng & Liu, 2011; ElMelegy et al., 2016), which further justifies the use of the questionnaire to answer the key research questions in this study.

#### **2.15.4 Siegel scale of support for innovation**

Siegel and Kaemmerer (1978) aimed to create an instrument that conceptualised the dimensions of organisational climate in innovative organisations. The authors distinguished between two types of organisations: innovative organisation (ones that promote the creative performance of members) and traditional organisations (ones that are not purposely oriented towards promoting the creative performance of members).

The authors considered five dimensions as characteristic of innovative organisations: leadership, ownership, norms for diversity, continuous development and consistency. Thus, the questionnaire contains 61 items that cover three dimensions (Siegel & Kaemmerer, 1978):

- 1) Support of creativity is 'the extent to which members of an organisation perceive it as supporting its members in their functioning independently and in pursuit of new ideas' (p. 559).
- 2) Tolerance of differences 'reflects the perception of the organisation as being supportive and tolerant of diversity among its members' (p. 559).
- 3) Personal commitment is 'the degree of personal commitment a member feels toward an organisation is related to the construct of ownership' (p. 560).

Many studies have used SSSI to evaluate organisational climate in relation to creativity and innovation (e.g., Howell & Avolio, 1993; Scott & Bruce, 1994; Dulaimi, Nepal & Park, 2005).

## **2.16 Assessing instruments used to measure organisational climate for creativity in the workplace**

Mathisen and Einarsen (2004) reviewed instruments designed to evaluate organisations' internal environments and social climate in terms of creativity and innovation. The authors considered four criteria that had to be achieved by the instruments in their review:

- 1) The goal of the instrument should be to evaluate the quality of the social environment of the workplace in relation to creativity or innovation.
- 2) The instrument should make information on psychometric characteristics available.
- 3) The instrument should be available for research and commercial use.
- 4) The instrument should have been depicted in an international journal.

These criteria led them to focus on reviewing: the SSSI (Siegel & Kaemmerer, 1978), KEYS (Amabile et al., 1996), the CCQ (Ekvall, 1996), the TCI (Anderson & West, 1998) and the SOQ (Isaksen, Lauer & Ekvall, 1999). The authors described every instrument, including details about the measure's norms, factor structure, reliability and validity. The findings showed that there are usable instruments for evaluating these climate dimensions, particularly the TCI and KEYS. All instruments place greater emphasis on encouraging factors than they do impeding factors. Only two instruments contained separate impediment dimensions: KEYS (organisational impediments and workload pressure) and CCQ (conflict). They also highlighted that limited studies have been published in peer-reviewed literature that has employed the SSSI and CCQ.

In summary, climate is a significant factor for employees' creativity. The instruments currently used examine the internal factors of organisational influence on creativity. However, there is a growing tendency to consider the influence of external factors that have the potential to influence employees' creativity.

## **2.17 Factors influencing employees' creativity in the workplace**

Raudeliūnienė, Meidutė and Martinaitis (2012) classified three major groups of factors that affect employees' creativity: individual, organisational and external

factors. Thus, a large body of literature has subsequently examined the necessary conditions for employees' creativity within the workplace.

First, scholars empirically investigated a variety of individual factors that affected employees' creativity, such as individual characteristics like domain-relevant skills (e.g., Amabile, 1989; Davis, 1997; Baer & Kaufman, 2005; Wynder, 2007; Birdi, Leach & Magadley, 2016), creativity-relevant skills (e.g., Davis, 1997; Amabile, 1989; Baer & Kaufman, 2005; Eder & Sawyer, 2008; Sagiv et al., 2010; Dayan, Zacca & Benedetto, 2013), intrinsic task motivation (e.g., Ganesan & Weitz, 1996; Eisenberger & Rhoades, 2001; Shin & Zhou, 2003; Eder & Sawyer, 2008), self-efficacy (Eder & Sawyer, 2008), intelligence (e.g., Amabile, 1996) and gender (e.g., Windels & Lee, 2012; Foss, Woll & Moilanen, 2013).

Second, Amabile et al. (1996) argued that the social environment in the workplace can affect the level and frequency of employee creativity. Moreover, according to Paulus and Dzindolet (2008), employees' creativity is robustly affected by the social context. Thus, several empirical studies have examined the impact of work context factors on employees' creativity. For instance, Martins, Martins and Terblanche (2004) identified determinants of OC that affect the level of creativity and innovation in a university library. The results indicated that creativity and innovation can be affected by many variables and will only succeed under ideal conditions in an organisation. The values, norms and beliefs that have a critical role in creativity and innovation in organisations can either encourage or impede creativity and innovation, depending on how they affect the behaviour of employees and groups. Further, strategy and behaviour were identified as determinants that foster innovation. The role of management was also highlighted as a determinant, if it is communicative, tolerant of mistakes, flexible in adopting rules and supportive in the provision of equipment and resources. Rasulzada and Dackert's (2009) study aimed to test the connection between a creative and innovative organisation and the wellbeing of employees. Their study also aimed to check how organisational creativity and innovation can be enhanced by various organisational factors. The findings indicated a significant association between perceived organisational creativity and innovation and employees' psychological wellbeing. Both organisational climate and work resources

were discovered to be significantly connected to perceived creativity and innovation in the organisational context.

Jiang, Wang and Zhao (2012) tested the influence of human resource management (HRM) practices on both employee creativity and organisational innovation. The findings indicated that some HRM practices (i.e., hiring and selection, reward, job design and teamwork) were positively related to employee creativity, whereas training and performance appraisal were not. Employee creativity fully mediated the associations between four HRM practices (i.e., hiring and selection, reward, job design and teamwork) and organisational innovation. Politis (2005) investigated the relationship between aspects of dispersed self-management leadership and several work contextual dimensions that are supportive of creativity and productivity. The data were collected from employees working for high-technology organisations in the UAE. The results revealed a positive and significant relationship between dispersed leadership and the stimulant aspects of the work context for creativity. Further, there was a negative and significant relationship between dispersed leadership, with the exception of promoting self-reinforcement, and the creativity obstacles in the work environment. Finally, the results indicated that the stimulant aspects of the work context for creativity have a positive and significant impact on both creativity and productivity.

There were two types of organisational characteristics in the literature:

- 1) Factors that had a positive influence on employees' creativity, such as sufficient resources (e.g., Ekvall & Ryhammar, 1999; Shalley & Perry-Smith, 2001; Mbatha, 2013), justice treatment (e.g., Clark & James, 1999), positive leadership (e.g., Redmond, Mumford & Teach, 1993; Oldham & Cummings, 1996; Politis, 2005; Amabile et al., 2004; Ohly, Sonnetag & Pluntke, 2006; Hauksdóttir, 2011; Hvidsten & Labraten, 2013; Kim & Yoon, 2015), work group support (e.g., Madjar, Oldham & Pratt, 2002; Zhou, 2003; Zhou & George, 2001; Farmer, Tierney & Kung-McIntyre, 2003), freedom (e.g., Zhou, 1998; Mathisen, 2011; Moultrie & Young, 2009), job complexity (e.g., Hatcher, Ross & Collins, 1989; Cummings & Oldham, 1997), goals at work (e.g., Shalley, 1991, 1995; Foss, Woll & Moilanen, 2013), time pressure (e.g., Andrews & Smith, 1996), workload pressure (e.g., Elsbach & Hargadon,

2006; Amabile & Conti, 1999), tasks (e.g., Madjar & Oldham, 2006), rewards (e.g., Burroughs et al., 2011), staffing policies (Ganesan & Weitz, 1996) and affective commitment (Jaiswal & Dhar, 2017).

- 2) Factors that had a negative influence on employees' creativity, such as conservatism and internal strife (Amabile et al., 1999), bureaucracy (Hirst et al., 2011), controlling supervision (Oldham & Cummings, 1996), lack of resources (Andriopoulos, 2001), and conventional skills (Coveney, 2008).

Although the previous studies have categorised factors that influence creativity into positive and negative, the results revealed inconsistency among the findings, even for the same factor; thus, further research is required. As several scholars clarified, existing research presented a mixed picture concerning the impact of work context factors such as resources (Sonenshein, 2014), managers (Shalley, Zhou & Oldham, 2004), autonomy (Zhang et al., 2017) and work pressure (Foss, Woll & Moilanen, 2013) on employee creativity.

Third, limited studies focused on the influence of external factors on employees' creativity. These factors include family and friends (Madjar, Oldham & Pratt, 2002), family and school (Yeh, 2004), supportive family (Horng & Lee, 2009), the national climate for creativity (Hoegl, Parboteeah & Muethel, 2012), education systems, public investment in education and research, public culture and the local environment's tolerance (Raudeliūnienė, Meidutė & Martinaitis, 2012), and marriage (Tang, Huang & Wang, 2017).

Fourth, some studies combined both individual and organisational factors in terms of their influence on employees' creativity (e.g., Sadi & Al-Dubaisi, 2008; Horng et al., 2016; Chang & Teng, 2017).

## **2.18 Investigating employees' creativity based on work fields and countries**

Creativity has been investigated in various work fields such as advertising (e.g., Nordenflycht, 2007; Verbeke et al., 2008), business excellence (e.g., Eskildsen, Dahlgaard & Norgaard, 1999), textiles (e.g., McAdam & McClelland, 2002), high-technology (e.g., Hannah, 2004), library services (e.g., Coveney, 2008), retail (e.g.,

Ganesan & Weitz, 1996), fashion and design (e.g., Bissola & Imperatori, 2011), manufacturing (e.g., Oldham & Cummings, 1996; Zhou & George, 2001; Eder & Sawyer, 2008), R&D (e.g., Shin & Zhou, 2003), university (e.g., Redmond, Mumford & Teach, 1993; Ekvall & Ryhammar, 1999), chemicals, consumer products (e.g., Amabile et al., 2004) and marketing (e.g., Sadi & Al-Dubaisi, 2008). Some did not specify the domain, instead categorising organisations as creative industries (e.g., Banks et al., 2002; Moultrie & Young, 2009) or stating that necessities for creativity are not salient for the organisations (e.g., Zhou, Hirst & Shipton, 2012).

Most of these studies were conducted in US and Western countries (e.g., Heinze, 1990; West & Berman, 1997; Eskildsen, Dahlgaard & Norgaard, 1999; Ekvall & Ryhammar, 1999; McAdam & McClelland, 2002; Banks et al., 2002; Hannah, 2004; Coveney, 2008; Benito, Montesinos & Bastida, 2008; Verbeke et al., 2008; Eder & Sawyer, 2008; Moultrie & Young, 2009; Bissola & Imperatori, 2011; Luring & Selmer, 2013; Loewenberger, Newton & Wick, 2014; Blauth, Mauer & Brettel, 2014). Fewer were conducted in the Asia and Arabic countries (e.g., Yamada, 1991; Berman & Kim, 2010; Iqbal, 2011; Park et al., 2014; Kim & Yoon, 2015). In terms of Asian countries, most studies were conducted in Singapore (e.g., Tan, 2000), China (e.g., Zhou, Hirst & Shipton, 2012), Taiwan (e.g., Farmer, Tierney & Kung-McIntyre, 2003), Korea (Shin & Zhou, 2003) and Saudi Arabia (e.g., Sadi & Al-Dubaisi, 2008). Few studies have been conducted in Africa (e.g., Rice, 2006; Mbatha, 2013).

According to Lubart (1990) Oriental and Western standpoints on creativity are diverse. Shalley, Zhou and Oldham (2004) shared the same points of views and argued that achieved results of studies that have been conducted in Western might not be applicable to Asia because based on existing theories, individuals' creativity is linked to social-contextual factors that differ according to organisational context.

In terms of the sector, previous studies have resulted that there are sectoral differences with respect to managerial practices by examining the same research topic in public and private sectors (e.g., Wise, 1999; Groeneveld & Verbeek, 2012; Luring & Selmer 2013; Hvidman & Andersen, 2014).

That's why, there is a need for additional studies to investigate the direction of the relationship between the antecedent factors and employees' creativity in public sector

organisations that apply NPM reforms in a new region such as Dubai government organisations which adopt several principles of private-sector organisations like Afkari, a government initiative to support, encourage and finance creative ideas, launched the m-Government initiative, in addition to other creative initiatives such as hosting Expo 2020, creating an online suggestion system to encourage the public to submit suggestions that can improve performance.

## **2.19 Key findings from the literature**

In the light of what has been discussed in this chapter, several critical key findings arose from the literature.

First, as discussed in this chapter, several creativity theories and models have been developed to identify factors that influence employee creativity such as the interactionist theory (Woodman, Sawyer & Griffin, 1993), the componential model of creativity and innovation in organisations (Amabile, 1988), an OC model to promote creativity and innovation (Martins & Martins, 2002), and a model for the integration of creativity and innovation (O'Shea & Buckley, 2007).

However, these theories and models have focused only on individual and organisational factors that influence employees' creativity. There was a noticeable absence of research on the potential influence of external factors on work climate and employees' creativity.

There is a trend that suggests that organisations must consider the influence of external climate on organisational performance (e.g., Cilla, 2011; Huțu, 2005, cited in Rusua & Avasilcai, 2014). Limited examples have been empirically examined to determine the external factors outside the organisations that affect employee creativity (e.g., Madjar, Oldham & Pratt, 2002; Horng & Lee, 2009). Further, a conceptual paper presented framework developed by Iqbal (2011), in which government commitment, support and investment is one of the components in the suggested model that influences creativity and innovation. Thus, there is a need to identify whether external factors outside the organisations could influence employees' creativity.

Second, several authors agreed that there was inconsistency in the results of research into factors that affect employees' creativity (e.g., Shalley, Zhou & Oldham, 2004;



Foss, Woll & Moilanen, 2013; Sonenshein, 2014; Zhang et al., 2017). These authors suggested further research, particularly when testing the same theory or instrument in various places produced different results.

Supporting this argument, Rice (2003) stated that most studies related to business creativity, innovation and knowledge management concentrated on US management practices. The theories, models and suggestions are consequently culturally bound, according to the standpoints of the researchers and the cultural settings of the organisations investigated. Moreover, researchers who have studied practices in other countries usually focus on the developed economies of Japan and Europe. Unsurprisingly, literature showed that most studies were conducted in the US and Western countries (e.g., Axtell et al., 2000; Bommer & Jalajas, 2002; Haner, 2005; Zdunczyk & Blenkinsopp, 2007; Rasulzada & Dackert, 2009; Larson, 2011; Foss, Woll & Moilanen, 2013). Few studies were conducted in Asia (e.g., Politis, 2005, Gumusluoglu & Ilsev, 2009; Berman & Kim, 2010; Kalyar, 2011; Jiang, Wang & Zhao, 2012; Tseng & Liu, 2011; Lin & Liu, 2012; Peng et al., 2014).

Therefore, there is a need for additional studies to investigate the direction of the relationship between the antecedent factors and employees' creativity in a new region. Few creativity studies have been conducted in Arab countries in general, and Dubai government organisations in particular. Table 2.2 features a summary of key studies carried out in Arab countries.

Third, in terms of the relationship between motivation and employees' creativity, creativity is closely related to the motivational process at the individual level (Ambrose & Kulik, 1999). Amabile (1985) divided people into two categories:

- 1) Intrinsically motivated individuals who engage in an exacting task if they consider their task engagement as motivated chiefly by their own interest and participation in the task
- 2) Extrinsically motivated individuals who engage in a task if they consider their task engagement as motivated principally by external objectives, like the promise of reward or the prediction of evaluation.

The above categorisation led to the investigation of two types of motivation factors related to creativity:

- 1) The relationship between intrinsic motivation and employee creativity (e.g., de Jesus et al., 2013; Hannam & Narayan, 2015)
- 2) The relationship between extrinsic motivation (Lin and Wong [2014] provided examples of extrinsic motivators: evaluation competition and reward).

Several studies examined different kinds of extrinsic motivation such as reward (e.g., Malik, Butti & Choi, 2015) and external evaluation (Amabile, 1979) and their relationship to creativity.

Also, most of the abovementioned studies have only tested the direct relationship, with mixed results, thereby calling for further research to examine potential mediators and moderators that can affect the nature of the relationship (Carmeli, Cohen-Meitar & Elizur, 2007).

This study will use the componential model of creativity and innovation in organisations (Amabile, 1988) to investigate the research question. Also, as explained in Chapter 1, the theory contained the two kinds of motivation factors: intrinsic task motivation and organisational motivation to innovate (Amabile, 1997).

**Table 2.2: Summary of creativity studies conducted in Arab countries**

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
1	Rice (2003)	To identify the influence of cultural variables on creativity and innovation processes in the Arabian Gulf countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE.	Conceptual paper	1) The author developed a conceptual framework that clarifies how the process of knowledge-creation in organisations might be moderated by cultural variables. 2) The author suggested managerial guidelines that could help overcome creativity and culture challenges in the Arabian Gulf countries.	The author discussed the influence of culture and external factors such as family and religion on creativity. This support eliminating the impact of external factors may be considered a limitation in most of current creativity and innovation theories.	1) The paper discussed creativity and innovation in general. 2) The model focused only on culture. 3) The proposed model has not been empirically examined.
2	Politis (2005)	To investigate the relationship between aspects of dispersed self-management leadership and work contextual dimensions that support creativity and productivity in	Quantitative methodology (survey)	1) There is a positive and significant relationship between dispersed leadership and the stimulant aspects of the work context for creativity. 2) There is a negative and significant relationship between dispersed leadership, with the	The research emphasised the role of the leader in facilitating work context and situation for employee creativity and productivity.	1)The study used a quantitative method; there is a need for other methods such as case or longitudinal studies to provide more details. 2) There is a need to investigate other studies

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
3	Mostafa (2005)	<p>high-technology organisations in the UAE.</p> <p>1) To understand how Egyptian managers recognise creativity and innovativeness.</p> <p>2) To evaluate the construct validity of two measures of creativity and innovation to understand factors that encourage or impede creativity in Egyptian</p>	Quantitative methodology (survey)	<p>exception of promoting self-reinforcement, and the obstacle aspects of the work environment for creativity.</p> <p>3) The results indicated that the stimulant aspects of the work context for creativity have a positive and significant impact on creativity and productivity.</p> <p>1) There is a relationship between managers' attitude towards organisational creativity and their functional areas in the workplace.</p> <p>2) There is a relationship between managers' education and the adaptation of creativity and innovation.</p> <p>3) Male managers have stronger attitudes towards creativity than</p>	<p>1) The study was investigated in a new context; Egyptian organisations.</p>	<p>in public-sector organisations.</p> <p>3) The sample size was small, as the study included 104 participants.</p> <p>1) There is a need to conduct the study in other Arab countries to generalise the results.</p>

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
4	Rice (2006)	organisations.  To investigate the influence of individual values and organisational context on employee creativity in nine Egyptian organisations.	Quantitative methodology (survey)	female managers do. 1) Employees who consider self-direction as a comparatively significant value perceive themselves as more creative in the organisation than employees with conformity or power as preferred values. 2) Supportive supervision and a caring, consultative work context positively influences employee creativity.	1) The achieved outcomes support creativity contextual theories. 2) The study provided good recommendations for leaders and researchers.	1) The study contained both public and private-sector organisations and a variety of products and services. However, the results did not represent sectoral differences or the nature of the industries. 2) Qualitative interviews were needed to identify factors that Egyptian employees believe may assist with creativity.
5	Mostafa & El-Masry (2008)	To investigate the influence of nationality, gender and age among future marketing managers in Egypt and	A cross-cultural study (survey)	1) There is a difference between Egyptians and British managers in terms of their attitudes towards organisational creativity obstacles.	1) The research helps to better understand factors related to organisational creativity barriers in Egypt and the UK.	1) The participants were not managers; they were potential future managers who gained their knowledge of business

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
6	Politis & Politis (2010)	<p>the UK in terms of recognising creativity obstacles.</p> <p>To investigate the influence of creative work, contextual factors and organisational bureaucracy dimensions on the constructs of creativity and innovation in several service organisations in the UAE.</p>	Quantitative methodology (survey)	<p>2) Both gender and age have important impacts on attitudes towards creativity obstacles.</p> <p>The results showed a strong and statistically significant relationship between stimulant determinants of the creative work environment with employee creativity and innovation. In contrast, the dimension of organisational impediment had a negative influence on innovation. The findings also showed that organisational bureaucracy factors had a moderate, negative influence on creativity and innovation.</p>	It provided information about new practice in a new region.	<p>by participating in a university program. Thus, they may not be representative of all managers.</p> <p>1) The study employed a quantitative method that could not provide reasons for relationships between phenomena. Thus, future qualitative exploratory study is needed to provide more details about the bureaucracy–creativity/innovation relationship.</p> <p>2) The study focused only on work context factors; there is a need to</p>

Study	Authors	Aims/Objectives	Methodology	Findings	Strengths	Weaknesses
7	Iqbal (2011)	To investigate the existing effort towards organisational creativity and innovation in Saudi Arabia. To discover the obstacles towards creativity and innovation in terms of organisational effectiveness.	Conceptual paper	Introduced a model for innovation in Saudi Arabia drawn from the experience of top innovation-oriented countries. The components are: government commitment, support and investment; education industry linkage, HRD, R&D and international benchmarking, infrastructure support, technology transfer and management flexibility.	The study proved that both factors (internal and external) influenced creativity and innovation. This expanded the literature, particularly regarding government commitment as a related factor.	discuss other factors that influence employee creativity and productivity such as individual characteristics.  1) The study was not empirically examined.
8	ElMelegy	To examine factors that	Quantitative	There is a positive relationship	The study is among the first	The study has focused on

<b>Study</b>	<b>Authors</b>	<b>Aims/Objectives</b>	<b>Methodology</b>	<b>Findings</b>	<b>Strengths</b>	<b>Weaknesses</b>
	et al., (2016)	promote employee creativity in the creative work context in Saudi Arabian architectural firms.	methodology (survey)	between employee creativity and several variables: lack of organisational impediments, sufficient resources, realistic workload pressure, freedom, challenging work, management encouragement and work group support.	empirical creativity studies conducted in Saudi Arabia. The study used SEM to analyse data. Limited studies have used SEM in the creativity field.	private-sector organisations. Thus, there is a need for other empirical studies to be conducted in public organisations.



Crutchfield (1962, cited in Prabhu, Sutton & Sauser, 2008, p. 57) argued that both extrinsic and intrinsic motivation encourages creativity. However, previous studies have focused more on examining the relationship between intrinsic task motivation and employee creativity (e.g., Ganesan & Weitz, 1996; Eisenberger & Rhoades, 2001; Shin & Zhou, 2003; Eder & Sawyer, 2008).

In terms of organisational motivation to innovate, according to Amabile et al. (1996), organisational motivation to innovate is a summated variable that contains organisational encouragement and a lack of organisational impediments. Prior research has examined the effect of each component of organisational motivation to innovate separately on employees' creativity: organisational encouragement (e.g., Chang et al., 2014; Birdi, Leach & Magadley, 2016) and lack of organisational impediments (e.g., ElMelegy et al., 2016). As mentioned earlier, Amabile and Pratt (2016) prioritised organisational motivation to innovate. Thus, there is a need to empirically examine the direct and indirect effects of organisational motivation to innovate as summated variable on employees' creativity.

Fourth, in the context of the UAE in general and the Dubai government in particular, as discussed in Chapter 1, several principles of private-sector organisations have been adopted by public-sector entities. For example, Afkari, a government initiative to support, encourage and finance creative ideas, launched the m-Government initiative, the fourth cycle of the UAE Government Excellence System. In addition to the above federal-level practices, the Dubai government followed the excellence models in its public-sector organisations (McAdam et al., 2013) such as the Dubai Government Excellence Program, in addition to other creative initiatives such as hosting Expo 2020, creating an online suggestion system to encourage the public to submit suggestions that can improve performance.

Thus, based on the above argument, NPM reform has been implemented in the UAE context, particularly in the Dubai government. However, there is a need to recognise how this reform affects outcomes such as employee creativity. Additional studies are required in non-Western countries to ensure that adopting NPM principles leads public-sector groups to achieve similar outcomes to private-sector organisations.

Limited studies examined the impact of adopting NPM principles in non-Western countries (Jingjit & Fotaki, 2010). Hence, further empirical studies are required to clarify that adopting NPM principles (such as creativity) in public-sector organisations would lead to the same results as it has in the private sector. Most creativity studies have been conducted in private-sector organisations (e.g., Axtell et al., 2000; Bommer & Jalajas, 2002; Rasulzada & Dackert, 2009; Gumusluoglu & Ilsev, 2009; Tseng & Liu, 2011; Larson, 2011; Lin, 2011; Jiang, Wang & Zhao, 2012); fewer examined the public sector (e.g., Berman & Kim, 2010).

So far, few studies have examined the influence of individual/work climate on employees' creativity in the UAE (e.g., Politis, 2005; Politis & Politis, 2010; Dayan, Zacca & Di Benedetto, 2013). Moreover, UAE workplaces have not prioritised research into the potential impact of external factors outside the organisations on employees' creativity.

Thus, there is a need to address several questions: Would creativity practices adopted in new regions (e.g., Dubai government organisations) that applied NPM principles show similar results as in Western countries? Since the creativity literature has shown conflicting results in terms of direction of the relationship between different factors and employee creativity, what is the nature of this relationship in the Dubai government context? Do external work climate factors in public organisations influence employees' creativity? What would be the direct and mediating impact of organisational motivation to innovate being prioritised (as suggested by Amabile and Pratt [2016]) on employees' creativity?

These questions should be investigated in a new context in which the government considers creativity among its priorities. The purpose of this thesis is to empirically investigate these questions.

## **2.20 Summary**

This chapter has examined many topics: the nature of public and private-sector organisations, NPM (adopted by private organisations), the power of government on different organisations, creativity and its main theories, creative work climate and

factors that influence employees' creativity. Key findings from the literature were then presented, including the noticeable gaps.

As stated in Chapter 1, to answer the research question, this thesis employed a mixed method approach. Chapter 3 will discuss the methodology used in the qualitative cycle of the research.

## **Chapter 3: Methodology—Qualitative Cycle**

### **3.1 Introduction**

Chapter 2 presented the literature review. It was concluded that little is known about creativity in public-sector organisations that adopt NPM policies in general, and in the Dubai government organisational context in particular.

The purpose of this chapter is to justify the qualitative cycle of research methodology used to gather data. Thus, the chapter begins by explaining the exploratory purpose and the research design, focusing only on the qualitative cycle. Next, a description of the participants and the organisational context are discussed, followed by a description of the data collection procedures and ethical issues. Further, this chapter discusses the instruments used in this cycle and data analysis process to analyse the findings. Finally, a summary of the overall chapter is provided.

### **3.2 Purpose of the study**

Sekaran and Bougie (2013) classified the purposes of research into three types: exploratory, descriptive and casual. The authors clarified that choosing the appropriate purpose relies on the extent of the available knowledge. Exploratory study is conducted when little is known about the situation, or no information exists on comparable problems or how similar matters have been solved previously.

The justification of selecting exploratory research is discussed in Chapter 1. Currently, creativity is part of the Dubai government's strategic plan, vision and mission. Hence, all Dubai government organisations apply multiple initiatives to enhance creativity. However, few empirical studies have been conducted within the UAE to identify the factors that influence creativity (Politis 2005, 2015; Politis & Politis, 2010) and resource-related and individual-related variables (Dayan, Zacca & Di Benedetto, 2013).

In relation to the objective and the research question, and following Sekaran and Bougie's (2013) recommendation for the applicability of exploratory research when little is known about the area of study, this study took an exploratory perspective

because it aimed to explore creativity specifically within Dubai government organisations, and research in this area is lacking.

### **3.3 Research design**

Sekaran and Bougie (2013, p. 95) defined research design as a blueprint for the collection, measurement and analysis of data, based on the research questions of the study. As will be demonstrated in Chapter 6, a mixed method approach was used to conduct this study, which has an exploratory/qualitative cycle followed by quantitative design with data collected through a questionnaire. This chapter will focus only on the qualitative cycle. Further details on the full methodology will be provided in Chapter 6.

#### **3.3.1 Cycle 1: Qualitative phase of data collection**

Myers (2009) argued that qualitative research methods were introduced in the social sciences to help researchers investigate social and cultural phenomena. Qualitative researchers demonstrated that conducting qualitative research is considered the most effective to realise individual motivations, their rationales and context for their beliefs and actions in an in-depth manner (Myers, 2009).

Thus, interviews were conducted with key decision-makers to create a comprehensive summary of Dubai government organisational motivations related to:

- 1) Identifying how creativity and innovation are defined and if both concepts are related to each other
- 2) Highlighting the adaptation of creativity and innovation in public-sector organisations
- 3) Recognising factors that influence employees' creativity in Dubai government organisations.

#### **3.3.2 Pilot study for the survey**

Pilot study is regarded as a fundamental phase in the research process. Indeed, well-designed and well-run pilot studies can inform researchers about the most appropriate research process and, sometimes, about likely findings (Teijlingen et al., 2000). Connelly (2008) demonstrated that a pilot study can be conducted at one site to test

processes that will then be used for multi-site research. Hence, a pilot study test was conducted for research Cycles 1 and 2 of the research design.

### **3.4 Sampling design**

Multistage purposeful was selected as a sampling design for this research. According to Collins, Onwuegbuzie and Jiao (2007), multistage purposeful refers to ‘choosing settings, groups and/or individuals representing a sample in two or more stages in which all stages reflect purposive sampling of participants’ (p. 85).

The justifications for selecting this design will be discussed in Chapter 6. Section 3.5 will focus on population and sample for Cycle 1 of the research design.

### **3.5 Population and sample for Cycle 1—Qualitative interviews**

Teddlie and Yu (2007) defined purposive sampling as ‘selecting units (e.g., individuals, groups of individuals and institutions) based on specific purposes associated with answering a research study’s questions’ (p. 77). Thus, the chosen sample was ideal to investigate the research question.

The population for this study included local and expatriate key decision-makers who are involved with creativity in Dubai government organisations. Consequently, the sample of this cycle for the study was narrowed down to local and expatriate employees working in one of three Dubai government organisations that focus on creativity. Seven of key decision-makers were UAE nationals, while two of them were expatriate; one was from Egypt and the other one was from Jordan (Datilts about nationality of key decision-makers are provided in Appendix 7).

Drawing from Rowley (2012), a useful guide for new researchers is to seek to conduct 12 interviews, each of approximately 30 minutes, or the equivalent (e.g., six to eight interviews of approximately one hour). For extended research, additional interviews can be conducted in the second phase, if required.

To determine the adequate amount of interviews required for qualitative studies, many scholars depend on theoretical saturation, which is defined as ‘the point at which no unique information or themes are observed in the data’ (Guest, Bunce & Johnson, 2006, p 59). However, there was disagreement among scholars regarding the

saturation point, which varies from six interviews (Johansson, Fried & Berggren, 2013) to 12 interviews (Guest, Bunce & Johnson, 2006).

Regarding sample homogeneity, Guest, Bunce and Johnson (2006) discussed the significance of a certain degree of respondents' homogeneity. In purposive samples, the more similar respondents in a sample are in their expertise, the sooner researchers can predict the saturation point. Thus, respondents were homogeneous in the sense that they were key decision-makers involved in creativity, who are not easily available; conducting nine interviews, each of approximately one hour, helped to reach data saturation.

### **3.6 Instruments for Cycle 1—Qualitative interviews**

In this study, two main approaches were used to answer the research question: a semi-structured interview was utilised for the qualitative strand, while a survey questionnaire was used for the quantitative strand.

An interview is a 'face-to-face verbal exchange in which one person, the interviewer, attempts to acquire information from and gain an understanding of another person, the interviewee' (Rowley, 2012, p. 260). Qu and Dumay (2011) defined interview method as 'the art of questioning and interpreting the answers' (p. 243).

Interviews have become a significant tool for qualitative scholars. Many qualitative methods depend greatly or solely on interviews as the major data collection mechanism (Knox & Burkard, 2009). The goal of interviews is to add interviewees' perspectives to the body of knowledge (DiCicco-Bloom & Crabtree, 2006).

Semi-structured interviews are based on prepared questioning directed by recognised themes in a convenient and systematic way, interposed with probes planned to elicit more detailed answers (Qu & Dumay, 2011, p. 244).

### **3.7 Justifications for conducting individual semi-structural interviews**

This cycle of the research used individual interviews to collect data for several reasons. First, interviews are considered a constructive technique for researchers to learn about others' worlds and generate a rich dataset (Qu & Dumay, 2011). As there was insufficient knowledge about creativity and its influencing factors, interviewees

were asked questions that would generate vital data to better understand, based on their experiences, the phenomenon under investigation.

Second, suitably designed interviews and properly chosen interviewees generate a variety of insights and useful understandings (Rowley, 2012). More specifically, semi-structured interviews were adopted in Cycle 1 to collect data. Nardi (2014) believed that these interviews are perfectly matched with exploratory research. Semi-structured interviews helped achieve the data collection goals of this cycle.

Third, Qu and Dumay (2011) illustrated that these kinds of interviews are flexible, attainable, understandable, more significant, and able to disclose central and often unknown features of individual and organisational behaviour. As a result, various management and organisational matters, like employee motivation or dysfunctional behaviour, can be investigated by this approach.

Finally, semi-structured interviews provide interviewees with the opportunity to add expert insight, whereas the researcher's formerly prepared questions also present some focus (Myers, 2009).

### **3.8 Ethical considerations**

Qu and Dumay (2011) stated that it is essential to consider ethical issues when carrying out interviews. DiCicco-Bloom and Crabtree (2006) focused on four ethical issues:

- 1) Reducing the risk of unanticipated harm
- 2) Protecting the interviewee's information
- 3) Effectively informing interviewees about the nature of the study
- 4) Reducing the risk of exploitation.

Thus, all the required information and documents concerning the research were provided to the University of Wollongong (UOW) Human Research Ethics Committee. The first cycle of qualitative interviews was approved by the UOW Human Research Ethics Committee (Ethics Number: HE13/539, approval date: 30 January 2014) (see Appendix 1).



### **3.9 Data collection**

Primary qualitative data, including the pilot study and the main interviews, were used in the qualitative data collection process.

#### **3.9.1 Pilot study for interviews**

The participants of the pilot study consisted of the respondents from one of the organisations that participated in the study. Two pilot interviews with senior employees were conducted at their workplace. One interviewee was male and another was female. The purpose of pilot interviews was to test whether the interview questions were clear and easy to understand. Each pilot interview took around 45 minutes. The results indicated that all questions were clear.

#### **3.9.2 The main interviews**

The interview process was done at participants' workplaces. Before conducting the interviews, letters detailing the study and the motivation behind it, as approved by the UOW Human Research Ethics Committee, were provided to the respective human resources departments in participants' organisations. They were requested to distribute this letter to the selected key decision-makers.

Knox and Burkard (2009) stated that all potential participants should receive adequate information for their completion of the necessary informed consent forms. Thus, the interview questions, participant information sheet (see Appendix 2) and consent form (see Appendix 3) were sent to selected participants.

Semi-structured interviews, in addition to probe questions, were conducted in Arabic with nine key decision-makers in three Dubai government organisations. An interview protocol (see Appendix 4) was used to structure the interview to ensure that the aims of the research were maintained.

Thus, nine face-to-face interviews were conducted one-to-one with each individual. All interviews followed the same protocol. Each interview began by introducing the researcher, explaining the topic and the goals of the interview, and highlighting the participant information sheet and consent form. The researcher asked all interviewees

to sign the consent form, which they did. The researcher delivered the above information in approximately two minutes.

On average, the interviews lasted around one hour, ranging from 46 minutes to 1.5 hours. All interviews were audiotaped and transcribed, as per the UOW Human Research Ethics Committee request.

### **3.9.3 Interview protocol**

Flick (2014) stated that the use of extant literature helps qualitative researchers answer different questions, such as: What is previously known about the specific topic or the field in general? Which theories are utilised and argued in this field? Which terms are used or debated? What are the conceptual or methodological arguments in this field? What questions have not yet been handled? What has not been examined so far?

As mentioned in Chapter 2, the major directions in creativity literature are:

- 1) The identification approach, which focuses on enhancing cognitive and personality tests, is capable of distinguishing relatively more-or-less creative individuals
- 2) Organisational factors in the work context that tend to inhibit or encourage employees' creativity

Therefore, the interview protocol drew from the main themes in the literature: different individual and work context factors related to creativity in the workplace.

As clarified in Chapter 1, Dubai government organisations prioritise creativity and adopt some principles used in the private sector. Despite this, limited studies have examined creativity in the UAE context (e.g., Politis, 2005, 2015; Politis & Politis, 2010; Dayan, Zacca & Di Benedetto, 2013). Therefore, the questions were designed to help in understanding different aspects of creativity, and factors that influence employees' creativity in Dubai government organisations.

Therefore, the primary questions in each interview were designed to fulfil the goals of this cycle. Most questions were adapted from the relevant literature (see Table 4.1).

The interview protocol contained five questions about creativity in public-sector organisations.

**Table 4.1: Interview questions adapted from the relevant literature**

Q. No.	Question	Source
1	In the context of your organisation, what do you mean by ‘creativity’?	Wood (2003), Martins and Terblanche (2003), Paulus and Dzindolet (2008)
2	In the context of your organisation, what do you mean by ‘innovation’?	Martins and Terblanche (2003), Wood (2003), Paulus and Dzindolet (2008)
3	In your opinion, what is the relationship between creativity and innovation?	Alves et al. (2007); Çokpekin and Knudsen (2012), Zhou and Hoever (2014)
4	What type of support is made available to the participants to enhance their creativity ? (Probe: Supervisory support, peer support, work conditions influence employees creativity?)	Siegel and Kaemmerer (1978), Amabile et al. (1996), Isaksen et al. (2000–2001), Martins and Terblanche (2003), Zdunczyk and Blenkinsopp (2007)
5	Are there any challenges in achieving the expected benefits? If so, what are they? How are you addressing these challenges?	Amabile et al. (1996), Isaksen et al. (2000–2001), Sadi and Al-Dubaisi (2008), Ohly and Fritz (2010), Walter (2012)

### 3.10 Data analysis process

Ravitch and Carl (2016) defined qualitative data analysis as ‘the intentional, systemic scrutiny of data at various stages moments throughout the research process’ (p. 217). The authors mentioned that scrutiny involves the specific processes of data organisations and management, immersive engagement with data and writing and representation.

According to Creswell (2014), qualitative methods have distinctive steps in data analysis. Pickard (2013) demonstrated that qualitative analysis is used in any research that concentrates on emerging theory, using inductive analysis to understand the phenomenon under examination.

Thus, data obtained from the semi-structured interviews were analysed separately. It was expected that the findings of the qualitative analysis would inform the theory chosen for the study and help address the research question.

Further, greater detail about the data analysis, thematic analysis, coding, software used for qualitative data analysis, transcription and translation will be discussed in Chapter 4.

### **3.11 Summary**

This chapter has outlined the justifications for the exploratory qualitative cycle of the research design. The target sample for this cycle has been described and ethical issues have been discussed. Finally, the use of semi-structured interviews as a data collection method has been explored.

Chapter 4 presents the data analysis, findings and discussion of the qualitative cycle of the research design.

# **Chapter 4: Analysis, Findings and Discussion of the Qualitative Cycle**

## **4.1 Introduction**

Chapter 3 explained the details of the exploratory qualitative research methodology used to gather data from nine key decision-makers in three Dubai government organisations.

As per Cycle 1 of the research design, the aims of interviews were to:

- 1) Identify how creativity and innovation are defined and if both concepts are related to each other or not
- 2) Highlight the adaptation of creativity in public-sector organisations
- 3) Recognise factors that influence creativity in Dubai government organisations.

Thus, the purpose of this chapter is to introduce the qualitative analysis techniques used to analyse the data and to summarise the emerging key themes. Moreover, personal profiles of the nine key decision-makers will be outlined. Finally, the results and discussion of Cycle 1 (qualitative interviews) will be presented.

As discussed in Chapter 1, the UAE in general and the Dubai government in particular, apply NPM, which means they have adopted some practices of private-sector organisations. Additionally, both the UAE and the Dubai government have been at the forefront of encouraging creativity development in the public sector. Moreover, Dubai government organisations have issued several rules relating to creativity and innovation. However, limited studies have addressed factors that influence employees' creativity (Politis 2005; Politis & Politis, 2010; Dayan, Zacca & Di Benedetto, 2013). As a result, there is a lack of clarity regarding creativity in Dubai government organisations.

## **4.2 Qualitative analysis**

Savin-Baden and Major (2013) defined qualitative data analysis as 'an ongoing process that involves breaking data into meaningful parts for the purpose of

examining them' (p. 434). There is disagreement in terms of beginning data analysis. According to Higginbottom (2015), preliminary data analysis starts during data collection, while Padgett (2008) stated that it begins soon after data collection starts. Rowley (2012) asserted that data analysis contains four main elements:

- 1) 'Organizing the data set
- 2) Getting acquainted with the data
- 3) Classifying, coding, and interpreting the data
- 4) Presenting and writing up the data' (p. 268).

Sections 4.2.1–4.2.5 will provide details about coding, thematic analysis, the software used for qualitative data analysis, transcription and translation.

#### **4.2.1 Coding**

Coding is a 'process of tagging the text or other qualitative data using a system of categories' (Remler & Ryzin, 2015, p. 79). Higginbottom (2015) mentioned that codes are the fundamental units of data analysis in several qualitative studies.

Creswell (2014) stated that coding encompasses taking text data or pictures gathered during the data collection stage, breaking sentences (or paragraphs) or images into groups and labelling those groups, usually with a name in the language of the participants. According to Padgett (2008), there are several approaches for coding and it occurs at many levels. Savin-Baden and Major (2013) clarified that a code must have a significant name that refers to the ideas included in the data segment.

The literature cited two types of coding:

- 1) Deductive coding is created by the researcher, not developed during data analysis. It originates in matters considered during the design cycle (Hennink, Hutter & Balley, 2011) and is developed from pondering a theory or previous research (Remler & Ryzin, 2015).
- 2) Inductive coding can be created by further reading and analysis of qualitative data (Remler & Ryzin, 2015). It comes immediately from the data and is generated from the observation of the issues discussed by participants. It is highly valuable because it represents the issues of significance to participants,

which might differ from those expected by the researcher (Hennink, Hutter & Balley, 2011).

Previous creativity-related research has used predetermined codes to analyse participants' answers. Thus, deductive coding was used in this study based on emerging theories in creativity (e.g., Woodman, Sawyer & Griffin, 1993; Amabile et al., 1996; Amabile, 1988; Martins & Martins, 2002; O'Shea & Buckley, 2007).

Codes were influenced by the data, the relevant literature (e.g., creativity and creativity in public-sector organisations), the thesis objective and the research question. Moreover, it was observed that occasionally, various codes emerged in the same text.

#### **4.2.2 Thematic analysis**

Savin-Baden and Major (2013) defined a theme as 'a unifying or dominant idea in a data and finding themes is at the heart of the data analysis process' (p. 427). Padgett (2008) asserted that coding and thematic development are widely used to analyse qualitative data. Savin-Baden and Major (2013) illustrated that thematic analysis is considered one of the main methods of qualitative data analysis. It is defined as 'a qualitative method for uncovering a collection of themes, 'some level of patterned response or meaning' (Braun & Clarke, 2006, cited in Fugard & Potts, 2015, p. 669) 'within a data-set' (Fugard & Potts, 2015, p. 669). According to Hennink, Hutter and Balley (2011), thematic analysis is often used to analyse qualitative data.

There are several justifications for using thematic analysis to analyse qualitative data:

- 1) It has been used in different fields such as psychology, social research and health care. A sample size required to conduct thematic analysis ranges from two to over 400 participants (Fugard & Potts, 2015), which means that this tool suits most studies, regardless of sample size.
- 2) It is flexible and has the potential to introduce unexpected insights (Yildiran & Holt, 2014).

Creswell (2014) mentioned that beyond recognising the themes during the coding process, the researcher can do much with themes to develop extra layers of complex

analysis. Themes are analysed for every individual case, and across various cases, or shaped into general descriptions.

Savin-Baden and Major (2013) demonstrated that when codes and categories have been introduced, they are converted into themes. Additionally, Rowley (2012) argued that major subthemes under each major theme must be recognised, reported and demonstrated through the use of quotations from individual interviewees.

Appendix 5 presents the coding, main themes and their layers used in this study. Appendix 6 shows statements regarding government regulation and incentives as external factors that influence employees' creativity in the workplace, which was a major contribution to extant knowledge.

Thus, on completion of the interviews with nine key decision-makers, the qualitative analysis process began. With the goal of exploring creativity in Dubai government organisations, a thematic analysis based on the literature was used to code the data. The data obtained from the semi-structured interviews were analysed by focusing on thematic analysis.

Themes related to creativity, the nature of creativity in public organisations and factors influencing employees' creativity were identified during the coding process. A maximum of three layers of nodes was used in coding to conduct a fine-grained analysis of the qualitative data.

#### **4.2.3 Qualitative data analysis software**

Savin-Baden and Major (2013) mentioned that using software programs to analyse qualitative data has several advantages. Software assists researchers managing huge volumes of text by providing rapid counts and presenting information. Moreover, software is regarded as useful when a range of researchers from various places work on research together because it helps them to share data.

Several scholars considered NVivo software one of commonly used programs to analyse qualitative data (e.g., Savin-Baden & Major, 2013; Remler & Ryzin, 2015). Rowley (2012) stated that NVivo software is very helpful in simplifying the analysis of interview transcripts. Thus, NVivo 11 was used to analyse the qualitative data.



#### **4.2.4 Transcription**

Transcription is a form of data transformation that can either enrich or disadvantage a study (MacClean, Meyer & Estble, 2004, cited in Padgett, 2008, p. 135). Padgett (2008) recommended that transcription should be done by the researcher when possible to achieve the capacity to:

- 1) Fill in vague passages
- 2) Add details or clarification
- 3) Obtain timely feedback on individual interview tools.

Flich (2014) suggested using recording technology to obtain the greatest accuracy possible of the situation that led to data collection (related to both research question and conceptual model). All text in the nine interviews were analysed and coded. Subcategories were created as they emerged in the transcribed interviews. Thus, transcripts were analysed using the series of codes developed during the comprehensive literature review. The researcher then coded each interview separately. The main themes and subthemes that developed are depicted in Table 4.2.

Moreover, as mentioned in Chapter 3, audiotaping the interviews was requested by the UOW Human Research Ethics Committee. Thus, all interviews were audio recorded to facilitate the transcription process.

#### **4.2.5 Translation**

According to Marshall and Rossman (2016), issues related to translating one language into another are more complicated than those associated with transcription. The reason is that translation comprises more challenging issues of connotation and meaning. Thus, researchers must consider:

- 1) Whether to recognise the translation act in the study's report
- 2) Whether the researcher is also the translator
- 3) Whether to include the translator in the analysis process.

Arabic is the official language of the UAE, although English is used widely (Abdulla, Djebarni & Mellahi, 2011). Despite this, the research determined that the interview language should be Arabic to avoid potential bias. Thus, semi-structured interviews

were conducted in Arabic. After the interviews, the researcher translated the Arabic into English.

To ensure the validity of the translation, back translation was conducted by an independent expert. A thematic analysis using NVivo 11 was conducted to identify core themes.

### 4.3 Personal profiles of the nine key decision-makers

In Appendix 7, the personal profiles of the respondents are shown in terms of the gender, education level and profession. Regarding gender, all respondents were male, although two female key decision-makers initially agreed to participate. However, they refused to be audio recorded, which was a strict UOW Research Ethics Committee requirement. In terms of education, only one respondent had a PhD, almost half had a masters degree and the rest had bachelor degrees. Four participants were recognised as leaders, while five were supervisors.

### 4.4 Key themes

Table 4.2 summarises the main themes that emerged during analysis. The findings were grouped into five themes to analyse the insights of respondents. These themes were categorised into one main section: creativity in Dubai government organisations.

**Table 4.2: Summary of the main themes related to creativity in Dubai government organisations**

	Theme	Subthemes	Source
1	Creativity conceptualisation	Novelty	Udwadia (1990), Amabile (1997), Paulus and Dzindolet (2008), Shin et al., (2012)
		Idea generation	Amabile (1988), Runco (2004), Cheung, Roskas and Fischer (2006), Klijn and Tomic (2010)
		Idea development	Wood (2003)

2	Innovation conceptualisation	Idea implementation	Van de Ven (1986), Oldham and Cummings (1996), Amabile (1996), Wood (2003), Paulus and Dzindolet (2008)
		Improvement of existing ideas	Van de Ven (1986)
		Something new in the workplace	Damanpour (1991), Heye (2006)
3	The relationship between creativity and innovation	Creativity leads to innovation	Udwadia (1990), Scott and Bruce (1994), West et al., (2004), Bassett-Jones (2005), Yusuf (2009), Jiang, Wang and Zhao (2012), Rosso (2014)
		No relationship emerged between creativity and innovation	Mintzberg et al., (2001, cited in Borghini, 2005)
4	Application of creativity and innovation in Dubai government organisations	Origin of creativity in public-sector organisations	Note: As a gap in the literature, these themes emerged in the findings of Cycle 1 of the research design
		Nature of creativity in public-sector organisations	

		The need for creativity and innovation in Dubai public-sector organisations	
5	Factors that influence creativity and innovation in Dubai government organisations	1- Individual factors	Amabile (1988, 1996)
		Work climate context	Amabile et al., (1996)
		Government incentives and regulations	Note: As a gap in the literature, this variable emerged in the findings of Cycle 1 of the research design

The following five themes emerged through qualitative phase of the data collection:

#### **4.4.1 Creativity conceptualisation**

Respondents were asked ‘In the context of your organisation, what do you mean by creativity?’. All respondents answered this question using different definitions for the concept. Some participants offered more than one definition. The definitions focused on three aspects.

##### ***Novelty***

All respondents agreed that creativity is something new within the organisation. For example, Respondent 4 defined creativity as a novel thing that has advantages for an organisation:

Creativity is something new that we have made it available to solve a problem or to speed up a process, transaction or services.

### ***Idea generation***

In addition to the previous definition, according to Respondent 8, creativity begins from an idea:

Creativity is originally an idea.

### ***Development of existing things***

Respondent 3 added another dimension to the definition of creativity. According to him, creativity is about the development of existing ideas and processes in the workplace:

Creativity is something (that) exists but you've developed it. The content of development is that we add something that has not existed. So, this is the concept of creativity for us.

The use of multiple definitions for creativity was supported in the literature. Due to the nature of creativity, which is characterised as complex and multifaceted (Treffinger et al., 2002), various aspects contribute to its improvement and expression (Basadur & Hausdorf, 1996); it can be illustrated in numerous ways (Runco, 2004).

Also in their definitions, respondents considered that creativity exists in the workplace. Creativity literature shows that since the 1990s, creativity has gradually been recognised as a topic of interest for organisational psychologists and management scholars (Zhou & Hoever, 2014). According to Cooper and Jayatilaka (2006), creativity within the organisational context has obtained an increasing amount of interest.

### **Novelty**

There was an agreement among respondents that creativity is a new emergence in the workplace. Further, scholars linked the concept to workplace settings (e.g., Udawadia, 1990, Amabile, 1996; Gurteen, 1998; Martins & Terblanche, 2004; Cheung, Roskams & Fisher, 2006; Heye, 2006; Paulus & Dzindolet, 2008; Klijn & Tomic, 2010). For example, Martins, Martins and Terblanche (2004) defined creativity as 'the generation of new and useful/valuable ideas for products, services, processes and procedures by individuals or groups in a specific organisational context' (p. 102). Klijn and Tomic

(2010) defined the concept as ‘the production of new and useful ideas or solutions by one or more individuals within a work environment’ (p. 323).

Creativity literature indicated that novelty is considered a main component in the definition of creativity (e.g., Udawadia, 1990; Amabile, 1997; Paulus & Dzindolet, 2008; Shin et al., 2012).

### **Idea generation**

A common theme in many definitions of creativity is the generation of ideas that are useful and solution-focused (e.g., Amabile, 1988; Runco, 2004; Cheung, Roskas & Fischer, 2006; Klijn & Tomic, 2010).

### **Development of existing things**

Few definitions in the literature support the notion that creativity is the development of existing things in the workplace. Wood (2003) defined creativity as ‘the recognition of an opportunity or the inspiration that develops an idea’ (p. 22).

#### **4.4.2 Innovation conceptualisation**

Respondents were asked ‘In your work context, how do you define innovation?’. All respondents answered this question using various terms. Further, some offered more than one definition. Most concentrated on three aspects.

##### ***Idea implementation***

Six respondents considered innovation the execution of ideas in the workplace. For instance:

Innovation is implementing the idea in the real life (Respondent 1).

##### ***Improvement of existing ideas***

Six respondents defined innovation as a process of improving existing ideas and/or methods in the workplace. For example:

Innovation is, in my point of view, development. It is something that exists, and someone has developed it, especially in a work field such as a particular mechanism (Respondent 5).

### ***Something new in the workplace***

Three respondents conceptualised innovation as a new idea or method introduced in the workplace. For example:

I think that innovation is when you come up with a way, a method, techniques have not been used before (Respondent 2).

Literature has supported the existence of multiple definitions for innovation. According to Crossan and Apaydin (2010), numerous definitions have been presented for innovation, each emphasising different aspects of the concept.

As seen the respondents definitions concentrated on the following three aspects:

#### **Idea implementation**

A common theme in the literature is the consideration of innovation as idea implementation. According to Klein and Sorra (1996) implementation is ‘the process of gaining targeted organisational members’ appropriate and committed use of an innovation’ (p. 1055). Amabile (1988) illustrated that the term ‘implementation’ in the definition of innovation is used to cover all aspects of improving and employing ideas. Borghini (2005) stated that implementing novel ideas in organisational settings helps to achieve competitive advantage through innovation. Thus, most scholars have defined innovation as related to the implementation of ideas (e.g., Van de Ven, 1986; Oldham & Cummings, 1996; Amabile, 1996; Wood, 2003; Paulus & Dzindolet, 2008).

#### **Improvement of existing ideas**

Some scholars have supported the above definition. For instance, Van de Ven (1986) defined innovation as ‘the development and implementation of new ideas by people who, over time, engage in transactions with others within an institution’ (p. 590). Heye (2006) defined the concept as ‘the transformation of a new idea into a new product or service, or an improvement in organisation or process’ (p. 253).

#### **Something new in the workplace**

Few scholars defined innovation as a new concept within organisations. Damanpour (1991) defined innovation as ‘a new product or service, a new production process technology, a new structure or administrative system, or a new plan or program pertaining to organisational members’ (p. 558).

#### **4.4.3 The relationship between creativity and innovation**

A main theme of the study was exploring the nature of the relationship between creativity and innovation. Respondents were asked ‘In your opinion, what is the relationship between creativity and innovation?’. Seven respondents indicated that creativity leads to innovation.

##### ***Creativity leads to innovation***

Most respondents reported that creativity is a starting point to innovation. For instance, two respondents believe that creativity is the first step to innovation:

I think innovation is built on creativity. I mean that, at the beginning, I should create something and then innovate (Respondent 9).

Notably, respondents focused only on the direction of the relationship between creativity and innovation; however, no judgement was made to explore in which level creativity and innovation take place in the organisations, except Respondent 4, who showed that creativity displays itself at the individual level. In terms of determining innovation level, he said ‘we’. As a key decision-maker, ‘we’ in the UAE work context represents the organisation the individual works for, but this was not explicitly stated:

I think that creativity, the individual, initially, creates something, start with it as creativity. Later, we innovate (Respondent 4).

Several types of relationships between creativity and innovation have been discussed in the literature.

##### **Creativity leads to innovation**

This direction was also reported by other scholars (e.g., Udawadia, 1990; Scott & Bruce, 1994; Amabile, 1996; West et al., 2004; Politis, 2005; Bassett-Jones, 2005; O’Shea & Buckley, 2007; Alves et al., 2007; Yusuf, 2009; Klijn & Tomic, 2010;



Sarri, Bakouros & Petridou, 2010; Jiang, Wang & Zhao, 2012; Çokpekin & Knudsen, 2012; Rosso, 2014; Zhou & Hoever, 2014). For instance, Amabile et al. (1996) stated that innovation begins with creative ideas. Alves et al. (2007) shared the same opinion and explored creativity as idea generation, while innovation transforms those ideas into new products or services; thus, innovation is the execution of creativity. Therefore, Klijn and Tomic (2010) highlighted that creativity is the keystone of innovation, and to promote innovation, it is significant to be aware of the process of creativity and its mediators. Çokpekin and Knudsen (2012) discussed that it has been assumed that encouraging creativity improves innovation.

### **No relationship emerged between creativity and innovation**

Few scholars asserted that there was no relationship between creativity and innovation. Mintzberg et al. (2001, cited in Borghini, 2005, p. 19) stated that organisational creativity does not relate to innovation because it can also be obtained through gradual change and is not compulsorily attributable to the discovery and adoption of new methods and rules. Instead, it is connected to the idea of more or less major structural change in the system, like the move from one arrangement to another in the competitive plan.

### **Creativity and innovation are the same**

The literature on creativity and innovation is closely associated (Heye, 2006; Shalley & Gilson, 2004). Both concepts were used interchangeably and many authors considered creativity and innovation as the same phenomenon (e.g., Martins & Terblanche, 2003; McLean, 2005; Mostafa, 2005). For instance, Mostafa (2005) used both concepts interchangeably and clarified 'that innovation or creativity refers to a systemic development and practical application of a new' (p. 8).

#### **4.4.4 Application of creativity in Dubai government organisations**

While respondents elaborated on the status of creativity and innovation in their workplace, the gathered data showed that a theme related to creativity in UAE, in particular to organisations in the public sector, emerged. Thus, all respondents discussed this theme.

### **Origin of creativity in public-sector organisations**

There was disagreement among respondents in terms of the origin of creativity in public-sector organisations:

I think that our organisation since 1966 has been interested in innovation and creativity (Respondent 1).

Conversely, two respondents mentioned that creativity is a new concept in the UAE, and the application of creativity represents the maturity of public-sector organisations.

For example:

I want you to keep in mind that it's a new subject, particularly in our area. So, having these initiatives in a government sector means that it's wise. I mean that, a government that is able to provide for the public sector is what makes it distinguished from other sectors, such as the private sector (Respondent 1).

### **Nature of creativity in public-sector organisations**

Four respondents explained that the creativity is one of the practices that the public sector has adopted from its private counterpart. For example:

Let's be clear; when your outcome of creativity is money, you need time to produce and perform, but in the government sector you are not looking for money, but for speed, reducing time, improving services. Here you will be faster because if you perform and apply today, the results will be seen directly. I think the government is a fertile field for creativity. As creativity is a tool that can be used in any sector; government, private or semi-government (Respondent 1).

Nowadays, the people in the private sector agree on having creativity and innovation. Why? Because they have a culture that creativity and innovation will increase the financial income. But in public sector or the government sector, the return is not necessarily financial income. The return is to achieve worker satisfaction (Respondent 3).

### **The need for creativity in Dubai public-sector organisations**

All respondents declared that the trend towards creativity is based on changes in the UAE governmental strategy to consider creativity part of the country's vision:

That is true, our orientation is different, apart from oil, which means that we previously relied on oil, then on tourism. But now, our orientation is different from the past ones (Respondent 7).

All respondents indicated that creativity is aligned with Dubai government strategic goals. It enables the Dubai government to achieve its missions, visions and strategic plans:

Our goals are all related to maintaining security, criminals' arrest, to control road security and readiness for disasters. These are our four main objectives. Creativity helps positivity in achieving these goals. For instance, in terms of crime prevention, we can create ways for the presence of patrols; it is possible to utilise cameras, it is possible to use planes without pilots, which have remotes control and cameras (Respondent 1).

Zhou and Hoever (2014) discussed that during the 1990s, creativity was addressed in organisational settings. However, there is lack of research that focuses on the origin of creativity in public-sector organisations. Some studies explored this topic in the 1990s in public-sector organisations in Western countries, such as Heinze's (1990) study of the New York state government and West and Berman's (1997) study of local US government.

Concerning the nature of creativity in public sector, four respondents mentioned creativity as a practice that has been conducted in the public sector, the private sector and semi-government organisations.

The literature has supported creativity's significance to employees working for both private and public-sector organisations (Egan, 2005). Loewenberger, Newton and Wick (2014) clarified that there is increasing pressure for public services to deliver more for less, generating a need for novel ideas, normally stifled by bureaucracy

Prior studies have agreed that practices of creativity are different in the public sector than the private sector. Grell (2013) illustrated that the public sector is considered largely rule-based, with restricted flexibility or space for creative action. Rangarajan (2008) showed that most creativity studies were conducted in the private sector, while only few concentrated on government organisations. The author justified this by assuming that government organisations are essentially incapable of presenting creativity, compared to the private sector.

Finally, in terms of the need for creativity in Dubai public-sector organisations, the literature has emphasised the need for creativity in public-sector organisations for different reasons. Recently, several public-sector organisations have focused on investigating creativity (e.g., Healey, 2004; Mack, Green & Vedlitz, 2008; Berman & Kim, 2010). Bartlett and Dibben (2002) elaborated that due to increased fiscal pressure, the public sector must maximise efficiency, innovate and discover new techniques to achieve more with less.

Thus, several governments are adopting creativity. For example, Berman and Kim (2010) illustrated the current practices of creativity management as a strategy in the Seoul Metropolitan Government to enhance the initiative by modifying reward, management and training systems. The results showed that creativity management is regarded as a useful approach for promoting novel ideas and solutions and expanding innovation practices in public organisations. Further, during a two-year period:

- 1) 13 per cent of employees' and managers' ideas were implemented
- 2) The percentage of officials who currently consider their divisions as innovative was doubled.

#### **4.4.5 Factors that influence employees' creativity in Dubai government organisations**

To identify factors that influence employees' creativity, respondents were asked the following questions:

- 'What type of support is made available to the participants to enhance their creativity? (Probe: Supervisory support, peer support, work conditions influence employees creativity?) '.

- 'Are there any challenges that employees face that impede their creativity? If so, what are they? How are you addressing these challenges? (probe: transfer of results) '.

- 'Are there relevant factors you would like to add that we might not have covered? '.

To answer these questions, all respondents discussed the factors. In addition to work context factors, others were also cited as having an impact on employee creativity; these factors are individual factors, and Dubai government regulation and incentives.

Thus, three types of factors that influence creativity were specified: individual factors, work context factors and government regulation and incentives.

### **Individual factors**

Seven respondents claimed that individual factors influence creativity and innovation. Based on their responses, individual factors can be categorised into three types: domain-relevant skills, creativity-relevant skills and intrinsic task motivation.

#### ***Domain-relevant skills***

Two respondents talked about the influence of employees' knowledge and their capabilities to perform creative tasks. For example, Respondent 4 clarified that an important element is that the individual does not depend on ordinary work methods and searches for innovative ways to work.

I do not want to rely on routine in my work. I must innovate in every idea. Whether the idea serves me internally, or serves the community and the government later, I should innovate (Respondent 4).

This respondent cited another example of the influence of employee knowledge on performing creative work:

For example, the person who just came in and gave me a paper, I noticed that this person got an advanced certificate in IT. And this person is working at the centre, I will shift him to work with me, and engage him in the IT department to create (Respondent 4).

Two respondents discussed the significance of employees' abilities to creative. For example:

I mean as employees' abilities, it instils in his thought this concept. Thus, you will see he explores his abilities involuntary, I mean that some employees have capabilities (Respondent 7).

#### ***Creativity-relevant skills***

Five respondents raised the importance of the additional requirements for performing creatively. For example, Respondent 1 acknowledged that the cognitive style of creative employees who consider new perspectives led the organisation to win several awards:

The reason behind our winning awards is our staff, innovative staff who applied innovative programs or certain creations (Respondent 1).

Three respondents discussed the influence of personal characteristics on creative outcomes. For example:

Some employees suggest innovative ideas: new ideas that were not in mind (Respondent 3).

If a person, for example, is more risk averse, his creativity would be less than a risk-taking person (Respondent 8).

### *Intrinsic task motivation*

Three respondents believed that task motivation is a principal factor of employees' creativity. For instance, two respondents discussed the positive effects of intrinsic motivation on employees' creativity:

It is about the employees' desire, because if the person has a high level of loyalty, he would like to stay with the organisation and develops the work (Respondent 2).

Respondent 8 highlighted employees' reasons for performing creative work:

Sometimes, I must think out of my comfort zone, to create or to improve a new way (Respondent 8).

In terms of the relationship between individual factors and creativity, respondents' views aligned with Amabile's (1997) componential theory of individual creativity. There are three key components of individual (or small team) creativity: domain-relevant skills, creativity-relevant skills and intrinsic task motivation.

First, the above findings support the domain-relevant skills as a component of Amabile's (1983) componential theory of individual creativity. As suggested by Amabile's (1988) theory, employees' factual knowledge, technical skills and special talents influence their creativity. For instance, Shalley and Gilson (2004) illustrated that employees' depth and breadth of knowledge is linked to creativity.

The bulk of research on creativity over the years has confirmed the positive impact of creativity-relevant skills on individuals' creativity (e.g., Amabile, 1989; Amabile

1996; Davis, 1997; Baer & Kaufman, 2005; Eder & Sawyer, 2008) For example, Amabile (1996) conducted an empirical study that showed that education and intelligence are positively related to creativity. Eder and Sawyer's (2008) study showed that domain-relevant skills, as measured by job self-efficacy, were positively related to employee creativity. The findings suggested that the most relevant techniques to achieve high levels of employee creativity are to ensure employees are educated in work processes, supported to perform and confident in their own creative capabilities.

Second, in terms of creativity-relevant skills, Chávez-Eakle, Eakle and Cruz-Fuentes (2012) stated that since the 1950s, creativity studies focused on highly-creative personalities. Several scholars tried to clarify the general traits of creative personalities, or personality diversity between highly creative or eminent people, which provided a catalyst for research in the field of creativity. Thus, most creativity empirical studies focused on its association with personal characteristics.

Tierney (1997) tested the relationship between work group cognitive climate and employees' creative efficacy. The results showed that the strength employees' perceptions of their abilities for creative work was more closely related with employees' individual cognitive styles. Finally, creativity-relevant skills depend on training (Amabile, 1988). Training is regarded as a tool that provides workers with guidance on how to generate new ideas as a standard performance task rather than an exception (Shalley & Gilson, 2004). Thus, the literature provided a very strong link respecting the association between creativity-relevant skills and individual creativity (e.g., Davis, 1997; Amabile, 1989; Baer & Kaufman, 2005).

Third, in terms of intrinsic task motivation, Deci (1971) argued that there are two kinds of motivation: extrinsic and intrinsic. According to Shalley and Gilson (2004), creativity requires some level of internal, supporting power that leads people to communicate with challenges inherent to creative work. Additionally, Ganesan and Weitz (1996) argued that intrinsic motivation boosts workforce risk-taking and creative behaviours.

Thus, several empirical studies have identified a positive relationship between intrinsic task motivation and individual creativity (e.g., Ganesan & Weitz, 1996; Shin

& Zhou, 2003; Eisenberger & Rhoades, 2001). For example, Shalley and Perry-Smith's (2001) study showed that participants had considerably higher creativity and intrinsic motivation when anticipating an informational rather than a controlling evaluation. Further, individuals provided with a creative example had higher creative outcomes than those who were not provided with an example.

### **Work context climate**

All respondents indicated that work context climate positively influenced employees' creativity. According to the data, the positive factors include several determinants:

#### ***Organisational encouragement***

All respondents clarified that their organisations enhance employee creativity. Therefore, several related systems have been developed: suggestions system, reward and recognition systems, and employees' annual performance appraisals system. Several examples were provided to support their arguments.

First, two respondents clarified that creativity has existed as part of OC for a long time. For example, Respondent 1 stated that their organisation has focused on creativity since 1966, which indicates that both concepts are part of their organisational climate:

Since 1966, our organisation has been interested in creativity, because employees' performance appraisal included innovation and creativity-related criteria (Respondent 1).

Second, seven respondents mentioned that reward and recognition systems stimulate creativity by clarifying to employees the potential benefits of generating ideas at work. For example, Respondent 7 explained that reward and recognition systems consider numbers of generated ideas:

Our suggestions section organises an annual forum in which all who have submitted suggestions are honoured. I mean, those whose suggestions have been accepted or not. All people who have suggested are honoured. Employees who submit the biggest number of suggestions are honoured and those whose suggestions have been implemented (Respondent 7).



Third, six respondents clarified that organisations conduct ceremonies to motivate employees. The owners of ideas and those who have implemented them are among those honoured:

We have a reward scheme related to the suggestion, whose suggestion is implemented will take x amount, and will be listed in the annual ceremony which is a big deal for us. This annual ceremony is for all the employees, the distinguished employees are honoured, and the employees who presented huge services to the organisation (Respondent 9).

Fourth, according to four respondents, employees' promotions consider creativity:

The promotions, of course, are restricted to Dubai government policy, which states that an employee's appraisals must be on the third level and must complete the period. These suggestions might be a support for the employee. Yes, there is an application promotion form that has a space in which the direct superior writes about the employees. This is one of the main things that are taken into consideration for the promotion (Respondent 7).

Further, Respondent 5 explained that in addition to promotion, employees are nominated for awards:

There is something that has been noticed during the recent period, that they are nominated for several external awards. Whether at Dubai or the country level (Respondent 5).

Fifth, four respondents clarified that creativity a criterion of employees' annual performance appraisals. Hence, to achieve better grades, employees are encouraged to submit a certain number of ideas in addition to implementing other ones. For example, Respondent 1 clarified that employees' job designation indicates the required numbers of generated ideas for the annual performance appraisals:

The executive employee is assessed based on the number of applied suggestions. Supervisory employees are evaluated on two things: the number of the applied suggestions and the number of the suggestions that he approved to be applied. That's why we contribute to encouraging suggestions in the organisation (Respondent 1).

Sixth, two respondents discussed awarding badges as a form of organisational encouragement for those who generate and implement ideas. Respondent 2 defined the badge:

The badge is an appreciation for an employee for performing distinguished work. It is placed on the employee's chest, as a kind of recognition that this employee is distinguished.

Also, he explained that a particular system was been introduced to explain the mechanism of granting employee medals and badges:

There is an integrated system regarding medals and badges.

### ***Managerial encouragement***

Seven respondents regarded managerial encouragement as an effective tool to boost employee creativity in the workplace. For example, as a key decision-maker, Respondent 2 explored several activities that he was personally involved in to foster creativity among employees:

As one of the leaders, we encourage the staff to submit suggestions, to register in the suggestions program. We conduct a meeting of all employees, discuss their ideas.

Respondent 9 pointed out that managers allocate time to meet and evaluate the submitted ideas:

All specialists and managers meet to discuss the validity of every suggestion. So, I think it's a great support to the employee; it is nice to see his idea is implemented and say I am the owner of this idea.

Also, Respondent 4, as a director, provided an example of how he had supported a creative and innovative employee:

We have an innovative employee who always creates inventions, permanently looking for inventions. Today we transferred him from maritime rescue to the technical workshop. We will provide him with all the support needed. Whether moral support such as nomination for awards, financial support, in addition to promotions.

Finally, according to Respondent 9, managers' encouragement and being open to new ideas have positively affected creativity:

There is always managers' encouragement, there are always people who listen to suggestions and encourage them (Respondent 9)

### ***Work group support***

Two respondents declared that supportive work groups have a positive impact on creativity because they encourage employees to introduce creative ideas. For example, Respondent 6 demonstrated that employees' work groups influence creativity. Further, creative employees are considered role model for others:

Yes, the employee is encouraged by all staff; this person is distinguished and also affects other people. When they see that this person is distinctive, they also try to be creative. (Respondent 6)

### ***Sufficient resources***

Four respondents clarified that the organisations provide different kinds of resources, including time, funds, facilities and information. They believed that availability of these resources influenced employees' creativity:

All means are available. It is not a financial problem such as financial budgets, not a process problem such as work process and techniques (Respondent 2).

Respondent 3 said that funds and required facilities are accessible to creative workers:

As I told you, in general, we in the UAE and the Gulf countries do not have any kind of problems with the financial aspects, thank God, no problem for the techniques and the tools (Respondent 3).

Respondent 9, who considered time as a resource, clarified that the organisation allocated time to evaluate all suggested ideas:

Indeed, we evaluate each suggestion and allocated time. All specialists and managers meet to discuss the validity of every suggestion (Respondent 9).

### ***Freedom***

Two respondents mentioned that if employees have the freedom to determine what work to do or how to do it, it affects creativity positively. For example, Respondent 2 declared that when the employees experience a considerable degree of workplace freedom, they would be perceived as more creative:

If the person has the freedom to be creative, he begins to innovate new things in the innovators club, generates ideas when he is working on a particular task. If he faces some obstacles at work, he will find a solution. All these are freedom for the employees' minds to start thinking.

Respondent 4 showed that employees are not controlled and have the freedom to submit any ideas they believe would benefit the organisation. This atmosphere encourages them to be more creative:

Currently we've got a special program: suggestions and creativities program, in which everybody can submit creative ideas. You can see in the program all kinds of silly and useful ideas and creativities.

### ***Realistic workload pressure***

Six respondents demonstrated that that realistic workload pressure to accomplish job tasks has a positive impact on employees' creativity. Respondent 3 asserted the significance of time to be creative and generate new ideas:

Any creator in the world, or any philosopher, should have a sufficient time, have a thinking space to think, create and bring new things in his free time.

Respondent 2 provided an example of an ex-director who recommended how to organise time in the workplace to manage workload pressure:

One of my directors, whom I have learnt a lot from, always used to tell us in the meetings to keep the first half an hour to think about what you are going to do today, and the last half an hour to revise what have you done today and think about new matters.

Two respondents discussed providing the managers with additional employees to reduce workload pressure to focus on generating new ideas. For example:

We have kept the Forman in the best environment. So, we provided him a group of employees to express his ideas (Respondent 4).

Two respondents discussed the relationship between job tasks and employees' creativity. For instance, Respondent 6 argued that employees whose tasks require creativity enrol in training programs to improve their skills and reduce workload pressure by using techniques learnt in training classes:

We plan his career path so that he can take certain types of courses that encourage his innovativeness and improve his thinking style.

### ***Lack of organisational impediments***

Six respondents mentioned, based on their experience, that the lack of organisational impediments have positive effects on generating new ideas at work. Respondent 2 clarified that their organisation provides employees with all types of support to avoid organisational impediments to creativity:

All means are available. It is not a financial problem such as financial budgets, not a process problem such as work process and techniques, and not problems related.

Moreover, respondents discussed the existence of several tools at work that encourage the absence of organisational barriers.

Eight respondents agreed that their organisation's developed suggestions system helps employees to suggest ideas that they think are useful for the organisation. The ideas can then be distinguished so that the adequate ones can be implemented. For example, Respondent 4 explained the mechanism of the suggestions system:

We have a suggestions system and we have a section for suggestions which follow-up the employees' suggestions with the concerned department. If I am working for the training department and submit a particular suggestion related to administration affairs, it follows up with the administration affairs; where have the submitted suggestion reached? What have you done? And then they return to the employee. So, we have a special section for suggestions.

Indeed, Respondent 3 stated that the organisation has launched suggestions committees to fairly discuss employees' submitted ideas:

I am in the suggestions committee, sometimes we receive good suggestions on an idea. But 'Not applicable'; why not applicable? Why? What is the purpose of not applying it? So, we start a debate.

Two respondents mentioned that their organisations conduct brainstorming meetings, in which all employees are encouraged to suggest new ideas to improve work processes. Moreover, all suggestions are processed through a clear mechanism, regardless of the owner of those ideas:

Brainstorming meetings is a clear mechanism. Brainstorming is a form of a particular topic selection. Then you introduce these ideas. Introduction of these ideas is not negotiable. Each idea comes out of any employee, from anyone. After the filtering processes start until we make a range of

innovative ideas, the new ideas, the modern ideas, which are to be applied (Respondent 2).

Two respondents discussed regular meetings to brainstorm problems at work and develop solutions:

In leaders' meetings, we discuss problems of every department, every section. What are they? What are the solutions that should overcome these problems? And in the following meeting, we make sure where we have reached in this problem? Is the problem solved or we need more? (Respondent 4)

There has been much discussion in the literature about the influence of work context factors on employees' creativity. According to Amabile et al. (1996) climate is an important element that can either have a positive or negative impact on employees' creativity. Further, Hunter et al. (2007) stated that creative climate is vital for all work contexts including public, private and mixed settings (Hunter et al., 2007).

The following factors have been identified as positive determinates to creativity.

### ***Organisational encouragement***

Politis (2005) stated that for employees to be creative, they should work in a context that encourages the process of creativity. According to Amabile et al. (1999, p. 631), organisational encouragement encompasses open information flow and support for new ideas at all levels of the organisation, from top management, through immediate supervisors, to work groups.

There was some evidence of a connection between organisations' encouragement and their employees' creativity (e.g., Jiang, Wang & Zhao; 2012). For example, Rasulzada and Dackert's (2009) study aimed to test the connection between a creative and innovative organisation and employee wellbeing. Further, they explored how organisational creativity and innovation can be enhanced by relating it to various organisational factors. The findings illustrated a significant association between perceived organisational creativity and innovation and employees' psychological wellbeing. It was discovered that both organisational climate and work resources were significantly connected to perceived creativity and innovation in the organisational context. Finally, Martins, Martins and Terblanche (2004) conducted a study to

identify determinants of organisational encouragement that affect the level of creativity and innovation in a university library. The achieved results indicated that creativity and innovation can be influenced by many variables. Creativity and innovation will only succeed under accurate conditions in an organisation. The values, norms and beliefs that have a critical role in creativity and innovation in organisations can either encourage or impede creativity and innovation, depending on how they affect the behaviour of employees and groups. Further, strategy and behaviour were identified as determinants that foster innovation.

### ***Sufficient resources***

Axtell et al. (2000) argued that the employee can be creative and introduce novel ideas alone in the workplace, but the execution of ideas usually relies on the approval, encouragement and resources of others. Many studies have investigated the role of resources on employees' creativity (e.g., Ekvall & Ryhammar, 1999; Rasulzada & Dackert, 2009; Oldham & Silva, 2015). For instance, Oldham and Silva (2015) discussed the influence of digital technology on employees' creative idea generation and implementation. The authors illustrated that computing technologies and devices have the potential to enhance the socioemotional and instrumental support of workers by enabling them to communicate with large numbers of people inside and outside the workplace. Rasulzada and Dackert's (2009) study discovered that work resources were considerably connected to perceived creativity and innovation in the work context. Additionally, the findings of Ekvall and Ryhammar (1999) indicated that organisational climate, which is operationally defined as behaviour, attitudes, and feelings common in the work context in addition to resources, all influenced teachers' creative outcomes in a Swedish university.

### ***Managerial encouragement***

Previous studies believed that managerial encouragement is considered a factor to encourage employee creativity (Williams, 2001). De Jong and Hartog (2007) stated that leaders in knowledge-intensive services affect employees' innovative behaviour, which consists of 'idea generation and application behaviour' (De Jong & Hartog, 2007, p. 43) through their day-to-day performances.

Thus, many studies have focused on understanding relationship between employees' creativity and their managers. The studies have discovered a positive link between leadership and employees' creativity (e.g., Redmond, Mumford & Teach, 1993; Amabile et al., 2004; Politis, 2005; Ohly, Sonnetag & Pluntke, 2006; Hauksdóttir, 2011; Hvidsten & Labraten, 2013; Kim & Yoon, 2015). Indeed, Rickards and Moger (2006) investigated articles published in *Creativity and Innovation Management* (vol. 1–9, 1991–2000) to understand the impact of leadership as a process on creativity and innovation. The results showed nine overlapping themes, within each of which leadership contributes to creative insights or innovative productivity.

### ***Work group support***

According to Shalley (2002), working in teams is expected to boost creativity and innovation due to the rise in diversity and knowledge among members. Indeed, groups are an essential building block in organisations and understanding what impedes or assists creativity and group innovation is of utmost importance (Nijstad & De Dreu, 2002). In current knowledge-work intensive firms, most projects are performed by teams of professionals. They try their best to be both productive and creative in introducing new products, services, processes, or new methods of conducting business (Amabile et al., 2004).

In support of these points, several empirical studies have investigated the influence of work climate on employees' creativity. The results indicated work group support was among the supportive factors (e.g., Ensor, Pirrie & Band, 2006; Foss, Woll & Moilanen, 2013; ElMelegy et al., 2016).

### ***Freedom***

Amabile et al. (1999, p. 631) stated that both freedom and autonomy are used interchangeably. Autonomy in the work context has long been supposed as a vital feature of the work environment for encouraging creativity (Hennessey & Amabile, 2010). Ramamoorthy et al. (2005) argued that offering autonomy for employees in the way they perform their work has the strongest impact on innovative work behaviour, which consists of idea generation, idea promotion and idea realisation (Janssen, 2000, cited in Ramamoorthy et al., 2005, p. 143). Further, Spiegelare et al. (2014) mentioned that autonomy allows workers to experience various work approaches and



methods. Also, it allows them to discover ideas and improve them further through the small-scale implementation of these ideas.

Prior studies have provided evidence that when employees are granted freedom to perform their work, they will be more creative (e.g., Zhou, 1998; Moultrie & Young, 2009; Mathisen, 2011). Moreover, several studies have shown that freedom is among the work context factors that foster employees' creativity (e.g., Turnipseed, 1994; Politis, 2005; Spiegelaere et al., 2014; ElMelegy et al., 2016). For instance, Spiegelaere et al. (2014) investigated whether job insecurity influences employees' innovative work behaviour through concentrating on the association between job insecurity, job autonomy, work engagement and innovative work behaviour. Innovative work behaviour is defined as:

all employee behaviour directed at the generation, introduction and/or application (within a role, group or organisation) of ideas, processes, products or procedures, new to the relevant unit of adoption that supposedly significantly benefits the relevant unit of adoption (p. 319).

The results showed that autonomy had both direct and positive impacts on employees' innovative work behaviour and work engagement, and mediated the relationship between autonomy and innovative work behaviour.

### ***Realistic workload pressure***

Amabile et al. (1996) considered realistic workload pressure as a factor that has a positive impact on employees' creativity. However, Foss, Woll and Moilanen (2013) clarified that whether work pressure affects employees' creativity negatively or positively relies on the extent of work pressure. Thus, Amabile et al. (1999, p. 631) stated that pressures comprise both positive challenge and negative workload pressure.

In terms of type of pressure in the workplace, according to Amabile (1997), time pressure is one dimension of workload pressure. Although the impact of time pressure might be one of the most complicated factors in the organisational creativity literature, compared to other specific factors of the work environment, most researchers examined the influence of time pressure on employees' creativity in the work context (Hennessey & Amabile, 2010).

Shalley and Gilson (2004) argued that when managing for creativity, time is considered an important resource to which managers must ensure their human resources have access. Indeed ElMelegy et al. (2016) recommended that top management should lighten employees' workload pressure to enhance the degree of their creative performance. Thus, some empirical studies identified a positive association between realistic workload pressure and employee creativity (e.g., Andrews & Smith, 1996; Foss, Woll & Moilanen, 2013; ElMelegy et al., 2016; Aleksić et al., 2017).

### ***Lack of organisational impediments***

Several kinds of organisational impediments emerge in the workplace. For example, Mostafa (2005) demonstrated that rigid rules are negatively related to creativity. Shalley and Gilson (2004) argued that to encourage creativity in the workplace, several practices should take place: encouragement to investigate new ideas, openness to communicating and seeking input from others concerning new ideas, and the availability of methods that will inspire to employees' creativity.

Lack of organisational impediments is a work context factor that has a positive association with employees' creative outcomes (Amabile et al., 1996). ElMelegy et al. (2016) stated that to encourage employees' creativity, managers must reduce organisational impediments and provide well-coordinated mechanisms.

Hence, some research indicated that lack of organisational impediments acts as encouragement for individual creativity in the workplace (e.g., Ensor, Pirrie & Band, 2006; ElMelegy et al., 2016). For instance, Ensor, Pirrie and Band (2006) discovered that UK advertising agencies showed a lack of organisational impediments, which was among the factors that had positive impact on creativity.

Further, two respondents discussed brainstorming as a technique to overcome organisational barriers towards employees' creativity. The literature considers brainstorming a type of creativity training commonly perceived as an effective tool for generating a large number of ideas in groups (Gallupe, Bastianutti & Cooper, 1991; Yasin & Yunus, 2014).

Indeed, respondents discussed only traditional brainstorming, which is conducted face-to-face. This type of brainstorming was supported by previous studies (e.g., Paulus & Dzindolet, 1993; Kramer, Fleming & Mannis, 2001). Electronic brainstorming is also shown in the literature, but does not currently exist in Dubai government organisations. For example, Pinsonneault et al. (1999) pointed out that electronic brainstorming was introduced by the scholars to overcome the weakness of traditional brainstorming and strengthen its advantages.

### ***Government regulation and incentives***

All respondents indicated that currently, Dubai government regulation and incentives positively influence employees' creativity in public-sector organisations. To show how the Dubai government monitors its organisations, Respondent 8 outlined the role of the Executive Council of Dubai government:

Our strategy is not separate in any way from the government's strategy, because at the end, we have an executive council, of course our organisation has a representative in the executive council. So, the government's orientation is totally implemented.

Several reasons justify the rationale of focusing on creativity in Dubai government organisations.

First, seven respondents clarified that creativity is part of the Dubai government's strategic plan, vision and mission. Thus, public-sector organisations must focus on creativity to fulfil Dubai's vision:

Dubai government has its strategies which would not get out of the country's vision for the year 2021, so we focus on implementing the vision. Do not forget that creativity and innovation are a part of the vision of the country's 2021 (Respondent 3).

Creativity is considered an essential thing in our workplace or in public departments, and this of course is in His Highness Sheikh Mohammed bin Rashid's vision that stimulates innovation and creativity systems at work in general (Respondent 6).

Second, Respondent 3 indicated that the Dubai government's economy used to depend on oil. Currently, oil is limited in Dubai. Thus, the Emirate has to diversify its income sources through creative initiatives:

Nowadays, the Dubai government has to diversify the sources of income. Dubai nowadays does not have petroleum. Petroleum in Dubai is scarce. How can I diversify my income sources in Dubai? Our goal today exists in all countries of the world, that they diversify their sources of income. Ok, but how can creativity and innovation help in reaching the goal? That's why Dubai has focused on things that might be strange in our society and in our Gulf region. It has focused on tourism. Who can imagine today that it is possible for Dubai to be changed from hot desert? Who can imagine Dubai has changed as a tourist city attracting millions of tourists? Millions of tourists and the employing percentage in hotels reach the peak. 100 per cent.

Third, two respondents discussed the leadership style of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, as an encouraging factor to adopt creativity. For instance:

Sheikh Mohammed bin Rashid always motivates all the leaders who are working with him to be innovators and creators in order to motivate others to follow the same method.

Fourth, Respondent 7 discussed the Dubai government's introduced E-suggestions system for all citizens, including employees. Thus, organisations must activate this system to encourage creativity among employees:

Currently we are following the E-suggestions of the Dubai government.

Fifth, two respondents indicated that there are some criteria of employees' annual performance appraisals imposed by the Dubai government. Creativity is among those criteria. Thus, organisations should enhance creativity and assess employees annually:

The annual performance evaluation includes technical and behavioural skills; each job has behavioural and technical skills. The technical ones are specialised things in the work field, the behavioural ones are general. Of course, the behavioural ones come from the Dubai government. Creativity is listed among the behavioural skills that the employee is evaluated on (Respondent 7).

Indeed, Respondent 9 elaborated on his personal experience. He has worked in several places, other Emirates, before working for a public organisation in Dubai. He compared those places with the positive work environment in Dubai government organisations, which helped him to be more creative:

The Dubai government always motivates to create. I am proud that I was able to apply what I have learnt in my master degree. Many of my ideas

exist here in the organisation. If I didn't have the opportunity to do this, I would not have continued working. From the beginning of our conversation I am telling you about the ideas that I had and applied here. What if the Dubai government wouldn't support this? I am an expatriate, not local, so can you imagine? Thank God, there is always managers' encouragement, people who listen to suggestions, encourage and empower staff.

Lauring and Selmer (2013) explained that public-sector organisations fulfil objectives forced upon them by various stakeholders; they are obliged through the political process, rather than being chosen by public managers or the workforce itself. Groeneveld and Verbeek (2012) shared the same perspective and stated that public-sector organisations are under political pressure to develop ethnic minority representation and spot policy measures that are considered in this trend. Additionally, Bartlett and Dibben (2002) stated that over the past decade or more, extensive reforms have occurred in local government; thus, many new structures and practices existed to improve efficiency and performance. Hence, research on local government has frequently concentrated on political and institutional changes at the local level (Laffin, 2009).

Many studies have aimed to recognise various individual and organisational factors that may either encourage or impede creativity in the work context (e.g., Bommer & Jalajas, 2002; Martins, Martins & Terblanche, 2004; Politis, 2005; Rickards & Moger, 2006; Zdunczyk & Blenkinsopp, 2007; Rasulzada & Dackert, 2009; Gumusluoglu & Ilsev, 2009; Hsu & Fan, 2010; Tseng & Liu, 2011; Isaksen & Akkermns, 2011; Iqbal, 2011; Lin, 2011; Lin & Liu, 2012; Jiang, Wang & Zhao, 2012). Few studies have focused on the influence of external factors on employees' creativity, such as family and friends (Madjar, Oldham & Pratt, 2002), supportive family (Horng & Lee, 2009), and family and school (Yeh, 2004).

However, an area that has not been investigated in previous studies is the influence of government regulation and incentives on employees' creativity in public-sector organisations. The interviews have shown the positive relationship between government regulation and incentives with employees' creativity.

## 4.5 Conclusion

This chapter focused on presenting the findings from qualitative interviews with key decision-makers in Dubai government organisations. The interviews have obtained the objectives of this cycle of research design. Since studies related to creativity in the UAE context were not often published, this cycle provided a more in-depth description of creativity in the UAE public sector.

The following significant conclusions are specified:

### **4.5.1 The applicability of the componential theory of creativity and innovation in organisation in Dubai government organisations**

As mentioned earlier, the previous studies conducted in the UAE context focused only on work context factors that influenced employees' creativity (Politis 2005, 2015; Politis & Politis, 2010), or resource-related and individual-related variables (Dayan, Zacca & Di Benedetto, 2013). The findings of this thesis support the applicability of Amabile's (1988) componential theory of creativity and innovation: individual factors and work environment factors enable employees' creativity.

The contribution of the interviews was that factors outside the organisations, such as government regulation and incentives, also influence employees' creativity. Thus, this must be explained further in the Dubai government context. This contribution overcomes the limitation of Amabile's (1988) theory, which does not consider the influence of factors outside the organisation on employees' creativity.

Most work context factors introduced in Amabile's (1988) model have been discussed by key decision-makers in Dubai government organisations. Moreover, respondents' statements have supported Amabile et al.'s (1996) Climate for Creativity (KEYS), which is one of the most well-known instruments used to measure the climate for creativity in the work context. It was observed that key decision-makers have not mentioned challenging work, which is among the work context factors that positively affect employees' creativity (e.g., Bommer & Jalajas, 2002; Politis, 2005; Lin & Liu, 2012; ElMelegy et al., 2016).

Several studies have used Amabile's (1988) theory. However, based on the model, the work context factors were categorised as either all positive (e.g., Ensor, Pirrie & Band, 2006; ElMelegy et al., 2016) or a combination of positive and negative (e.g., Politis, 2005; Politis & Politis, 2010; Lin & Liu, 2012). Further details will be provided in Chapter 5. The Cycle 1 findings determined all work context factors to be positive one in forming the propositions in Chapter 5. Hence, in this thesis, all work environment factors will be considered positive. Thus, the same theme will be used in introducing propositions and the conceptual model.

Moreover, the findings were consistent with Raudeliūnienė, Meidutė and Martinaitis's (2011) study, conducted in the Lithuanian armed forces, which showed that employee creativity was influenced by three factors: individual, organisational and external. There were some similarities in terms of individual and organisational factors; however, several external factors were different: institutional support (education system and public investment in education and research), and sets of values and norms (public culture and local environment's tolerance). In this thesis, the external factor was government regulation and incentives.

#### **4.5.2 Nature of public-sector organisations in the Dubai government**

As shown above, key decision-makers explained that oil is limited in Dubai. Thus, the Dubai government is searching for new sources of income. Moreover, some participants mentioned that practices such as creativity and innovation, which are implemented in the private sector, are in adopted in Dubai government organisations.

Although this finding was not the focus of Cycle 1, it has highlighted another contribution: public-sector organisations in Dubai are categorised as NPM (i.e., they implements private-sector practices and concepts) (Jas & Skelcher, 2014).

Ackroyd, Kirkpatrick and Walker (2007) justified that public management reforms lead to radical changes in the workplace. Trotta et al. (2011) stated that the objective of NPM is to develop efficiency and effectiveness to decrease costs and improve workplace performance. This can be observed in the Dubai government's orientation towards creative initiative projects, which are considered income for the Dubai government, such as hosting the World Expo in 2020 (The official website of Expo 2020, 2015) and investing in tourism, with revenues now exceeding oil revenue

(Country Profile: United Arab Emirates, 2007). A major reform was the focus on creativity, which was included in most government organisations' visions, missions and strategic plans (The official Portal of Dubai Government, 2017). Thus, there is a need to identify factors that foster employees' creativity in the workplace.

## **4.6 Summary**

This chapter has outlined the data analysis process with a focus on the emerging themes. The details of the qualitative findings gathered from key decision-makers in Dubai government organisations were described. The concentration was on the main theme related to creativity in Dubai government entities. Finally, conclusions emerged that are considered the main contribution of Cycle 1:

- 1) The applicability of the componential theory of creativity and innovation in organisations (Amabile, 1988) in Dubai government organisations
- 2) The positive influence of external factors such as government regulation and incentives on employees' creativity
- 3) Categorising Dubai government organisations as using NPM, which applies and adopts some practices of private-sector organisations (i.e., creativity).

As discussed in Chapter 2, most creativity studies were conducted in private organisations (e.g., Axtell et al., 2000; Bommer & Jalajas, 2002; Rasulzada & Dackert, 2009; Gumusluoglu & Ilsev, 2009; Tseng & Liu, 2011; Larson, 2011; Lin, 2011; Jiang, Wang & Zhao, 2012), while few examined the public sector (e.g., Berman & Kim, 2010).

The Cycle 1 findings will inform the next cycle of the research design by selecting the model that will be used to examine the research question and fulfil the research objective.

Chapter 5 will introduce the theoretical background of the componential model of creativity and innovation in organisations (Amabile, 1988) as the foundation of this thesis, the main concepts used in this research, the conceptual model and the propositions.



## **Chapter 5: Theoretical Framework**

### **5.1 Introduction**

Chapter 4 presented the findings from qualitative interviews with key decision-makers in Dubai government organisations. This chapter aims to define and discuss the concepts used in this thesis. It begins with definitions of creativity and innovation. Most importantly, the componential theory of creativity and innovation in organisations (the theoretical background of this study) will be highlighted and critiqued, focusing on the theory's advantages and disadvantages. The developed conceptual framework and propositions will also be discussed. Finally, a summary of the overall chapter is presented.

As outlined in Chapter 1, this thesis aims to explore factors that influence employees' creativity within Dubai government organisations and to assess whether organisational motivation to innovate mediates the relationship between various factors and employees' creativity.

The literature and findings from qualitative interviews with key decision-makers in Dubai government organisations have shown a positive direct relationship between different factors and employees' creativity. However, the previous studies have not examined the mediating effects of organisational motivation to innovate on the relationship between the following three factors; 1) individual creativity components factors, 2) determinants of work context factors, and 3) government regulation and incentives, on the outcome: employees' creativity.

### **5.2 Definition of creativity**

The notion of creativity is driven from the Latin *creatus* (past participle of create), which means 'to make, produce', and is collocated to *crecere* (arise, grow) (Kampylis & Valtanen, 2010, p. 191–192). Countless definitions have been developed to define creativity. Treffinger (1996, cited in Treffinger et al., 2002) reviewed and presented more than 100 diverse creativity definitions from the literature. Kampylis and Valtanen (2010) gathered, analysed and reviewed 42 creativity definitions and 120 collocations to redefine the concept.

Thus, there is little agreement about the concept of creativity and its theories (Ma, 2006) and there is no single, universally accepted definition (Treffinger et al., 2002). Table 5.1 presents some definitions of creativity.

**Table 5.1: Definitions of creativity**

<b>Author and Year</b>	<b>Creativity Definition</b>
Heye (2006, p. 253)	‘The production of new ideas or combining old ideas in a new way.’
Cheung, Roskams and Fisher (2006, p. 2)	‘An ability or activity that produces something new and useful.’
Klijn and Tomic (2010, p. 323)	‘The production of new and useful ideas or solutions by one or more individuals within a work environment.’
Martins and Terblanche (2003, p. 67)	‘The generation of new and useful/valuable ideas for products, services, processes and procedures by individuals or groups in a specific organisational context.’
Wood (2003, p. 22)	‘The recognition of an opportunity or the inspiration that develops an idea.’
Paulus and Dzindolet (2008, p. 228)	‘The generation of novel products.’
Shin, Kim, Lee and Bian (2012, p. 198)	‘The production of novel and useful ideas concerning products, services, processes, and procedures by an employee.’
Udwadia (1990, p. 66)	‘The production of novel or original ideas of useful value.’

For example, Udwadia (1990) clarified that creativity definition concentrates on one or more three diverse features: a) process: the nature of thought process or mental activity by which new insights or problem solutions are developed; b) person: the distinctive personality traits and cognitive abilities of the creative individual; or c) product: the distinguishing qualities of the outcome of creative endeavor (p. 66).

Additionally, Barron and Harrington (1981) justified that employed definitions of creativity differ in many ways for several reasons. First, some definitions need socially worthy products if the act or individual is to be considered creative. Other researchers consider creativity itself as internally valuable; hence, nothing of

demonstrable social value needs to be produced. Therefore, dreams might be creative, or unexpressed thoughts or simply the imaginative expressiveness or curiosity of a child. Second, definitions might differ in terms of the level of achievement known as creative: difficulty of the problem observed or solved (e.g., or elegance or beauty of the product or the nature of the influence). A third kind of distinction is between creativity as attainment, creativity as capacity and creativity as disposition or attitude. Moreover, creativity is tackled in numerous fields, such fine arts, architecture, psychology, sociology, economics, science, engineering and management (Sadi & Al-Dubaisi, 2008).

To narrow the scope of creativity, Amabile (1996) explained that creativity is different from:

- 1) Eccentric personality. In fact, creative work is not just new, it is additionally appropriate. Further, it is more constructive to consider creativity as emerging from a specific behaviour and leading to specific product or idea rather than perceiving creativity as personality trait.
- 2) Art. Creativity is novel and proper behaviour in any scope of individual activity, such as business administration, scientific detection, writing, painting and so on.
- 3) Intelligence. As it is traditionally known, intelligence is the group of abilities measured by intelligence quotient tests or educational programs in school. Certainly, intelligence may add value to creativity. However, studies have indicated that creativity is much more than being smart and there is no obvious connection between creativity and intelligence.
- 4) Good. Newness and goal-proper behaviour is applicable to evil and destructive ends as well as good, accountable and helpful ends.

For the purpose of this research, Amabile's (1996) definition is used which is 'the development of ideas about products and services, practices or procedures that are novel (unique) and potentially useful having a direct or indirect value to the organisation' (p. 1).

There are several justifications for choosing this definition. First, a common theme exists in creativity literature, in which creativity is defined as the development of a

novel and useful product, idea or problem. Therefore, many other scholars and theorists involved them in their definitions (e.g., Udawadia, 1990; Shalley, 1991; Woodman, Sawyer & Griffin, 1993; Oldham & Cummings, 1996; Shalley, Gilson & Blum, 2000; Runco, 2004; Martins, Martins & Terblanche, 2004; Cheung, Roskas & Fischer, 2006; Klijn & Tomic, 2010). Second, since this research focused on the work context, the chosen definition is more suitable because according to Zhuo and Shalley, (2003) creativity can ‘encompass creative solution to business problems, creative business strategies or creative changes in job processes’ (p. 167).

The definition indicates that creativity is about idea development. It has distinguished three types of creativity:

- 1) A product is a ‘good or service provided to customers’ (Barras, 1986, cited in Çokpekin & Knudsen, 2012, p. 306). For example, Steve Wozniak’s invention of the microcomputer is considered creative, since this novel product had not been created before (Amabile, 1997).
- 2) Services: a good example is when Walt Disney developed Disneyland. He showed creativity in novel service development and essentially invented a novel sort of entertainment (Amabile, 1997).
- 3) Procedures: Fred Smith introduced the concept of Federal Express by inventing a new system for delivering goods (Amabile, 1997).

The definition selected for this research is based on two criteria: novelty and appropriateness (value). Dewett (2004) stated that novelty basically involves newness or originality. Amabile (1997) asserted that novel ideas must differ from what has been made previously; they cannot just be odd. A novel idea exists either in the form of completely original idea or combines current ideas in a new way (Oldham & Cummings 1996, cited in Agnihotri et al., 2014). Concerning appropriateness (value), Amabile (1983, cited in Paletz & Peng, 2008) defined it as ‘usefulness, correctness, and value’ (p. 287). Amabile (1997) added that those ideas must be suitable for the problem or opportunity presented. Paletz and Peng (2008) stated that although both criteria are significant, it is not enough for a product to only be new; it should also fulfil its function. For example, a roll-up television an inch thick is not considered a creative product unless it also has appropriate audio and video quality.

Extant literature indicated other scholars who have agreed that creativity must comprise the features of both usefulness and novelty (e.g., Mumford & Gustafson, 1988; Shalley, Zhou & Oldham, 2004; Sadi & Al-Dubaisi, 2008; Ford, 1996; Cummings & Oldham, 1997).

### **5.3 Definition of innovation**

Although this thesis focuses only on creativity, this section will define innovation because it is a part of the componential theory of creativity and innovation in organisations, developed by Amabile (1988).

The word ‘innovate’ is derived from the Latin word *innovare*, which is defined as ‘renew, to make new’ (Clapham, 2003, p. 366). Crossan and Apaydin (2010) stated that several definitions have been introduced for innovation, each underlining diverse aspects of the term.

Literature indicates that there are various reasons for this diversity of definition. First, several fields of research have improved in their attempts to recognise the complex concept of organisational innovation (Armbruster et al., 2008). Second, innovation has been examined in depth by scholars from diverse disciplines, like economics, psychology, anthropology, sociology and organisational theory (Ravichandran, 1999). Third, innovation is considered a highly multidimensional concept that involves many empirical phenomena. Thus, many innovation typologies have been introduced, including the variation between technical and administrative, incremental, radical, product and process innovations (Salge & Vera, 2012).

Wichitchanya and Durongwatana (2012) illustrated that innovation can be categorised based on several aspects, depending on the definition and criteria used. For instance, by producing outcomes that are ‘product innovation, process innovation, and service innovation’ and by the type of changes ‘such as the radical innovation and incremental innovation’ (p. 222).

As discussed, authors defined innovation differently. Table 5.2 introduces some of these definitions.

**Table 5.2: Definitions of innovation**

<b>Author and Year</b>	<b>Innovation Definition</b>
Udwadia (1990, p. 66)	‘The successful creation, development and introduction of new products, processes or services.’
Heye (2006, p. 253)	‘The transformation of a new idea into a new product or service, or an improvement in organisation or process.’
Crossan and Apaydin (2010, p. 1155)	‘Production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome.’
Wood (2003, p. 22)	‘The implementation of all ideas—big and small.’
Paulus and Dzindolet (2008, p. 228)	‘The implementation of novel ideas or processes.’
Van de Ven (1986, p. 590)	‘The development and implementation of new ideas by people who over time engage in transactions with others within an institutional order.’
Damanpour (1991, p. 558)	‘A new product or service, a new production process technology, a new structure or administrative system, or a new plan or program pertaining to organisational members.’
Ekvall (1997, p. 195)	‘A creative idea that has been brought to application.’
Oldham and Cummings (1996, p. 608)	‘The successful implementation of these products at the organisational level.’
Van de Ven (1986, p. 590)	‘The development and implementation of new ideas by people who over time engage in transactions with others within an institutional order.’

In terms of defining innovation in the workplace, Udwadia (1990, p. 66) affirmed that the concept is differently defined according to: 1) adoption of work or production technologies new to the organisation, 2) changes in organisational structure or managerial practices, and 3) market introduction of the fruits of in-house research and development activities.

Armbruster et al. (2008) classified innovation into two types:

- 1) Intra-organisational innovations that occur in organisations or companies. This type of innovation might concern specific departments or functions, or might influence the overall structure and strategy of the organisation (e.g., the execution of teamwork, quality circles, continuous improvement processes or the certification of an organisation under ISO 9000).
- 2) Inter-organisational innovations that consist of new organisational structures or procedures outside the organisation's boundaries. These encompass new organisational structures, such as R&D cooperation with clients, just-in-time transactions with suppliers or clients, or supply chain management practices with suppliers.

In this thesis, innovation is defined as 'the successful implementation of creative ideas within an organisation' (Amabile, 1996, p. 1). According to Klein and Sorra (1996, p. 1055), implementation is the process of gaining targeted organisational members' appropriate and committed use of an innovation. Amabile (1988) illustrated that the term implementation in the definition covers all aspects of improving and employing the ideas. Borghini (2005) stated that implementing novel ideas in organisational settings helps to achieve competitive advantage through innovation. Thus, several authors included implementation as an element in their definitions of innovation (e.g., Wood, 2003; Paulus & Dzindolet, 2008; Amabile, 1996; Van de Ven, 1986).

There are several justifications for selecting the above definition. First, it is a common theme in the literature and many other scholars have embraced it (e.g., Cummings & Oldham, 1997; Wood, 2003). Second, most well-known definitions of innovation encompass both the improvement and execution of novel ideas (Amabile, 1988), while most creativity definitions focus only on the development of ideas (e.g., Heye, 2006; Klijn & Tomic, 2010; Martins & Terblanche, 2003; Wood, 2003; Shin et al., 2012). Third, this definition is part of the componential theory of creativity and innovation in organisations (Amabile, 1988), which is the theoretical base of this research (see Section 5.4). Finally, this thesis was conducted at organisational settings, which makes this definition more suitable and accurate than others.

## **5.4 The componential theory of creativity and innovation in organisations**

Amabile (1983) developed the componential theory of individual creativity due to rarity of experimental studies that examined the social and environmental influences on creativity. According to Amabile (1997), the theory assumes that all people with ordinary abilities can produce at least moderately creative work in some fields, which affect the level and frequency of creative performance. Indeed, according to the theory, creativity exists when individuals' skills overlap with their strongest internal interest and is evident at the higher level of all three elements: domain-relevant skills, creativity-relevant skills and intrinsic task motivation (Amabile, 1997).

As shown in Figure 5.1, based on the model, there are three key components of individual (or small team) creativity:

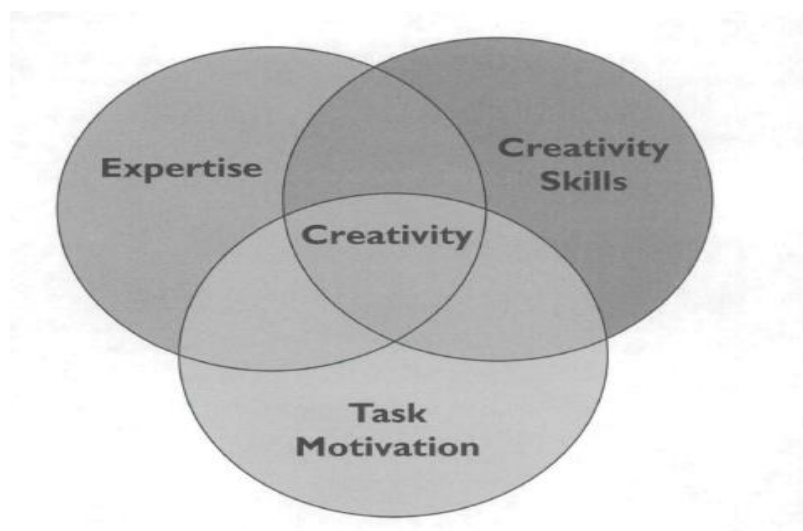
- 1) Domain-relevant skills: Amabile (1988) depicted domain-relevant skills as 'the essential skills from which any performance should progress. This element is seen as the set of cognitive pathways for solving a given problem or doing a given task. This component includes factual knowledge, technical skills, and special talents in the domain in question' (p. 130).
- 2) Creativity-relevant skills: Amabile (1988) clarified that creativity-relevant skill is 'something extra for creative performance and includes a cognitive style favorable to taking new perspectives on problems, an application of heuristics for the exploration of new cognitive pathways and a working conductive to persistent, energetic pursuit of one's work' (p. 130). The author added that creativity-relevant skills include knowledge of heuristics for generating novel ideas and a work style conducive to creativity. This component depends 'on personality characteristics, training such as different types creativity training programs or even on experience with idea generation' (p. 130).
- 3) Intrinsic task motivation: Amabile (1988) highlighted 'that task motivation makes the difference between what an individual can do and what one will do' (p. 133). Additionally, 'task motivation appears to depend strongly on the



work environment; it may vary not only from one domain to another, but from one task to another within one domain, depending on the work environment. Task motivation includes two elements: the individual's baseline attitude towards the task, and the individual's perceptions of his or her reasons for understanding the task in a given instance' (p. 133).

Amabile (1997) stated that intrinsic task motivation is regarded as principle of creativity. This intrinsic motivation principle of creativity is relevant to both scientific creativity and business creativity. Amabile (1988) highlighted that task motivation contains two aspects: the person's baseline attitude towards the task, and the person's perceptions of his or her causes for recognising the task in a given instance. Further, task motivation seems to depend strongly on the workplace context, which could differ from one field to another, and one task to another within a single domain, depending on the workplace context.

Amabile (1988) illustrated that the three elements are the building blocks for the componential model of creativity. Since the model is regarded as multiplicative, every element is essential for some stage or creativity to be constructed; the higher the stage of each of the three elements, the higher the broader level of creativity must be. It is clearly stated that all three elements are crucial; a single element is not enough for creativity (see Figure 5.1 and Table 5.3).



**Figure 5.1: The componential theory of individual creativity**

Source: Amabile (1997, p. 43).

**Table 5.3: More details about the componential theory of individual creativity**

<b>Domain-Relevant Skills</b>	<b>Creativity-Relevant Skills</b>	<b>Task Motivation</b>
Includes: knowledge about the domain technical skill required special domain-relevant talent	Includes: appropriate cognitive style implicit or explicit heuristic for generating novel ideas conductive work style	Includes: attitudes towards the task perception of own motivation for understanding task
Depends on: innate cognitive abilities innate perceptual and motor skills. formal and informal education	Depends on: training experience in idea generation personality characteristics	Depends on: initial level of intrinsic motivation towards the task presence or absence of salient extrinsic constraints in the social environment individual ability to cognitively minimise extrinsic constraints

Source: Amabile et al. (1996, p. 384).

Along with the former theory of individual creativity, and due to the magnitude of external influences on the creativity, in 1988, Amabile extended the above theory to cover both creativity and innovation in the work context. Amabile (1988) conducted three studies with different participants. The first study interviewed 120 R&D scientists working for one of 20 different organisations. The second study included 16 marketing and development employees working for one of the largest national banks, while the third study included 25 employees from a chief railroad. Based on the result, the author developed another model: the componential theory of creativity and innovation in organisations. The components of individual creativity remained the same, but others (relating to the workplace) have been added. As stated by Amabile (1996), the theories of organisational creativity and innovation aim to discover work environment factors that are linked to creativity.

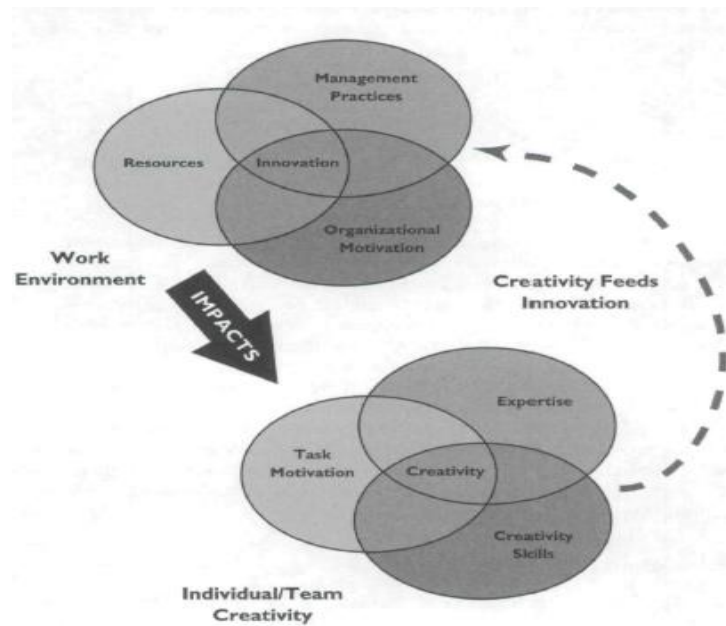
Amabile (1997) demonstrated that the main parts of the componential theory, incorporate employees' creativity with the organisational work context. The three upper circles in Figure 5.3 portray the organisational components (features of the work environment), which are believed to be essential for innovation. The three lower circles portray the elements of individual creativity. The fundamental prediction of the

theory is that work environment factors influence individuals' creativity. Additionally, the theory assumes that the creativity developed by individuals and teams are considered a principal basis for innovation within the organisation. The most significant feature of the theory is the confirmation that the work environment affects creativity by influencing individual factors. Despite this, the work environment can have an influence on any of the individual components; the influence on intrinsic task motivation is depicted as the most immediate and direct.

According to Amabile (et al., 1996), the three elements of the organisational work environment are:

- 1) Organisational motivation to innovate 'is a basic orientation of the organisation toward innovation, as well as supports for creativity and innovation throughout the organisation' (p. 1156).
- 2) Resources 'refers to everything that the organisation has available to aid work in a domain targeted for innovation (e.g., sufficient time for producing novel work in the domain, and the availability of training)' (p. 1156).
- 3) Management practices 'refers to allowance of freedom or autonomy in the conduct of work, provision of challenging interesting work, specification of clear overall strategic goals, and formation of work teams by drawing together individuals with diverse skills and perspectives' (p. 1156).

As demonstrated in Figure 5.2, the overlap between the former components leads to innovation within organisations.



**Figure 5.2: The componential theory of creativity and innovation in organisations**

Source: Amabile (1997, p. 53).

Amabile and Pratt (2016) revisited fundamental assumptions underlying the componential theory of creativity and innovation in organisations (Amabile, 1988). The authors renamed the model as the dynamic componential model of creativity and innovation (see Figure 5.3).

In addition, the authors introduced four new constructs into the model. The first was the progress principle; the progress loop is defined as ‘the central mechanism by which individuals and teams can maintain high levels of creative productivity over long periods of time, even in the face of extremely difficult innovation problems’ (Amabile & Pratt, 2016, p. 167). The authors clarified that the discovery of the progress principle led to three alterations of the 1988 model:

- 1) ‘The inclusion of a feedback loop—the progress loop—from success and from progress (partial success) in Stage 5 of the individual creative process to increased intrinsic motivation and, thus, enhanced engagement in Stages 1 through 4 of the creative process.
- 2) The inclusion of a similar feedback loop originating with failure, under conditions of high psychological safety, and

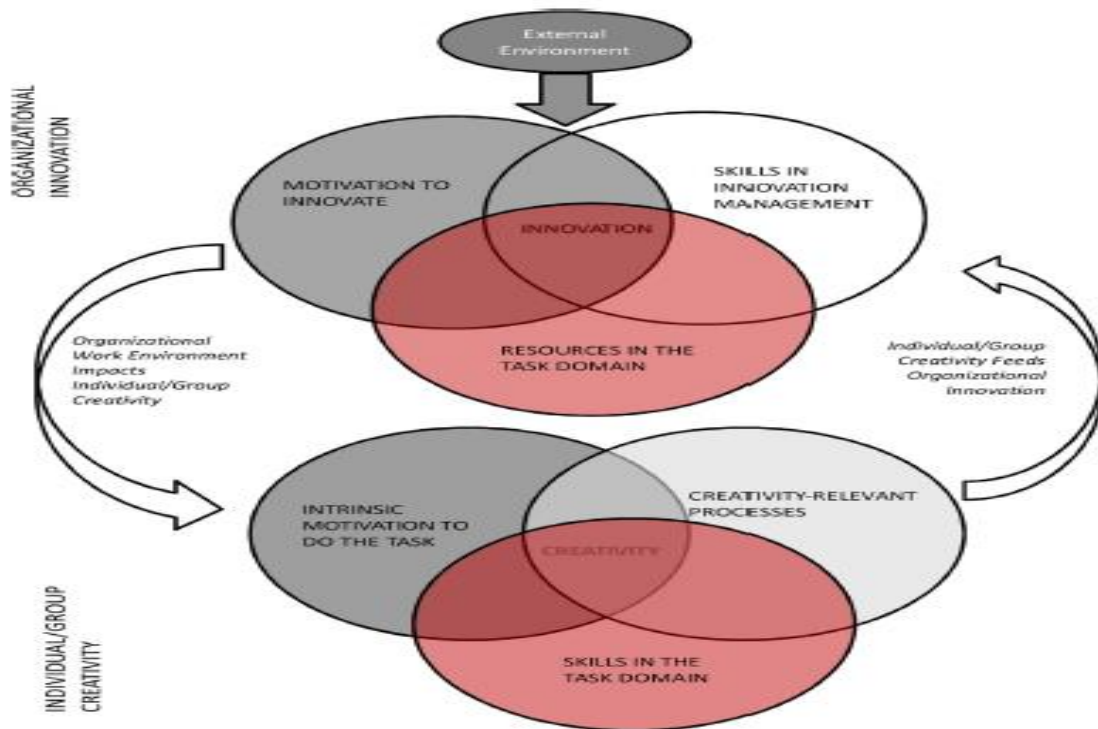
- 3) The addition of analogous progress loops to the organisational innovation process' (Amabile & Pratt, 2016, p. 169).

The second new addition was the meaningfulness of the work to those perform it. Meaningful work is defined as 'work that is perceived as "positive" and "significant" in some way' (Pratt & Ashforth, 2003 cited in Amabile & Pratt, 2016, p. 170). The authors discussed that there are two ways through which meaningful work affects the creative process: via intrinsic motivation and reinforcing the progress loop, and, therefore, lifting persistence in a creative endeavour.

The third main change to Amabile's (1988) model is the embodiment of affect. The authors built on a former theoretical suggestion and included affect in the new model in two main ways. First, affect can occur from several sources: external of and internal to the person involved in the creative work. The second, and most speculative revision of the model regarding affect, grows from a possible reconciliation of the apparently inconsistent findings regarding creativity and affect.

The fourth inclusion is synergistic extrinsic motivation. This involved revising a primary assumption underlying Amabile's (1988) model that intrinsic motivation had priority in influencing employees' creativity. There were two further modifications to the revisited model:

- 1) Prosocial motivation can boost creativity by promoting the meaningfulness of the work
- 2) Extrinsic motivation has a constructive role on the creative process.



**Figure 5.3: An abstraction of the components influencing innovation and creativity and how they interact.**

Source: Amabile & Pratt (2016, p. 161).

As shown in Figure 5.4, the authors added external environment to the revised model. Moreover, a part of the new changes was that their understanding of the relationship between extrinsic motivation and creativity had changed considerably. However, no studies have empirically tested these changes. Therefore, this thesis aims to investigate the direct and mediating impact of organisational motivation to innovate (which represents extrinsic motivation) on the relationship between different factors and employees' creativity.

## **5.5 Justifications for choosing the componential theory of creativity and innovation in organisation**

Justifications for choosing this theory as a foundation for the current thesis comprise reasons from literature review and findings from the qualitative interviews with key decision-makers in Dubai government organisations.

Justifications that emerged from the literature review were:

- 1) Most researchers agree that individual creativity can be affected by social processes (Woodman, Sawyer & Griffin, 1993). The selected theory is one of the few frameworks that link the organisational and human approach in an organised manner (Bender, 2014). A recent study has demonstrated that the model has now been cited approximately 4,000 times (Amabile & Pratt, 2016). Thus, creativity in organisational literature has been greatly influenced by this theory (Rosso, 2014). Amabile and Pillemer (2012) mentioned that other scholars have considered this theory a foundation from which to develop their own, such as Sternberg and Lubert's (1991) investment theory of creativity, Woodman, Sawyer and Griffin's (1993) interactionist theory and Ford's (1996) theory of individual creative action in multiple social domains. Therefore, using this theory helps to achieve internal validity, and it is widely accepted in the creativity field.
- 2) The theory provides a general framework through which to understand the effects and results of work environment perceptions (Amabile et al., 2004).
- 3) The theory has been used for multiple purposes. Researchers who examined employees' creativity have used the elements of the componential theory: domain-relevant skills, intrinsic motivation and creativity-relevant processes (e.g., Eder & Sawyer, 2008; Agnihotri et al., 2014). While studies that examined work context factors used factors related to workplace climate (e.g., Ensor, Pirrie & Band, 2006; Moultrie & Young, 2009), few studies combine both components of creativity (e.g., Yong, Lander & Mannucci, 2013, Bender, 2014).
- 4) This theory concentrates on creativity in an organisational context, but that emerges at an individual level (Amabile, 1996, 1997, 1988); this matches with the goal of the current research.
- 5) This research will contribute to the componential theory of creativity and innovation, considering Amabile's (1988) model does not consider the influence of external features or the physical environment on employees' creativity. As explained Chapter 1, many theses and studies have extended the model and investigated the influence of physical environment on employees' creativity within the organisational context (e.g., Vithayathawornwong, Danko & Tolbert, 2003; Dul, Ceylan & Jaspers, 2011; Bryant, 2012; Boënné, 2014; Horng et al., 2016). However, few have focused on the influence of external

factors, such as family and friends (Madjar, Oldham & Pratt, 2002), supportive family (Hornig & Lee, 2009), and family and school (Yeh, 2004).

Justifications that emerged from findings of the qualitative interviews

As discussed in Chapter 4, the data from the qualitative interviews with key decision-makers in Dubai government organisations supported the applicability of Amabile's (1988) componential theory of creativity and innovation in organisations. A main contribution of the interviews was that Dubai government regulation and incentives also influence employees' creativity. This contribution overcomes the limitation of the theory by exploring the potential influence of factors outside the organisation on employees' creativity.

## **5.6 Development of the conceptual model**

Serkaran and Bougie (2013) illustrated that a conceptual model helps to structure the researcher's arguments and depicts the researcher's ideas of how the variables are connected. The conceptual model was developed through further reading and was based on Cycle 1 findings.

According to Hair et al. (2011), single-headed arrows 'reflect unidirectional relationships between two theoretical constructs or between a theoretical construct and its measured variables. In addition, single-headed arrows represent predictive relationships that with theoretical support, can be interpreted as casual relationships' (p. 139).

Literature has showed the direct relationship between different individual factors and employees' creativity (e.g., Amabile, 1989; Amabile, 1996; Ganesan & Weitz, 1996; Davis, 1997; Eisenberger & Rhoades, 2001; Shin & Zhou, 2003; Baer & Kaufman, 2005; Eder & Sawyer, 2008), and work context factors and employees' creativity (e.g., Hatcher, Ross & Collins, 1989; Redmond, Mumford & Teach, 1993; Zhou, 1998; Ekvall & Ryhammar, 1999; Zhou & George, 2001; Madjar, Oldham & Pratt, 2002; Ohly & Zhou, 2003; Farmer, Tierney & Kung-McIntyre, 2003; Ohly, Sonnetag & Pluntke, 2006; Rasolzada & Dackert, 2009; Moultrie & Young, 2009; Mathisen,



2011; Mbatha, 2013; Hvidsten & Labraten, 2013; Chang et al., 2014; Kim & Yoon, 2015).

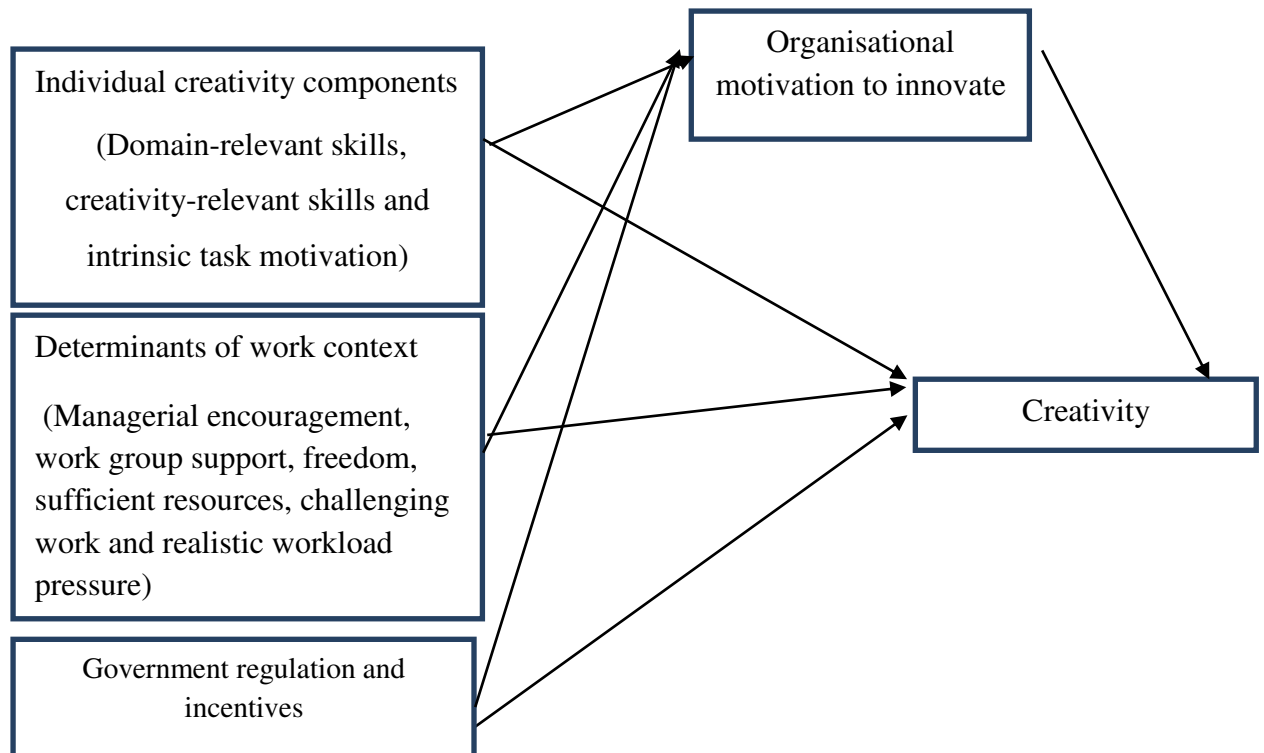
Based on the theory used in this study, organisational motivation to innovate is a work context factor (Amabile et al., 1996). Additionally, the revisited version of the theory proposes that organisational motivation to innovate is considered a feature that should be given priority (Amabile & Pratt, 2016). However, there is a lack studies that have explored the mediating effect of organisational motivation to innovate on the independent variables: 1) individual creativity components, 2) determinants of work context, and 3) government regulation and incentives.

Of course, the dependent variable is creativity. This study aims to fill this gap in the theory.

As discussed in Chapter 2, Amabile (1997) declared that work context factors include: sufficient resources, managerial encouragement, work group supports, freedom, challenging work and realistic workload pressure and organisational encouragement and lack of organisational impediments.

Amabile et al.'s (1996) definition of organisational motivation to innovate includes organisational encouragement and lack of organisational impediments. Therefore, both variables were combined and considered a summated variable. The remainder of the work context variables—'sufficient resources, managerial encouragement, work group supports, freedom, challenging work and realistic workload pressure'—will be referred to as the determinants of work context and will be investigated separately.

Figure 5.4 depicts the three types of variables in the developed conceptual model. There are three independent variables: individual creativity components, determinants of work context and government regulation and incentives. The dependent variable is creativity, while the mediating variable is organisational motivation to innovate, which is expected to influence the relationship between the independent and dependent variables.



**Figure 5.4: The conceptual model**

## 5.7 Propositions

To identify whether organisational motivation to innovate has a mediating effect on the relationship between these factors and employees' creativity, six propositions were formulated for testing in this research.

The justification for formulating propositions was that the conceptual model has not been empirically tested yet.

### The direct effects

Proposition 1: Individual creativity components—a) domain-relevant skills, b) creativity-relevant skills and c) intrinsic task motivation—are positively related to employees' creativity.

Proposition 2: Determinants of work context—a) sufficient resources, b) managerial encouragement, c) work group support, d) freedom, e) challenging work f) realistic work load pressure and g) organisational motivation to innovate—are positively related to employees' creativity.

Proposition 3: Government regulation and incentives are positively related to employees' creativity.

### **The mediating effect of organisational motivation to innovate**

Proposition 4: Organisational motivation to innovate mediates the relationship between individual creativity—a) domain-relevant skills, b) creativity-relevant skills and c) intrinsic task motivation—and employees' creativity.

Proposition 5: Organisational motivation to innovate mediates the relationship between determinants of work context—a) sufficient resources, b) managerial encouragement, c) work group support, d) freedom, e) challenging work and f) realistic workload pressure—and employees' creativity.

Proposition 6: Organisational motivation to innovate mediates the relationship between government regulation and incentives and employees' creativity.

#### **5.7.1 The direct effect**

Creativity literature has shown inconsistency in terms of the relationship between different factors such as work context factors and employees' creativity (e.g., Shalley, Zhou & Oldham, 2004; Foss, Woll & Moilanen, 2013; Sonenshein, 2014; Zhang et al., 2017). Therefore, both positive and negative relationships exist between those factors and employees' creativity.

The positive relationship between the various factors and employee creativity was considered during the development of the propositions for several reasons. First, the theoretical base for this study is Amabile's (1988) componential theory of creativity and innovation in organisations. Thus, the theory shows positive relationship between the individual creativity component (domain-relevant skills, creativity-relevant skills and intrinsic task motivation) and work context factors (organisational motivation to innovate, resources and management practices) and employees' creativity. Bender (2014) stated the focal idea of Amabile's theory is that the individual components that determine the level of creativity among employees are affected by the work environment, which determines the degree of innovation in the organisation. The used theory has already recommended directions of the relationships that have been

considered in developing the propositions. Second, the key decision makers in Dubai government organisation (i.e., Cycle 1 participants) categorised factors that influence employees' creativity in the workplace as positive.

### **The relationship between individual creativity components and employees' creativity**

Based on Amabile's (1988) componential theory of individual creativity, there are three key components of individual (or small team) creativity: domain-relevant skills, creativity-relevant skills and intrinsic task motivation.

First, domain-relevant skills were defined as employees' factual knowledge, technical skills and special talents that influence their creativity and innovation (Amabile, 1988). For instance, Runco (2004) stated that many studies have investigated the relationship between creativity and intelligence. Shalley and Gilson (2004) clarified that workforce depth and breadth of knowledge is associated with creativity, while Craft (2003) asserted that by the end of the 1990s, creativity was prioritised in education and wider society.

Second, in terms of creativity-relevant skills, Hennessey and Amabile (2010) argued that studies and theories in the creativity field share common elements with personality studies, as both areas focus on uniqueness. In addition, research showed that cognitive style might be related to general and creativity-related efficacy perceptions. Finally, creativity-relevant skills also depend on training (Amabile, 1988). According to Shalley and Gilson (2004), training provides employees with guidance on how to create novel ideas as part of their job.

The third factor is intrinsic task motivation. Shalley and Gilson (2004) stated that creativity necessitates some level of internal, supporting power that pushes individuals to deal with challenges inherent to creative work. Shin and Zhou (2003) illustrated that intrinsically motivated employees are more likely to discover many alternative ways of solving problems, using non-traditional methods; hence, they display a high level of creativity. Additionally, Ganesan and Weitz (1996) argued that intrinsic motivation boosts risk-taking and creative behaviours in the workforce.

Thus, based on above discussion it is expected that there a positive relationship between individual creativity components and employees' creativity is expected.

Proposition 1: Individual creativity components—a) domain-relevant skills, b) creativity-relevant skills and c) intrinsic task motivation—are positively related to employees' creativity.

### **The relationship between determinants of work context and employees' creativity**

Politis (2005) argued that to encourage employees' creativity, the context in which they perform should stimulate the process of creativity. Diliello et al. (2011) stated that organisations should strive to enhance the stimulants and eliminate the obstacles to sustain employee creativity and develop organisational innovation.

Several factors stimulate employee creativity. For example, Rasulzada and Dackert (2009) illustrated that work resources can boost creativity. Similarly, Amabile et al. (1996) stated that perceptions of the availability of sufficient resources might influence humans' creativity psychologically through reinforcing the beliefs about the internal value of the projects that they have conducted.

Managerial encouragement is also considered a factor that encourages employee creativity. Koseoglu, Liu and Shalley (2017) argued that managers' creativity is an essential component of effective leadership that can be connected to subordinates' self-concept and creativity. According to Shalley and Gilson (2004), to enable creativity, leadership must play an energetic role in fostering, promoting and helping creativity.

In terms of work group support, in current knowledge-work-intensive firms, most projects are performed by teams of professionals striving to be both productive and creative in introducing new products, services, processes, or new methods of conducting business (Amabile et al., 2004). Thus, managers must consider that peers influence employees' creativity (Shalley & Gilson, 2004). McLean (2005) pointed out that employees who stand out as highly creative are often worthy of independence and autonomy. Additionally, Shalley (1995) illustrated when people are free to focus on task activities, they tend to be more creative.

Regarding realistic workload pressure, Rasolzada and Dackert (2009) mentioned that when individuals feel sufficiently resourced, they do not feel workload pressure. Instead, they believe they can manage workload if they have access to work resources.

In terms of organisational motivation to innovate, which includes both organisational management and lack of organisational impediments (Amabile et al., 1996), Amabile (1996) provided several examples of organisational encouragement of creativity: 1) encouragement of risk-taking and idea generation, a valuing of innovation from the highest to the lowest levels of management, 2) fair and supportive evaluation of new ideas, 3) reward and recognition of creativity, and 4) collaborative ideas follow across an organisation and participative management and decision-making (p. 1159—1160).

The second type of organisational motivation to innovate is a lack of organisational impediments (Amabile et al., 1996). There are many studies that have explored the factors that might hinder employees' creativity, such as conservatism and internal strife (Amabile et al., 1999), bureaucracy (Hirst et al., 2011), controlling supervision (Oldham & Cummings, 1996), and lack of resources (Andriopoulos, 2001). Thus, according to ElMelegy et al. (2016), among the practices that leaders should adopt to foster creativity are reducing organisational impediments and establishing well-coordinated mechanisms for identifying and rewarding creative behaviours.

Further, many scholars considered that challenging work influences employee creativity. For instance, Amabile (1997) declared that a positive sense of challenge in an organisation is one of the most significant predictors of creativity; it is imperative to match employees to roles that will stretch their abilities and are valued by the organisation. Udvardia (1990) shared the same viewpoint, stating that it is common for challenge to stimulate creativity. According to Shalley and Gilson (2004), when jobs are complex and challenging, employees should focus to make their jobs more persistent and more likely to consider diverse alternatives, which should lead to creative outcomes.

Thus, it is expected that determinants of work context play a positive role in encouraging employees' creativity.

Proposition 2: Determinants of work context—a) sufficient resources, b) managerial encouragement, c) work group supports, d) freedom, e) challenging work, f) realistic work loadpressure and g) organisational motivation to innovate—are positively related to employees' creativity.

### **The relationship between government regulation & incentives and employees' creativity**

Literature has supported that employees interact with others outside the organisation while performing their job (e.g., Stone & Gueutal, 1985, Morgeson & Humphrey, 2006). Morgeson and Humphrey (2006) stated that interaction outside the organisation 'reflects the extent to which the job requires employees to interact and communicate with individuals external to the organisation' (p. 1324). This interaction could be with suppliers, customers, or any other external entity.

Hennessey and Amabile (2010) clarified that some creativity studies have shown that external factors influence employees' creativity. However, creativity literature was limited regarding the influence of external factors on employees' creativity (e.g., Madjar, Oldham & Pratt, 2002; Yeh, 2004; Horng & Lee, 2009). According to Egan (2005), creativity helps organisations react to improving technology, change work atmospheres, adjust organisational forms or strategies, defeat competitors, fulfil client wishes and evolve societies increasingly affected by global concerns.

At the organisational level, government acts in an important role: to direct and impose particular practices (e.g., Tregaskis, 1997; Delmas, 2002; Delmas & Toffel, 2004; Menguc, Auh & Ozanne, 2010; Zailan et al., 2012; Yang et al., 2012). For instance, Delmas (2002) found that governments play an important role in firms' decisions to adopt ISO14001 (Environmental Management System) and in offering regulatory flexibility.

In terms of identifying the relationship between employees and government, based on stakeholders classification, many scholars have agreed that both employees and government are the main stakeholders for any organisation (e.g., Savage et al., 1991; Mitchell, Agle & Wood, 1997; Henriques & Sadorsky, 1999). Further, Neville and Menguc (2006), in their theoretical paper, proposed a model to explain the influence

of stakeholder interactions on organisations. The chosen stakeholders were governments, customers and employees. The authors called for studies that empirically test the suggested interaction among these stakeholders.

Indeed, Boyne (2003) stated that if regulators realise better than local agencies how to develop services, then the influence of regulation is likely to be positive. O'Higgins and Morgan (2006) categorised government as a primary stakeholder because it determines the infrastructure for the association's operations.

Thus, it is expected that there is a positive relationship between government regulation and incentives and employees' creativity.

Proposition 3: Government regulation and incentives are positively related to employees' creativity

### **5.7.2 The mediating effects of organisational motivation to innovate**

Deci (1971) argued that there are two kinds of motivations: extrinsic and intrinsic. Amabile (1985) differentiated between both types: 'An intrinsically motivated person is self-motivated, and would write even in the absence of external goals or pressures. An extrinsically motivated person is motivated by other sources, by external goals and pressures' (p. 396).

Motivational factors are significant elements in the workplace, as both intrinsic and extrinsic motivation are treated as the driving factors that lead to employees' creativity (Amabile et al., 1996). Thus, Amabile (1997) argued that the two motivation types frequently coexist; it is difficult to imagine work being performed at a workplace that is merely intrinsically motivated, although it might be easier to think that work is merely extrinsically motivated. The reason is that the two motivational types regularly occur simultaneously.

According to Amabile et al.'s (1996) theory, organisational motivation to innovate is an element of organisational work environment that contains both organisational encouragement and lack of organisational impediments. However, most studies have focused only on the direct relationship between some dimensions of organisational



motivation to innovate and employees' creativity, such as reward (e.g., Deci, 1971; Eisenberger & Rhoades, 2001; Yoon, Sung & Choi, 2015).

Moreover, as discussed in Chapter 2, prior studies have tested the direct relationship between different factors and employees' creativity, with mixed results. Thus, there is a need for further research to examine potential mediators and moderators that can affect the nature of the relationship (Carmeli, Cohen-Meitar & Elizur, 2007).

Therefore, it would be beneficial to better understand the influence of organisational motivation to innovate on employees' creativity because this concept is much more complex than simply reward, salary or annual performance evaluation. Few studies have followed this direction and investigated the direct relationship between organisational motivation to innovate as a summated variable and creativity (e.g., ElMelegy et al., 2016). Despite its significance, no studies have investigated its impact as a mediator. Therefore, this study aims to add to the existing literature by exploring the mediating role of organisational motivation to innovate in the relationship between different factors and employees' creativity.

Given that the present study investigates three types of factors, and three propositions are related to the mediating effects, each type will be discussed separately. Further, as demonstrated earlier that organisational motivation to innovate consisted of organisational encouragement and lack of organisational impediments (Amabile et al., 1996) relevant literature to organisational encouragement and lack of organisational impediments will be used in discussion below

### **The relationship between individual creativity components, employees' creativity and organisational motivation to innovate**

Shalley and Gilson (2004) argued that if creativity is valued as an outcome in the workplace, and the workforce considered this valid, it must be more willing to investigate new ideas, and be more open to communicating and searching for input from others concerning new ideas. Overall, workplaces must lead in a manner that will produce creative outcomes.

According to Amabile (1997), the organisational motivation towards innovation includes the absence of factors that can weaken creativity. This component is

considered an essential part of the push towards innovation, as it encourages both creativity and innovation. The orientation towards innovation should come, principally, from the highest levels of management. However, lower levels could well be significant in contributing to that vision. Eisenberger and Shanock (2009) clarified that enhancing creativity through tangible and socioemotional rewards reinforces creative motivational orientation. Thus, there was some evidence of a connection between both components of organisational motivation to innovate; organisations' encouragement (e.g., Ganesan & Weitz, 1996; Clark & James, 1999; Burroughs et al., 2011; Chang et al., 2014) and lack of organisational impediments (e.g., Ensor, Pirrie & Band, 2006; ElMelegy et al., 2016) and employees' creativity.

Hsu, Hou and Fan's (2011) study showed that employees' motivation to innovate might not only be affected by social environmental aspects within organisations, but also by individuals' creative self-efficacy. Moreover, Birdi, Leach and Magadley's (2016) study emphasised that employees who believed that they possessed more skills in innovation, identifying problems, and introducing and assessing solutions reported higher levels of patent submissions, besides having a superior quantity and originality of ideas, as rated by experts. Finally, Shalley and Perry-Smith (2001) examined the influence of expected evaluation and modelling on individuals' creativity. The results showed that participants had considerably higher creativity and intrinsic motivation when anticipating an informational evaluation rather than a controlling evaluation. Individuals provided with a creative example had higher creative outcomes than those provided with no example.

Thus, it is expected that organisational motivation to innovate mediates the relationship between individual creativity components and employees' creativity.

Proposition 4: Organisational motivation to innovate mediates the relationship between individual creativity components—a) domain-relevant skills, b) creativity-relevant skills and c) intrinsic task motivation—and employees' creativity.

**The relationship between determinants of work context, employees' creativity and organisational motivation to innovate**

Carmeli, Cohen-Meitar and Elizur (2007) argued that organisations should identify the significance of creative employees and continuously explore ways to develop creative behaviour.

In terms of sufficient resources, Park et al. (2014) declared that for creativity to occur in the workplace, organisations are strongly recommended to enhance various mechanisms related to knowledge-sharing, adapted in a manner that meets organisation-particular motivational requirements.

With regards to managerial encouragement, Shalley and Gilson (2004) demonstrated that leaders can influence the level of workplace creativity by influencing employees' work context. Supporting this argument, Henker, Sonnentag and Unger (2015) study resulted that the association between transformational leadership and employee creativity was mediated by promotion focus, which is related to the motivation to attain preferred end-states.

Concerning work group support, Shalley and Gilson (2004) stated that interactions with others in the workplace could significantly and positively influence employees' creativity. Therefore, different ways should be considered to encourage employees to communicate with others. This can be achieved formally, such as composing project teams or arranging meetings, or informally by allocating places in which human resources can gather and support more spontaneous interactions. For example, Binyamin and Carmeli's (2017) study resulted that employee satisfaction, which is defined as 'a feeling that one is learning and growing personally or professionally at work' (Kulik, Oldham & Hackman, 1987, p. 281), mediated the associations between teams' human and social capital and employees' creativity.

Several studies indicated that different dimensions of organisational motivation to innovate mediated the relationship between freedom and employees' creativity. For instance, De Spiegelaere et al. (2014) determined that engagement in the workplace mediated the relationship between job autonomy and innovative work behaviour, which includes idea generation. Ramamoorthy et al. (2005) showed that job autonomy had indirect effects on innovative work behaviour through the obligation to innovate.

Carmeli, Cohen-Meitar and Elizur (2007) provided evidence that creative employees search for job challenges; hence, organisations should provide them with a positive

work context that helps them perform better. Chae, Seo and Lee (2015) conducted a study which resulted that team member exchange mediated the relationship between task complexity and employees' creativity.

Regarding realistic workload pressure, ElMelegy et al. (2016) suggested that to enhance creativity, top management, which is a dimension of organisational motivation to innovate (Amabile, 1997), must lighten workload pressure on creative employees. Further, Ohly and Fritz (2010) found that challenge appraisal partially mediated the relationship between daily time pressure and employees' creativity.

Thus, it is expected that organisational motivation to innovate mediates the relationship between determinants of work context and employees' creativity.

Proposition 5: Organisational motivation to innovate mediates the relationship between determinants of work context—a) sufficient resources, b) managerial encouragement, c) work group supports, d) freedom, e) challenging work and f) realistic workload pressure—and employee' creativity.

### **The relationship between government regulation and incentives, employees' creativity and organisational motivation to innovate**

According to McLean (2005), creativity is a helpful tool to develop a positive quality of life in local government organisations. Indeed, Mack, Green and Vedlitz (2008) clarified that creativity is a useful tool for public-sector organisations to transform into flexible, more responsive units that run efficiently and service constituencies more effectively.

Government organisations often seek techniques to improve public services (Boyne, 2003). O'Higgins and Morgan (2006) classified government as one of an organisation's primary stakeholders because it determines the infrastructure for operations. According to Bartlett and Dibben (2002), over the past decade or longer, extensive reforms have emerged in public-sector organisations. Therefore, several new structures and practices have been adopted to enhance efficiency and performance.

Rainey and Bozeman (2000) reported that prior research showed that respondents who work in public sector place higher value on rewards and motives. Moreover, French and Emerson (2014) stated that the public sector might attract employees who prefer job security, career tenure and retirement benefits, which are often connected with government employment. Further, there are individuals who display behaviours and actions that are not encouraged only by extrinsic motives and self-interest.

Thus, it is expected that organisational motivation to innovate mediates the relationship between government regulation and incentives and employees' creativity.

**Proposition 6: Organisational motivation to innovate mediates the relationship between government regulation and incentives and employees' creativity.**

## **5.8 Summary**

This chapter presented the theory used and the conceptual model. Further, it defined the variables and addressed the propositions.

Chapter 6 will introduce the methodology used to answer the research question.

## **Chapter 6: Methodology—Mixed Methods Approach**

### **6.1 Introduction**

Chapter 5 discussed the theoretical framework, conceptual model and research propositions for the thesis. As discussed in Chapter 1, the following research question was examined: What is the impact of ‘organisational motivation to innovate’ on the relationship between three antecedent factors (individual creativity components, determinants of work context, and government regulation and incentives) on the outcome (creativity among employees) in Dubai government organisations?

This research has adopted mixed methods to answer the research question. Chapter 4 provided details on the qualitative cycle of research methodology that was used to gather the qualitative data. This chapter will focus on mixed methods and the quantitative cycle, which is the main study.

This chapter begins by introducing the research question. It then concentrates on issues related to the mixed method approach by explaining philosophical assumptions, approaches to research, research paradigms and the justifications for the research design. A description of the participants and the organisational context are discussed. The chapter then explores the two cycles of the research design. The focus will then turn to the quantitative cycle by highlighting the justifications for selecting a quantitative methodology, a description of the data collection procedures and a discussion of the instrument used. Ethical consideration is also discussed. Moreover, the chapter presents and explains the data analysis process. Finally, there is a summary of the chapter.

### **6.2 Mixed method**

#### **6.2.1 Philosophical assumption in mixed method**

Philosophical assumption in mixed methods research ‘consists of a basic set of beliefs or assumptions that guide inquiries’ (Guba & Lincoln, 2005, cited in Creswell & Clark, 2011, p. 39). Creswell & Clark (2011, p. 39) used worldview to describe those assumptions. The authors asserted that mixed methods researchers used a worldview

consisting of beliefs and assumptions regarding knowledge to inform their research. Moreover, the authors clarified that worldview is regularly used synonymously with paradigm, which is defined as the ‘planning framework for the research process and may include research issues, methodology, assumptions and models’ (Neuman, 2006, cited in Boonyachai, 2011, p. 72).

Although mixed methods became popular in many studies (Bryman, 2006; Leech & Onwuegbuzie, 2009), there is a disagreement among scholars concerning the origin of mixed methods. For instance, some scholars believe this method was developed at the end of 1950s (Johnson, Onwuegbuzie & Turner, 2007), during the 1960s (Leech & Onwuegbuzie, 2009), or in the late 1980s (Guest, 2013).

There were several attempts to define mixed methods. There was an agreement among scholars that mixed methods referred to the use or combination of qualitative and quantitative methodology in the same research. For instance, Johnson, Onwuegbuzie and Turner (2007) defined mixed method as:

the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration (p. 123).

According to Creswell et al. (2003, cited in Hanson et al. 2005), mixed method is defined as:

the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially, are given priority, and involve the integration of the data at one or more stages in the process of research (p. 212).

Leech and Onwuegbuzie (2009) stated that:

mixed research which involves utilizing both qualitative and quantitative research within one or more of the following or across the following four components in a single research study: a) the research objective (e.g., the researcher uses research objectives from both quantitative and qualitative research, such as the objective of both exploration and prediction); b) type of data and operations; c) type of analysis; and d) type of inference (p. 267).

## 6.2.2 Research method justifications

There are several justifications for choosing mixed method as the research paradigm for this study. First, most published mixed methods studies have been conducted to answer questions that could not be addressed by one paradigm alone (Leech & Onwuegbuzie, 2009). Qualitative research usually answers research questions that investigate 'how' and 'why', while quantitative research usually addresses 'how often' and 'how many' (Malina, Nørreklit & Selto, 2011). Hence, integration of quantitative and qualitative methods is fruitful for achieving new empirical insights (Malina, Nørreklit & Selto, 2011). The purpose of this research can be fulfilled through a combination of qualitative and quantitative approaches, because no previous studies have answered the research question. It is difficult to answer the research question with a single methodology. Thus, a mixed methods perspective has been used. Moreover, since qualitative and quantitative approaches are relevant to the study topic, semi-structured interviews and questionnaires were used. It is expected that using both methodologies would help to understand the research phenomena.

Second, human phenomena are characterised as complex, which requires research designs of greater complexity (Sandelowski, 2000). Hence, the entire behavioural data analysis necessitates a mixture of empiricism and interpretation. It can be claimed 'that both quantitative and qualitative approaches, components, data, and/or strategies for analysis are essential to effectively understand human behaviour, whether individual, group, or societal' (Bazeley, 2012, p. 815). Thus, the combination of quantitative and qualitative approaches have been used to highlight those behavioural changes as a result of the following different factors individual, work context and government regulation and incentives.

Third, the mixed method approach attempts to consider multiple opinions, perspectives and situations that comprise the standpoints of qualitative and quantitative research (Johnson, Onwuegbuzie & Turner, 2007). Consequently, adopting this method offers more accurate and powerful techniques to recognise phenomena that lead to a better understanding (Hohenthal, 2006). A variety of sources, including key decision-makers and other employees from three different organisations, was used to collect the data.



Creswell and Clark (2011) clarified that the researcher makes a decision concerning the priority of the qualitative and quantitative strands. The authors defined priority as ‘the relative importance or weighting of the qualitative and quantitative methods for answering the study’s question’ (p. 65). The authors cited three options for mixed method design:

- 1) Both methods might have an equal priority and the two methods are equally significant in answering the research question.
- 2) The research might prioritise quantitative methods; in such cases, the focus is on quantitative methods while the qualitative method plays a secondary role.
- 3) The research might prioritise qualitative methods; in such cases, the focus is on qualitative methods, while quantitative methods play a secondary role.

This study has adopted mixed method. However, priority was given to the quantitative methodology, while the qualitative cycle had a secondary role. Due to the lack of similar studies, the role of qualitative methodology was secondary and aimed to enable a deeper understanding of the issues related to creativity in public-sector organisations, and to inform the quantitative survey. The quantitative methodology was used to confirm the findings of the qualitative study and concentrated on understanding the mediating role of organisational motivation to innovate between the various factors and employees’ creativity.

### **6.2.3 Approaches to research**

Ang (2014) stated that key approaches to research are positivist or interpretivist.

#### ***Positivist approach***

Positivism is an approach to social research that seeks to apply the natural science model of the research investigations of social phenomena and explanation of the social world (Denscombe, 2002, p. 14). The positivist approach highlights that social science research must, as much as possible, search to obtain the same degree of clarification and forecast as natural sciences (Ang, 2014). Positivists believe that the world functions by laws of cause and effect. They focus on rigour, replicability of their studies, the reliability of observation and the generalisability of results (Sekaran and Bougie, 2016).

According to Gray (2014), positivism holds that:

- 1) Reality includes what exists in the science
- 2) Investigation must be conducted according to scientific observation
- 3) The natural and human scientific share same logical and methodological standards communicating with truths and not with values.

### ***Interpretivist approach***

Interpretivism is an umbrella term for a range of approaches that reject some of the basic premises of positivism (Denscombe, 2002, p. 18). This approach is used synonymously with the constructivist approach (Denscombe, 2002; Ang, 2014). It is more exploratory than the positivist approach. It highlights the relationships between various actors, factors and contexts. Thus, it aims to investigate the insufficiency of the positivist approach and examines research issues holistically (Ang, 2014). Interpretivists declare that natural reality, the laws of science and social reality are diverse, which is why there is a need for different methods (Gray, 2014). Therefore, interpretivists do not seek the objective truth; instead, they intend to discover the rule individuals employ to make sense of the world through examining what takes place in individuals' minds (Sekaran & Bougie, 2016).

Creswell and Clark (2011) agreed that multiple worldviews can be used in mixed methods and they gave an example of using both constructivist and positivist worldviews in the same mixed methods study.

This study has opted for mixed methods; the paradigms used in this research were both positivist and interpretivist. This research began with qualitative interviews. Therefore, an interpretivist perspective was used to elicit meanings from participants and build a deeper understanding of creativity in public-sector organisations. In Cycle 2, the study moved to a quantitative survey. Hence, a positivist worldview was used to identify the mediating impact of 'organisational motivation to innovate' on the relationship between three antecedent factors—individual creativity components, determinants of work context and government regulation and incentives—on the outcome, creativity among employees. It was framed with Amabile's (1988) componential theory of creativity and innovation in organisation, which was tested by the questionnaire.

### ***Inductive v. deductive approach***

Ang (2014) mentioned that the most well-known methods of categorising research are inductive or deductive. Newsome (2016) asserted that the selection between inductive and deductive affects other approaches in research. Thus, scholars have distinguished between the two approaches as follows:

Deduction is a proposition guaranteed by preceding propositions (Newsome, 2016, p. 158). Ang (2014) stated that deduction is theoretically driven, which means that the researcher starts with establishing associations between concepts, with the assistance of theories, and later narrowing them down to more hypotheses. These hypotheses are then tested using data. The test will decide whether the hypotheses are supported. Finally, conclusions and implications are drawn from the findings. Gray (2014) added that the deductive approach shifts towards hypotheses testing, then the principle is proved, rejected or changed. Thus, Stokes and Wall (2014) clarified that the deductive approach is generally used with positivistic, experimental-style philosophies and methodologies that prioritise objectivity. Further, deductivism eventually forms categorical hypotheses within a positivistic-style model.

Induction is a proposition suggested by an individual observation (Newsome, 2016, p. 159). Ang (2014) stated that through the inductive approach, the researcher makes observations and attempts to discover patterns from those observations. Propositions and hypotheses are formulated to assess and clarify the observations. Conclusions and theoretical frameworks are then developed. Gray (2014) argued that through the inductive approach, plans are made for gathering data, and data are analysed to identify any patterns between the variables. From those observations, it might be probable to construct generalisations, associations and even theories. Thus, Stokes and Wall (2014) asserted that the inductive approach generally uses interpretivism. Both inductivism and interpretivism tend to develop and use qualitative data.

In Cycle 1 of the research design of this study, an inductive approach was used to make observations based on participants' points of views. Through this, the researcher was able to discover the definitions of creativity, its relationship to innovation, and factors affecting employees' creativity. In Cycle 2 of the research design, a deductive approach was used because it was theoretically driven, which focused on Amabile's

(1988) componential theory of creativity and innovation in organisations. Moreover, based on the theory and findings of Cycle 1 of the research design, propositions were formed.

### **6.3 Research design**

As stated in Chapter 3, Sekaran and Bougie (2013, p. 95) defined research design as a blueprint for the collection, measurement and analysis of data, based on the research questions of the study. While Vogt (2007, p. 8) defined research design as a plan for collecting evidence that can be used to answer a research question. According to Sekaran and Bougie (2013), research design is concerned with a variety of elements, such as the purpose of the study, research strategy, location of the study, the extent of researcher inference and the unit of analysis.

Leech and Onwuegbuzie (2009) affirmed that three-dimensional typologies of mixed method designs exist: 1) a level of combination (partly mixed v. completely mixed), 2) a time orientation (parallel v. sequential) and 3) an affirmation of approaches (equivalent status v. leading status).

Mixed method research provides numerous research designs or frameworks. For instance, Creswell (1994) identified three types of models in the mixed methods literature. The first is a two-phase design approach, in which two cycles are conducted separately. In this model, the qualitative cycle is conducted, followed by a separate quantitative cycle. This kind of research design has several advantages: the two paradigms are obviously conducted separately and it permits the researcher to present comprehensively the paradigm assumptions behind every cycle. The disadvantage is that the reader might not distinguish between the two cycles. The second model is called the dominant-less-dominant design, in which the study is presented within a single dominant paradigm with one small element of the overall study drawn from the substitute paradigm. The main advantage of this design is that it reflects a proportionate paradigm in the study and it collects restricted information to elaborate one aspect of the study. The main disadvantage is that the qualitative purist would consider this approach as misapplying the qualitative paradigm, as the essential assumptions of the study would not match with qualitative data gathering process. Conversely, quantitative purists would be also interested in the association. The last

model is the mixed methodology design, which shows the highest level of paradigm mixing of all three designs. Aspects of qualitative and quantitative paradigms would be combined at all or several methodological steps in the design. This paradigm may be integrated either in the introduction, literature review, theory, objective statement and research questions. This approach can complicate the design and utilises the advantages of both qualitative and quantitative paradigms. In addition, the general design possibly best reflects the research process in terms of working between inductive and deductive models of thinking. However, it requires a sophisticated knowledge of both qualitative and quantitative paradigms, conveys the connecting paradigms that might not be acceptable to some authors, and requires that the researcher convey a mixture of paradigms that might be considered strange to other researchers.

Indeed, mixed methods research is conducted in two forms: parallel or sequential (e.g., Creswell, 1994; Leech & Onwuegbuzie, 2009; Malina, Nørreklit & Selto, 2011). For example, Leech and Onwuegbuzie (2009) highlighted that this method usually involves partially mixed methods or fully mixed methods. Fully mixed methods combine quantitative and qualitative practices within one or more phases of the research or across the phases. In partially mixed methods, both qualitative and quantitative elements are performed either parallel or sequentially before being mixed at the data interpretation phase.

Drawing from Creswell (1994), the two-phase design approach was adopted in this research: qualitative interviewing followed by a survey questionnaire. There were several reasons for choosing this research design. First, few studies related to creativity have been conducted within the UAE workplace context (Politis, 2005, 2015; Politis & Politis, 2010; Dayan, Zacca & Di Benedetto, 2013). Thus, this research started with the qualitative phase: collecting data from the key decision-makers in three government organisations in Dubai. Data collected provided a description of creativity in public-sector organisations and factors that influence employee creativity. However, this data were collected from key decision-makers, not employees. In the second phase, the survey questionnaire was used to identify whether organisational motivation to innovate mediates the relationships between those factors and employees' creativity in Dubai government organisations. Hence,

the current study followed two cycles (see Figure 6.1). As Cycle 1 of this research was explained in Chapter 3, the next section will focus only on the quantitative (main) cycle of this thesis.

## **Quantitative cycle**

### ***Survey questionnaire***

Quantitative research methods were initially introduced in the natural sciences to investigate natural phenomena (Myers, 2009). The results from Cycle 1 filled the gap left by the lack of studies on this topic and informed the researcher of the applicability of Amabile's (1988) componential theory of creativity and innovation in organisations. In addition, the contribution of the interviews was the discovery that Dubai government regulation and incentives influence employee creativity. This contribution overcomes the limitation of Amabile's (1988) theory, which does not consider the influence of external factors outside the organisation on employees' creativity.

As clarified, these data were obtained from key decision-makers who participated in the exploratory cycle of the research design, leading to a second cycle by distributing the questionnaire to investigate the mediating effects of organisational motivation to innovate on the relationship between the specific factors and employees' creativity.

### **Pilot study for the survey**

According to Teijlingen and Vanora (2002, p. 33), a pilot study refers to a mini version of a full-scale study (i.e., 'feasibility' studies), and the specific pre-testing of a particular research instrument, such as a questionnaire or interview schedule.

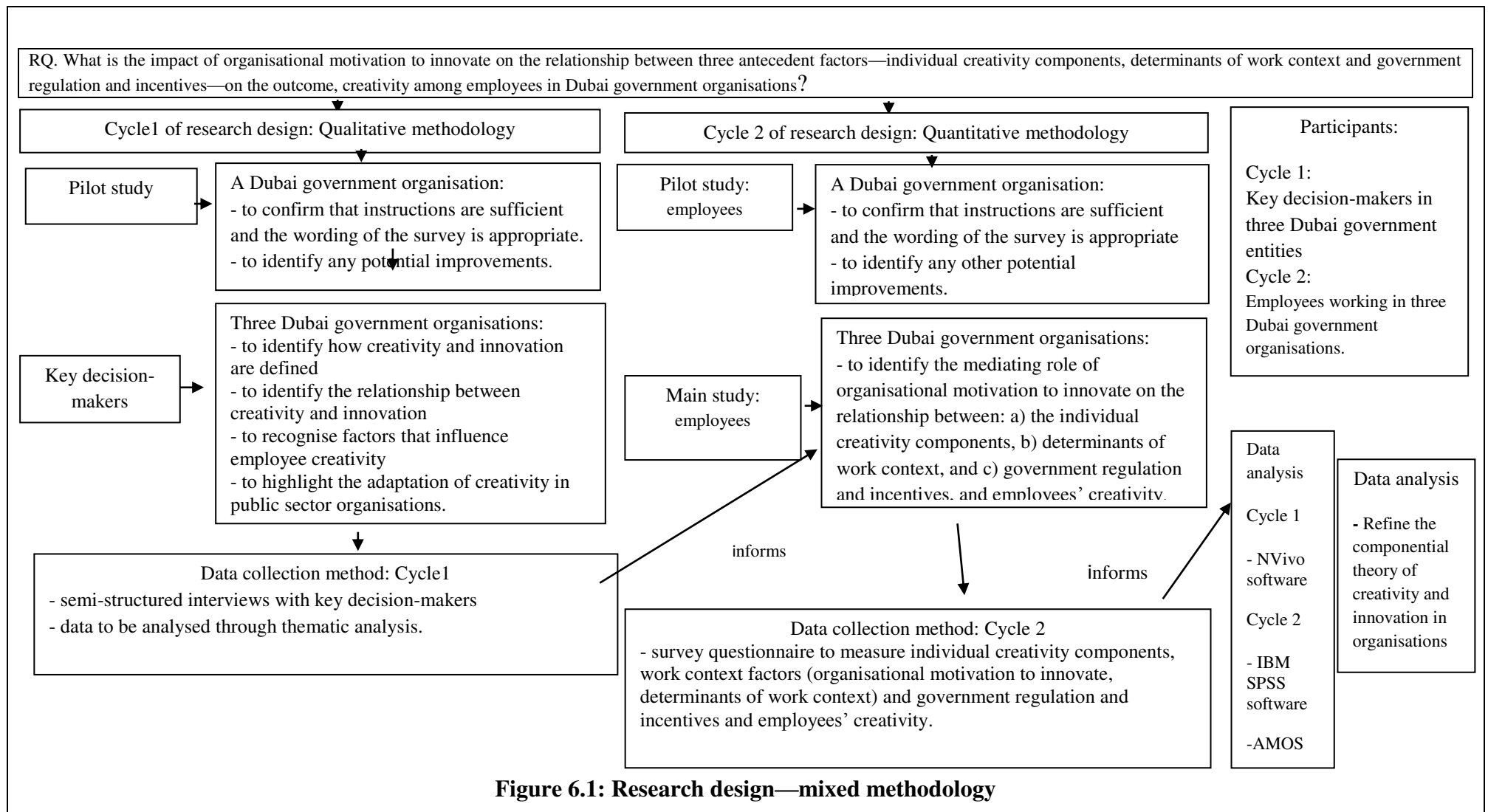
Thabane et al. (2010) declared that the major objective of a pilot study is to evaluate feasibility to avoid potentially disastrous results of relying on a large study that might potentially drown the entire research achievement. Teijlingen and Vanora (2002) listed 14 different motives for conducting pilot studies:

- 1) Developing and examining sufficiency of research instruments
- 2) Testing the feasibility of the full-scale study or survey
- 3) Establishing a research protocol

- 4) Evaluating whether the research protocol is realistic and practical
- 5) Determining whether the sampling frame and tool are efficient
- 6) Examining the probable success of suggested recruitment methods
- 7) Recognising logistic problems that may occur when using suggested methods
- 8) Estimating variability in findings to determine sample size
- 9) Gathering primary data
- 10) Identifying the required resources for planning the study
- 11) Examining the suggested data analysis means to discover possible problems
- 12) Establishing research question and plan
- 13) Training researcher in various components of the research procedure
- 14) Perusing funding entities to assess if the main study is feasible and deserves funding

As mentioned earlier, Connelly (2008) clarified that a pilot study can be conducted at one site to examine processes that will then be used at multiple sites. Also, as clarified in Chapter 3, the pilot study test was conducted in both cycles of the research design.

The result of the pilot study and changes made to the main survey as a result of the pilot will be discussed in the following section :6.13.1 Pilot study process.





## 6.4 Sampling design

Sampling is ‘the process of selecting a sufficient number of the right elements from the population, so that a study of sample and an understanding of its properties or characteristic make it possible for us to generalize such properties or characteristics to the population elements’ (Sekaran & Bougie, 2013, p. 244). Sampling is considered a significant step in the research process because it assists to decide the quality of inferences made by the researcher that stem from the underlying results (Collins, Onwuegbuzie & Jiao, 2006).

To better understand sampling, population and sample concepts should be defined. Population refers to ‘the entire group of people, events or things of interest wishes to investigate’ (Sekaran & Bougie, 2013, p. 240), while sample is ‘a subset of the population’ (Sekaran & Bougie, 2013, p 241).

According to Sekaran and Bougie (2013) two main types of sampling design exist: probability and non-probability sampling. In probability sampling ‘the elements in the population have some known, nonzero chance or probability is being selected as a sample subjects’. On contrast, in non probability sampling ‘the elements do not have a known or predetermined chance of being selected as a subject’ (p. 245).

Since this study’s paradigm was mixed method, the same strategy was adopted in sampling design. Teddlie and Yu (2007) stated that mixed method sampling integrates well-established qualitative and quantitative techniques in creative manners to answer research questions made by mixed methods research designs. Collins, Onwuegbuzie and Jiao (2007) illustrated that in mixed methods studies, sampling scheme and sample size for both qualitative and quantitative stages of the research must be considered. Accordingly, mixed methods sampling designs embody the framework within which the sampling takes place, comprising the number and types of sampling schemes, and the sample size. Moreover, multiple samples exist in mixed methods research; these samples may differ in size, according to the research strand and research question, from a small number of cases to a substantial number of units (Teddlie & Yu, 2007).

Collins, Onwuegbuzie and Jiao (2006) categorised 23 kinds of mixed methods sampling strategies (see Table 6.1).

**Table 6.1: Major sampling schemes in mixed methods research**

<b>Sampling scheme</b>	<b>Description</b>
Simple	Every individual in the sampling frame (i.e., desired population) has an equal and independent chance of being chosen for the study
Stratified	Sampling frame is divided into subsections comprising groups that are relatively homogeneous with respect to one or more characteristics; a random sample from each stratum is selected
Cluster	Selecting intact groups representing clusters of individuals rather than choosing individuals one at a time
Systematic	Choosing individuals from a list by selecting every $k^{\text{th}}$ sampling frame member, where $k$ typifies the population divided by the preferred sample size
Multistage random	Choosing a sample from the random sampling schemes in multiple stages
Maximum variation	Choosing settings, groups and/or individuals to maximise the range of perspectives investigated in the study
Homogeneous	Choosing settings, groups and/or individuals based on similar or specific characteristics
Critical case	Choosing settings, groups and/or individuals based on specific characteristic(s) because their inclusion provides the researcher with compelling insight about a phenomenon of interest
Theory-based	Choosing settings, groups and/or individuals because their inclusion helps the researcher to develop a theory
Confirming/ Disconfirming	After beginning data collection, the researcher conducts subsequent analyses to verify or contradict initial results
Snowball/chain	Participants are asked to recruit individuals to join the study
Extreme case	Selecting outlying cases and conducting comparative analyses
Typical case	Selecting and analysing average or normal cases
Intensity	Choosing settings, groups and/or individuals because their experiences relative to the phenomena of interest are viewed as intense but not extreme
Politically important case	Choosing settings, groups and/or individuals to be included or excluded based on their political connection to the phenomena of interest

<b>Sampling scheme</b>	<b>Description</b>
Random purposeful	Selecting random cases from the sampling frame and randomly choosing a desired number of individuals to participate in the study
Stratified purposeful	Sampling frame is divided into strata to obtain relatively homogeneous subgroups; a purposeful sample is selected from each stratum
Criterion	Choosing settings, groups and/or individuals because they represent one or more criteria
Opportunistic	Researcher selects a case based on specific characteristics (i.e., typical, negative or extreme) to capitalise on developing events occurring during data collection
Mixed purposeful	Choosing more than one sampling strategy and comparing the results emerging from both samples
Convenience	Choosing settings, groups and/or individuals that are conveniently available and willing to participate in the study
Quota	Researcher identifies desired characteristics and quotas of sample members to be included in the study
Multistage purposeful	Choosing settings, groups and/or individuals representing a sample in two or more stages. The first stage is random selection and the following stages are purposive selection of participants
Random	
Multistage purposeful	Choosing settings, groups and/or individuals representing a sample in two or more stages in which all stages reflect purposive sampling of participants

Source: Collins, Onwuegbuzie and Jiao (2007, p. 84–85).

As mentioned in Chapter 3, multistage purposeful was selected as a sampling design for this research. According to Collins, Onwuegbuzie and Jiao (2007), multistage purposeful refers to ‘choosing settings, groups and/or individuals representing a sample in two or more stages in which all stages reflect purposive sampling of participants’ (p. 85). The rationales behind selecting this design were: First, as discussed earlier the research design was conducted in two cycles. Each cycle involved different samples: key decision-makers for Cycle 1, and employees working in three organisations that focus on creativity for Cycle 2. Thus, multistage purposeful design enables the selection of targeted samples for each cycle. Second, to investigate the research question and achieve the aims behind it, it is required to collect the data from the right sample. The sampling here is restricted to particular types of

individuals who can provide the required information. Thus, participants were selected following a purposive sampling strategy.

Pickard (2013), stated that as a general rule, quantitative research tends to employ probability sampling techniques, while qualitative research employs purposive sampling.

### **Population and sample**

The population included local and expatriate employees working in Dubai government organisations. The sample for the study was employees working in one of three Dubai government organisations. They were selected randomly. The focus was on full-time employees who work eight hours per day. The sample included employees who hold various job designations to ensure a range of jobs were available to cover different work-related activities.

As will be discussed later, factor analysis and structural equation modelling (SEM) will be used to analyse gathered data. Hair et al. (2010) clarified that sample size should be considered to run factor analysis. For factor analysis, a sample size of 100 or more is preferable. Moreover, as a general rule, the authors advised having at least five times as several observations as the number of variables to be analysed; the more acceptable sample size would have a 10:1 ratio (Hair et al., 2010).

In terms of SEM, according to Hair et al. (2010, p. 664), the minimum sample size for a specific SEM model relies on different factors, comprising the model complexity and the commonalities (average variance extracted among items) in every factor:

- 1) SEM models encompassing five or fewer constructs, each with more than three items, and with item commonalities (6 or more), can be satisfactorily estimated with samples of 100—150.
- 2) When the number of factors is greater than six, some of each have fewer than three measured items as indicators, and multiple low commonalities exist, sample size might exceed 500.
- 3) The sample size should be adequate to permit the model to run; more importantly, it should effectively embody the population of interest.

Thus, the sample size for the quantitative cycle was 668 employees working in three Dubai government organisations.

## **6.5 Organisational context**

The site for the study was three Dubai government organisations. The three government organisations were given the fictitious names of Organisation 1, Organisation 2 and Organisation 3.

Although the organisations are different in nature, they provided an appropriate setting to achieve research objectives for several reasons. First, creativity is part of these organisations' visions, missions and strategic plans. Second, creativity is among the behavioural competencies by which all employees must be evaluated in annual performance appraisals (e.g., a number of generated ideas annually). Finally, the three organisations won several internal and external awards for which creativity was a main criterion.

## **6.6 Unit of analysis**

As mentioned in Chapter 3, Cavana, Delahaye and Sekaran (2001) illustrated that the unit of analysis 'refers to the level of aggregation of the data collected during the subsequent data analysis stage' (p. 110). The authors mentioned that unit of analysis can be individuals, dyads, groups, organisations or cultures. The unit of analysis in this research was the level and the focus was on employees' perceptions.

## **6.7 Instrument: survey questionnaire**

A survey questionnaire was used for the quantitative strand to answer the research question. A questionnaire 'is a set of questions asked in a specific order. All respondents are asked the same questions, in the same words, in the same order' (Bedward, 1999, p. 64). Questionnaires can be either self-administrated (i.e., filled out by the respondent away from the researcher) or administered by the researcher (Dawson, 2009).

Dawson (2009) identified three basic forms of questionnaire. Close-ended questionnaires are considered the most familiar. This form aims to generate statistics

in a quantitative study, as it pursues a set format that can be mostly scanned directly into a computer to simplify the data analysis process and produce greater numbers. The second form is an open-ended questionnaire, which is used in qualitative research and is based on respondents' viewpoints rather than numbers. Although this form does not feature boxes to tick, it contains blank sections to enable the respondent to write answers. There are no typical answers to the questions, so analysing data is a complex process. The last form is a combination of both opened and closed questions. Various questionnaires start with closed questions, and boxes for ticking or scales for ranking, and end with open-questions for additional detailed answers. Sekaran and Bougie (2013) asserted that questionnaires can be administrated individually, mailed to the targeted sample or electronically distributed.

## **6.8 Justifications for selection of questionnaire instrument**

A questionnaire is the most appropriate method to collect data for this cycle of the research because it is easier to achieve responses from a huge number of people in a short period (Rowley, 2012; Nardi, 2014). Further, it is easier to reach people in diverse geographic areas (Sekaran & Bougie, 2013). This is highly suitable for this research, since data were gathered from many employees working in three different organisations. The data collected might be observed to generate results that are more generalisable (Rowley, 2012).

According to Nardi (2014), self-administrated questionnaires are ideally designed for these circumstances for several reasons:

- 1) Measuring variables with several values or reply categories are too lengthy to read in an interview or on the telephone
- 2) Examining attitudes and viewpoints that are regularly recognisable
- 3) Illustrating characteristics of a huge population
- 4) Investigating behaviours that might be more stigmatising or difficult for individuals to answer face-to-face.

Thus, a self-administered questionnaire was used in this research.

Conversely, Sekaran and Bougie (2013) clarified that there are numerous means for administering questionnaires, such as in magazines or newspapers, mailed to participants, or electronically distributed to targeted people.

## **6.9 Justifications for selection of KEYS questionnaire as a research instrument**

KEYS questionnaire was used to investigate the work context factors and creativity for several reasons.

First, the results of Cycle 1 of the research design demonstrated the applicability of the componential theory of creativity and innovation in organisation in Dubai government organisations. Moreover, the key decision-makers' statements categorised the work factors as per Amabile et al.'s (1996) Climate for Creativity (KEYS). Thus, the theoretical basis of the KEYS instrument is the componential theory of creativity and innovation in organisations (Amabile, 1988). Hence, the KEYS questionnaire enhanced validity and presented high validation between the conceptual and operational definitions. Second, according to the KEYS Norm Group booklet (2010), KEYS is an instrument designed to assist leaders to have a clear picture of the climate for creativity inside a work group or organisation. Work environment significantly affects employees' capabilities to be creative; thus, this instrument was considered an effective tool to easily achieve the research objective.

Second, Mathisen and Einarsen's (2004) review showed that the KEYS questionnaire is one of the usable instruments for assessing these work environmental factors. Further, according to the authors, the KEYS questionnaire comprises many factors depicted in the research literature as either supports or obstacles to creativity at numerous levels of the organisation, in addition to questions for evaluating perceptions of real creativity and productivity in the organisation. KEYS questionnaires allow a thorough assessment of employees' perceptions of the work context, and the association between those perceptions and judgements of real creativity.

## 6.10 Measurement

According to Vogt (2007) ‘a common definition of measurement is assessing numbers or labels to variables’ (p. 9). Frankfort-Nechmias and Nechmias (1996) argued that measurement is strongly related to operational definitions. They defined operational definitions ‘as the measurement procedures bridging the conceptual–theoretical level with the empirical–observational level’ (p. 155).

The questionnaire was divided into six main sections:

- 1) Demographic information: seven items contain all the demographic details that distinguish between the participants, including gender, nationality, age group, profession category, educational level, years of experience and employees’ functional area.
- 2) Individual creativity components: As clarified in Chapter 5, Amabile (1988) stated that all three elements of individual creativity (intrinsic task motivation, domain-relevant skills and creativity-relevant processes) are crucial. No one element is enough for creativity. Thus, all factors were assessed as follows:
  - a) Intrinsic task motivation: four items developed by Eisenberger and Rhoades (2001) were used to assess the extent to which participants considered their work interesting, enjoyable, boring and unpleasant. An example item is ‘My job is interesting’.
  - b) Domain-relevant skills: five items developed by Sawyer (1992) were used to measure process clarity, which reflects domain-relevant skills. Employees were asked about their certainty in terms of the procedures they must use at work. An example item is ‘I know how to divide my time among the tasks’.
  - c) Creativity-relevant processes: three items developed by Tierney (1997) were used to measure creative self-efficacy, which reflects creativity-relevant processes. Employees were asked about their confidence in their capability to be creative. An example item is ‘I feel that I am good at generating novel ideas’.
- 3) The KEYS questionnaire’s work environment items were developed by Amabile (1996). The questionnaire measured eight aspects of organisational work environment:



- a) Organisational encouragement was assessed by a 15-item scale. An example item is ‘People are encouraged to solve problems creatively in this organisation’.
  - b) Managerial encouragement was assessed by an 11-item scale. An example item is ‘My supervisor serves as a good work model’.
  - c) Work group support was assessed by an eight-item scale. An example item is ‘There is a free and open communication with my work group’.
  - d) Sufficient resources was assessed by a six-item scale. An example item is ‘Generally I can get the resources I need for my work’.
  - e) Challenging work was assessed by a five-item scale. An example item is ‘I feel I am challenged by the work I am currently doing’.
  - f) Freedom was assessed by a four-item scale. An example item is ‘I have the freedom to decide how I am going to carry out my projects’.
  - g) Lack of organisational impediments was assessed by a 12-item scale. An example item is ‘There are many political problems in this organisation’.
  - h) Realistic workload pressure was assessed by five-item scale. An example item is ‘I have too much work to do in too little time’.
- 4) Government regulation and incentives: four items developed by Zailan et al. (2012) were used. Employees were asked to assess legislation, standards and rules that comprise both imposition and inducement elements set by the local government. Since Zailan et al.’s (2012) study was related to green supply chain initiatives, the phrases were changed from green supply chain initiatives to creativity initiatives. Further, statements related to parent companies, foreign governments or international organisations mentioned in the original study were replaced by mentions of the Dubai government. Thus, two items were deleted. The first related to financial incentives offered by international organisations, such as the United Nations. The second related to firms’ parent companies. Since the public sector is mainly influenced by government regulation, only items relating to this were kept. Thus, four out of six items were adapted and modified. An example item is ‘The Dubai government sets clear performance standards with regards to creativity’.
- 5) Creativity was assessed by a six-item scale. An example item is ‘My area of this organisation is creative’.

- 6) One open-ended item was added to recognise the areas for improvement for creativity. This question was ‘What would you change in order to improve creativity (idea generation)?’.

The instrument used a four-point scale to rate and assesses items of different factors and creativity. According to Holmesa and Mergen (2014), in a four-point scale, the middle option does not exist. This type of scale is called a ‘forced choice’ method because the neutral option is deleted (Allen & Seaman, 2007 cited in Holmesa & Mergen, 2014). The main reason for using a 4-point scale is that the KEYS questionnaire uses the same ratings. The anchors used were: 1 = Never, 2 = Sometimes, 3 = Often, 4 = Always.

### **6.11 Data collection**

According to Fink (1995, cited in Connelly, 2009), a survey is a ‘system to collect information to describe, compare, or explain knowledge, attitudes, and behaviors’ (p. 114). Bedward (1999) illustrated that major survey methods for gathering primary data are classified into observation, experimentation and questioning. Since the research design included interviews and a questionnaire, survey questioning research was used to collect data.

Before the data collection process of each cycle began, the researcher had to apply for special approval to undertake research involving human participants. Once this approval was obtained, the data were collected.

Analysing the data of Cycle 1 generated some new insights. The data highlighted different factors that influence employees’ creativity. As mentioned earlier, the findings showed the applicability of componential theory of creativity and innovation in organisation in Dubai government organisations. Moreover, work context factors indicated those factors matched with the KEYS questionnaire. As the KEYS questionnaire was not available online, a proposal was sent to the Center for Creative Leadership (CCL), the copyright owner of the KEYS questionnaire, to seek permission to use the ‘KEYS to Creativity and Innovation’ for this study. On 13 November 2014, a letter of approval was subsequently received from CCL, allowing

the use of the KEYS questionnaire (see Appendix 8), along with a copy of the KEYS questionnaire.

## **6.12 Questionnaire structure**

Before focusing on the quantitative data collection process, several issues related to questionnaire structure were discussed. The wording of the items must represent both the educational level and reading language capability of respondents (Nardi, 2014). Several suggestions provided by Dawson (2009) in terms of wording the questionnaire, such as questions must be short and straightforward, they should not consist of prestige bias, and some matters that might be highly sensitive could be asked indirectly. Sekaran and Bougie (2013, p. 149) highlighted that the principle of wording is related to several factors:

- 1) The suitability of the question's content
- 2) How the questions are worded and the degree of sophistication of the language
- 3) The kind and form of questions
- 4) The series of the questions
- 5) The personal data required from participants.

A combination of both open and closed questions was used. Closed-ended questions were chosen for most questions and participants were offered a set of answers and asked to select the one that most strongly represented their views. According to Nardi (2014), this form of question offers participants standardised answers to choose from. Further, it is easier and faster for them to accomplish and coding the answers is easier for the researcher. One optional open-ended question was added to identify the areas of improvement for creativity based on employees' experience.

As mentioned earlier, Nardi (2014) explained that for various respondents, English might not be their first language. Therefore, either translations are required or explanations of words could be provided for respondents with limited English.

In terms of the used language, Arabic is the official language of the UAE. However, English is well understood and vastly used in the country (Abdulla, Djebarni & Mellahi, 2011). Despite the widespread use of English, the researcher decided that language might create a bias for some participants. As the KEYS survey questionnaire

is designed in English, the researcher contacted the CCL to clarify whether an Arabic version of the questionnaire was available. Unfortunately, the response was negative. Hence, the KEYS questionnaire, and other items, was translated into the Arabic by a professional institute in Dubai. To ensure a better match between the Arabic and English versions, the translated Arabic version was translated back into English. Thus, the bilingual version was used in both the pilot study and main survey to give respondents the ability to choose the language with which they were more comfortable.

As per the request of the CCL, on all printed and electronic surveys using KEYS item content, the researcher included the following copyright information: ‘©1987, 2009 Teresa M. Amabile, Ph.D. and Center for Creative Leadership. All Rights Reserved’. The researcher also indicated that the item content is reprinted in the survey with CCL’s permission. This wording used was ‘Items from KEYS are reprinted, for research purposes only, with the permission of Teresa M. Amabile, Ph.D., and the Center for Creative Leadership’.

The KEYS questionnaire is available in two forms: online and hard copy. The researcher chose the hard copy version and sent it to respondents by email. To be more specific and draw from circumstances illustrated by Nardi (2014), the self-administrated questionnaire was used to investigate the different variables.

### **6.13 Steps in the quantitative data collection process**

The quantitative data collection process comprised two parts: the pilot study and the main study.

#### **6.13.1 Pilot study process**

A pilot study for the questionnaire was performed. Drawing from Connelly (2008), a pilot study was conducted at only one site (i.e., one of the organisations). Before participants were approached, official written permission was sought from one of Dubai government organisations for their cooperation in the pilot study. When the ethics application was approved, the human resources department in this organisation provided the researcher with a list of employees.

Initially, the pilot study sample comprised 20 employees (or more, depending on response saturation). The study adopted a questionnaire in which reliability and validity were already established (KEYS Norm Group booklet, 2010). Hence, the pilot study did not consider it necessary to test the questionnaire's reliability and validity.

The researcher conducted the pilot study to collect data from employees. Participants were asked to spare up to one hour of their time to complete the questionnaire. The questionnaire required the participants to rank their opinion on several important issues related to the specific work environment factors that influence employees in the public sector.

Participants were contacted by the researcher by email and provided with information related to the study (i.e., the pilot study participant information sheet) (see Appendix 9). Questionnaires containing 97 questions (see Appendix 10) were sent to participants, who were asked to print and complete the hard copy of the questionnaire at their place of work or any convenient location at a time convenient to them. They were asked to drop the completed questionnaires in a sealed envelope in a locked drop box located at a designated place within the organisation. As clarified in both versions of the pilot study participant information sheet and participant recruitment email, no identifying data were requested from participants.

Once the initial emails were sent to participants, and due to the absence of identifying data, a second and third reminder email was sent to the entire group with a notice that those who have already sent the questionnaire should ignore the reminders. The researcher collected the completed questionnaires from the locked drop boxes on a previously agreed date. The results of the pilot study showed that the response rate was 56 per cent. Twenty-eight of 50 questionnaires were returned. The completion time was approximately 17–40 minutes.

From the pilot study, the researcher learnt that participants answered all multiple-choice questions. However, the following open-ended question was not answered by all participants: 'What would you change in order to improve creativity (idea generation)?'.

Some minor necessary changes had been made to the Arabic questionnaire before conducting the main study. Also, additional questions related to respondents' age groups were added to the demographic information section. Therefore, the same number of items, in addition to respondents' age groups, used in pilot study was repeated in the main study.

### **6.13.2 Administration of the main study**

Connelly (2008) illustrated that despite similar processes in both the pilot study and the main study, the pilot study might make conducting the main study easier and less expensive. Hence, the same processes were followed before conducting the main study. Before participants were approached, official written permission was sought from three Dubai government organisations, requesting their cooperation for the main study. Although one organisation allowed the researcher to conduct both the pilot and main study, the main study included a new set of participants who have not previously been exposed to the study. The human resources departments in the three organisations were requested to provide the researcher with lists of their employees.

The data collection was then proceeded as follows: Participants were then contacted by the researcher by email and telephone and provided with information related to the study (see Appendix 11: Main Study Participant Recruitment Email). Participants were asked to complete a paper copy of the emailed questionnaire (see Appendix 12). They needed to print and complete the questionnaire with the attached Main Study Participant Information Sheet (see Appendix 13). Participants were requested to complete the hard copy of the questionnaire at their place of work (or any convenient location), at a time convenient to them. Once completed, the survey was to be dropped (in a sealed envelope) into a locked drop box located at a designated place within the organisation. No identifying data were asked from participants. The researcher collected the completed questionnaires from the locked drop boxes on a previously agreed date.

Once the initial emails were sent to participants, and due to the lack of identifying data, a second, third and fourth reminder email was sent to the entire group with a notice for those who had already sent the questionnaire to ignore the reminders.

## **6.14 Ethical considerations**

All required information and documents concerning the research were provided to the UOW Human Research Ethics Committee. The first cycle of qualitative interviews was approved by the UOW Human Research Ethics Committee (Ethics Number: HE13/539, approval date 30 January 2014) (see Appendix 1). The second cycle of survey questionnaire was also approved (Ethics Number: HE14/430, approval date 15 December 2014) (see Appendix 14). Finally, amendment in Cycle 2, based on the theoretical contribution, was approved (Ethics Number: HE14/430, approval date 20 November 2015) (see Appendix 15).

## **6.15 Data analysis process**

Sekaran and Bougie (2013) clarified that in the data analysis phase, the data collected are statistically analysed to check if the hypotheses were supported. Data analysis and results will be presented in Chapter 7. The following steps will be used for data analysis: preliminary analyses (which includes the personal profiles of the participants), descriptive analyses, checking missing data, outlier detection, distribution of data, normality, reliability of the survey instrument, and exploratory factor analysis. Finally, confirmatory factor analysis and SEM were used to analyse the data.

### **6.15.1 Descriptive statistics**

Descriptive statistics ‘is numerical statements about the properties of some data’ (Haslam & McGarty, 2014, p. 128). It is used to manipulate a body of data (Leedy & Ormrod, 2016). It focuses on clarifying numbers and the associations among them. Very often, the purpose is to find the significance of the numbers, to sum them up in a method to render them as simple as possible to recognise (Dewberry, 2004). Adams, Khan and Raeside (2014, p. 171) elaborated that either tabular or graphical forms can be used to display statistics.

This research concentrates on the descriptive statistics of characteristics and demographics of participants. The demographic information of participants consists of gender, nationality, profession category, level of education, age, years of experience and area of work.

Moreover, respondents' data mostly related to factors that influence employees' creativity. Thus, descriptive statistics will be provided before advanced analysis will be adopted (factor analysis, SEM).

### **6.15.2 Missing data**

According to Hair et al. (2010), missing data 'is where valid values of one or more variables are not available for analysis' (p. 42). Bryman and Bell (2015) stated that missing data occurs when participants fail to respond to a question, either by accident or because they do not wish to reply.

According to Ang (2014), missing data occurs more often when the data collection process engages large quantities of data. It can be painful, particularly when the data collected do not include a significant number of cases. Thus, in such situations, it might be suitable to attempt to replace the missing values with the mean score of the rest of the observations for that variable instead of cancelling the cases.

Chapter 7 will compare the total number of distributed questionnaires with the usable ones. It will then outline how SPSS functions of descriptive statistics was used to check missing data. Finally, the result will be discussed.

### **6.15.3 Outlier detection**

An outlier is 'an observation that is substantially different from the other observations (i.e., has an extreme value) on one or more characteristics (variable). At issue is its representativeness of the population' (Hair et al., 2010, p. 36).

Peng et al. (2016) argued that it is vital to be aware of the presence of outliers in a dataset. Outliers have been found to significantly affect the covariate pattern; hence, their presence might misguide the interpretation of the statistical analysis. Dhhan, Rana and Midi (2015) stated that outliers may occur for numerous reasons, such as incorrect measurements, a phenomenon that emerges in the tail division of some distribution functions.

Angiulli and Fassetti (2016) illustrated that outlier detection is a data analysis task whose objective is to recognise most surprising observations in an unlabelled dataset. Hair et al. (2010) argued that according to number of variables (characteristic)



considered, outliers can be recognised from univariate methods, bioivariate methods or multivariate methods. The authors clarified that multivariate methods:

are best suited for examining complete variates, such as the independent variables in regression or the variables in factor analysis. Threshold levels of the  $D^2/df$  measure should be conservative (.005 or .001) resulting in values of 2.5 (small samples) versus 3 or 4 large samples (Hair et al., 2010, p. 67).

Chapter 8 will demonstrate how, on the box plots analysis in SPSS software (version 23), to detect the outliers, the number of identified outliers, and justification for retaining the outliers.

#### **6.15.4 Normality tests**

Hair et al. (2010) defined normality as the ‘degree to which the distribution of the sample data corresponds to the normal distribution’ (p. 36). The assumption of normality is a condition for several inferential statistical techniques (Coakes, 2013). Tolmie, Muijs and McAteer (2011) stated that normal distribution has a number of identified properties, which should be implemented anywhere that the distribution itself is applicable:

- 1) Individual cases cluster around the mean, with more extreme values much less common.
- 2) The distribution is symmetrical around the mean (i.e. the mean marks the boundary between the upper and lower 50 per cent of cases, and the distribution of the upper 50 per cent exactly mirrors the of the lower 50 per cent ).
- 3) The position of the distribution on the actual scale of measurement being used, along with its shape, is determined by the value of the mean and the standard deviation. The area of the curve account of 100 per cent of cases, with known percentages falling into different regions, reflecting the clustering of cases around the mean. Only 4 per cent of the cases have extreme values in the tails of the distribution (i.e., more than - 3 or + 3 standard deviations of the mean) (p. 23).

Hair et al. (2010) argued that the researcher must always examine the normality for the entire metric variables integrated in the analysis.

Assessing the severity of non-normality relies on two dimensions: ‘1) the shape of offending distribution, and 2) the sample size’ (Hair et al., 2010, p. 71). According to

Coakes (2013) there are several ways to explore normality assumption graphically, such as histogram, stem and leaf plot, box plot, normal probability plot and detrended normal plot.

Coakes (2013) clarified that skewness and kurtosis are among the available statistics to test normality. Both refer to the shape of the distribution, and are used with interval- and ratio-level data.

According to Hair et al. (2010):

kurtosis refers to the 'peakedness' or 'flatness' of distribution compared with the normal distribution. Distributions that are taller or more peaked than normal distribution are termed leptokurtic, whereas a distribution that is flatter is termed platykurtic. While skewness is used to describe the balance of the distribution; that is it unbalanced and shifted to one side (right or left) or is it centered and symmetrical with about the same shape on both sides? If the distribution is unbalanced, it is skewed? A positive skew denotes a distribution shifted to the left, whereas a negative skewness reflects a shift the right (p. 71).

Chapter 7 will discuss histograms of the residuals, and the shape of data distribution based on skewness and kurtosis values to check the normality.

### **6.15.5 Multicollinearity**

According to Coakes (2013), multicollinearity 'refers to high correlations among the independent variables' (p. 140). Field (2013) clarified that the variance inflation factor (VIF) and tolerance statistic are methods of detecting severity of multicollinearity. The author mentioned that the VIF is a diverse collinearity diagnostic that can be produced by SPSS. VIF indicates whether a predictor has a strong linear association with another predictor(s). The other method is the tolerance statistic, which is VIF reciprocal ( $1/VIF$ ).

There are some general guidelines related to VIF and the tolerance statistic: 'If the largest VIF is greater than ten there is a cause of concern' (Myers, 1990, cited in Field, 2013, p. 325), and 'tolerance below 0.1 indicates a serious problem' (Field, 2013, p. 325).

Coakes (2013) stated that most software has default values for multicollinearity and will not accept variables that are a problem. Chapter 7 will explain how VIF values

were used to ensure the absence of multicollinearity within independent variables. Moreover, tolerances' effect in one independent variable will be checked.

#### **6.15.6 Reliability of the survey instrument**

Reliability is defined as 'the degree to which measures are free from error and therefore yield consistent results. It reflects the amount of inconsistency or unsystemic fluctuation of individual responses on a measurement' (Ang, 2014, p. 176). Two procedures were used in terms of reliability of the research:

- 1) As will be seen in Chapter 7, the current thesis used Cronbach's alpha to measure the reliability of the instrument.
- 2) The reliability of the individual creativity components, work context and government regulation and incentives will be obtained by the Kaiser-Meyer-Olkin measure of sampling adequacy, as will be discussed in Chapter 7.

#### **6.15.7 Factor analysis**

Factor analysis is:

a technique—or more accurately, a set of techniques—that is used to establish the validity of scales; to demonstrate that the different items of a multi-item scale 'belong' together; but also that they are different from other scales (Dowson, 2017, p. 28).

The purpose of factor analysis is to discover patterns in the correlations among variables. These patterns are used to cluster the variables into groups, named factors. The factors can then be considered new composite variables (Vogt, 2007).

According to Dowson (2017), there are two kinds of factor analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Dowson (2017) defined EFA as an 'exploratory procedure that searches for the relationships among that variables (items), and assigns items to scales (factors) purely on the basis of those relationships' (p. 29). Ang (2014) stated that EFA assists to recognise the underlying associations between survey items.

CFA 'is a theoretically driven approach in which the number of factors and the associations of the factors with observed indicators are specified a priori' (South & Jarnecke, 2017, p. 113). CFA:

employs more developed techniques to confirm whether a particular assignment of items to scale consent with the associations between items with the associations that are recommended by the hypothesized structure, and in doing this it evaluate how well the data suit the model (Dowson, 2017, p. 29).

Ang (2014) clarified that CFA specifies the items that must form a variable. Further, CFA removes the possibility of creating absurd factors, as is possible with EFA, as items are comprised according to previous theoretical anticipations. Harrington (2009) mentioned that CFA is associated with three other well-known data analysis techniques: EFA, principle component analysis and SEM.

There are some similarities and differences between EFA and CFA (Brown, 2006). As Harrington (2009) demonstrated, they are based on the common factor model and, therefore, are both mathematically linked procedures. EFA can be used as an exploratory first phase during the establishment of a measure, while CFA can be used as a second stage to assess whether the structure recognised in the EFA function is a new sample.

In this thesis, EFA is regarded proper to assess the factor structures of the data, the loadings of items and to classify groups of factors. This is followed by CFA to assess the robustness of the factor solution.

#### **6.15.8 Structural equation modelling**

Several authors have defined SEM differently. For example, Hair et al. (2010) defined SEM as 'a family of statistical models that seek to explain the relationships among multiple variables' (p. 635). While according to South & Jarnecke (2017) SEM is 'a family of related statistical techniques that lend themselves to understanding the complex relationships among variables that differ among individuals in the population' (p. 113). Finally, Reisinger & Mavondo (2007, p. 42) defined the concept as follows; 'it simultaneously estimates and tests a series of hypothesized inter-related

dependency relationships between a set of latent (unobserved) constructs, each measured by one or more manifest (observed) variables' (p. 42).

Hair et al. (2010, p. 635) affirmed that SEM is identified by several names: covariance structure analysis, latent variable analysis, and occasionally it is referred to by the name of the software package that facilitated it.

Reisinger and Mavondo (2007) clarified that the following assumptions should be met to conduct SEM analysis:

- 1) Linearity of all relationships
  - 2) Homoscedasticity
  - 3) Multivariate normality
  - 4) No kurtosis and no skewness
  - 5) No extreme cases such as outliers
  - 6) Data measured on interval or ratio scale
  - 7) Sample size 100–400 (or a minimum ratio of five times more cases than the number of independent variables)
  - 8) Discriminant validity of measures
  - 9) Random sampling (except for longitudinal studies)
  - 10) Independence of error (not correlated to each other and to latent factors)
- (p. 42).

Hair, Babin and Krey (2017) mentioned that to conduct SEM, a step-by-step process must be followed:

- 1) Model specification to be compatible with a theory
- 2) Model identification to recognise suitable data
- 3) Model estimation to offer parameter estimates and  $\Sigma^{\wedge}$ . as a barometer for the theory
- 4) Model evaluation to evaluate fit and other facets of validity
- 5) Model respecification to compare theoretical explanations. Moreover, to check requirements of causality, explore post-hoc findings or develop model fit (only to the degree to which changes are small and do not alter meaning; non-minor modifications lead to a shift towards improvement or post-hoc findings rather than theory testing); cross-validation employing new data when probable
- 6) Model reporting to draw suitable conclusions.

SEM includes both measurement and structural models (Reisinger & Mavondo, 2007; South & Jarnecke, 2017). Measurement model is 'specification of measurement

theory that shows how constructs are operationalized by sets of measured variables. The specification is similar to EFA by factor analysis, but differs in the number of factors and items loading on each factor must be known and specified before the analysis can be conducted' (Hair et al., 2010, p. 690). While structural model is a 'set of one or more dependence relationships linking the hypothesized model's constructs (i.e., the structural theory). The structural model is most useful in representing the interrelationships of the variables between constructs' (Hair et al., 2010, p. 692).

In this thesis, SEM has been used for several reasons: First, as shown in Chapter 5, the proposed conceptual framework aims to investigate the mediating effects of organisational motivation to innovate on relationships between multiple independent and dependent variables. Thus, SEM is a statistical technique that can help understand these complex relationships.

Second, according to Hair et al. (2010), to use SEM, the theory is significant and the model must not be developed lacking any of the core theory. As mentioned previously this study is based on the componential model of creativity and innovation in organisations which is widely accepted in creativity field (Bender, 2014). Therefore, the ideas for this study were adopted from concepts outlined in the literature review.

Third, big sample sizes that range between 100–400 (or a minimum ratio of five times more cases than the number of independent variables) is one of the assumptions to conduct SEM (Reisinger & Mavondo, 2007). The data for this study have been collected from a large sample: 668 participants.

Finally, to use SEM, an assumption is that data should be measured by interval or ratio scale (Reisinger & Mavondo, 2007, p. 42). Section 6.10 confirmed that the instrument used a four-point scale to rate and assess the items of different factors and creativity.

### **6.15.9 Bootstrap method**

Bootstrap is one of resampling methods employed to estimate differences across a wide spectrum of statistical contexts (Antal & Tillé, 2011). Wang et al. (2017, p. 46) stated that BM can imitate probability distribution of a system through resampling

under the state of unknown probability distribution with limited samples. Further, BM can be used separately to estimate interval and uncertainty. The authors demonstrated that the goal of BM is to obtain large samples by resampling with replacement.

BM was applied in this study (specified at 2,000 times, using a 90 per cent interval) to resample the data related to multiple groups to investigate the mediating effects of organisational motivation to innovate in the relationship between different factors and employees' creativity.

#### **6.15.10 The software used**

Harrington (2009) mentioned that good software packages are available for conducting CFA, SEM and other analyses.

IBM's SPSS is an advanced piece of software employed by social scientists and concerned professionals for statistical analysis (Coakes, 2013). A main advantage of the software is its compatibility with Windows. Further, it provides numerous products that focus on analytical processes, such as planning to gather, enter and analyse data.

According to Dowson (2017), it is not possible to conduct CFA in SPSS, as CFA is a specific kind of SEM technique. Hence, it is more suitable to use specialist software. The Analysis of Movement Structures (AMOS) is a software package that can conduct SEM and CFA.

AMOS was developed within the Microsoft Windows interface; it permits the user to select from various modes of model specification (Byrne, 2010). Further, AMOS can be used for SEM for single and multiple group analysis (Byrne, 2010). Reisinger and Mavondo (2007) demonstrated that AMOS has become well known as an easier means of indicating structural models due to its user-friendly graphical interface and its ability to perform via the Windows clipboard.

SPSS (version 23) was used for coding, editing, checking missing data, assumptions of normality, linearity, multicollinearity, outliers and factor analysis. All details will be provided in Chapter 7. AMOS (version 23) was used for CFA (measurement model) and SEM.

## **6.16 Summary**

This chapter has examined two main topics: the mixed method approach used in this thesis and quantitative methodology, which has been used in the main cycle of the research design. The qualitative methodology was discussed in Chapter 3.

First, mixed method was adopted to enable a comprehensive and in-depth understanding of the different factors that influence employees' creativity and whether organisational motivation to innovate mediates the relationships between the different factors and employees' creative outcomes. Thus, philosophical assumption, approaches to research, research paradigm, the justifications of the research design and sampling strategy were explained.

Second, quantitative methodology, population and sample, instruments used, questionnaire structure, and a description of the data collection procedures of data collection were also highlighted. Finally, ethical considerations and the process of data analysis were presented.

Chapter 7 presents data analysis and the results of the quantitative cycle of the research design



## **Chapter 7: Analysis and Results of Quantitative Cycle**

### **7.1 Introduction**

Chapter 6 presented and discussed the research methodology used for the quantitative cycle of this research.

This chapter analyses the data gathered for this study. As clarified previously, this research employed mixed method, qualitative and quantitative methodologies, to address the research question. The analysis of the findings of both methodologies were presented separately.

Thus, in this chapter, the results of the statistical analysis are presented. First the analyses are explained, characteristics of the participants will be outlined, missing data will be detected, outliers will be checked, distribution shape of the questionnaire will be examined, and reliability of the survey instrument will be tested. EFA was conducted as a pre-test to examine whether the gathered data support the 15 latent variables of the conceptual model.

Moreover, CFA will be used to validate the measurement model. After this, hypotheses will be refined and SEM will be used to test the hypotheses and relationships in the conceptual framework. After examining the direct path relationships within the core model, the mediating effects of organisational motivation to innovate will be tested and the alternative model will be presented.

One optional open-ended question was added to the distributed questionnaire: ‘What would you change in order to improve creativity (idea generation)?’. Therefore, the findings of this question will be discussed. Finally, there will be a chapter summary.

### **7.2 Characteristics of participants in cycle2 / quantitative survey questionnaire**

Of the 930 questionnaires, 668 (71.8 per cent) were completed and returned.

Table 7.1 provides the following demographic characteristics of participants: gender, nationality, age, profession category, level of education, years of experience and area of work.

Employees working for three Dubai government organisations participated in the cycle. Almost half the participants (49.1 per cent) work for Organisation 1, 32.8 per cent work for Organisation 2 and 18.1 per cent work for Organisation 3. The sample consisted of 58.4 per cent males and 41.6 per cent females. Of the total respondent group, 10.9 per cent were aged between 18 and 25 years, 38.6 per cent were aged between 26 and 35 years, 34.9 per cent were between 36 and 45 years, 12.4 per cent were between 46 and 55 years and 3 per cent were 56 or older. There were similar percentages of participants in terms of nationality; 57.2 per cent were UAE citizens, while 42.8 per cent were not.

Most participants (60.5 per cent) were support staff, while 31.4 per cent held supervisory positions. The remainder of participants (8.1 per cent) consisted of leadership roles. Regarding education, almost half the participants (46.3 per cent) had bachelor's degrees. The second-largest group (30.4 per cent) held a secondary school degree and 18.0 per cent held a postgraduate degree. Only 5.2 per cent had achieved other types of degrees. Years of experience ranged from less than one year to over 20 years, of which 2.4 per cent of participants had less than one year; 45.8 per cent had 1–10 years, 30.4 per cent had 11–20 years and 21.3 per cent had over 20 years' experience. Regarding area of work, the highest response rate based on functional area of the department were administration employees (36.4 per cent), 27.5 per cent worked in other areas, 19.2 per cent worked in customer service, 13.6 per cent worked in human resources and 3.3 per cent were from finance/accounting.

As shown in Table 7.1, the demographic characteristics are shown in terms of both frequency and percentage.

**Table 7.1: Demographic statistics**

<b>Variable</b>	<b>Levels</b>	<b>Frequency</b>	<b>Percentage</b>
Organisational code	1	328	49.1
	2	219	32.8
	3	121	18.1
Gender	Male	390	58.4
	Female	278	41.6
Nationality (UAE citizen)	Yes	382	57.2
	No	286	42.8
Age	18–25	73	10.9
	26–35	258	38.6
	36–45	233	34.9
	46–55	83	12.4
	56 or older	20	3
Profession category	Leadership category	54	8.1
	Supervisory category	210	31.4
	Support category	404	60.5
Level of education	Postgraduate degree	120	18.0
	Bachelor's degree	309	46.3
	Secondary school	203	30.4
Years of experience	Other	35	5.2
	Less than 1 year	16	2.4
	1–10 years	306	45.8
	11– 20 years	203	30.4
Area of work	Over 20 years	142	21.3
	Administration	243	36.4
	Human resources	91	13.6
	Customer service	128	19.2
	Finance/accounting	22	3.3
	Other	184	27.5

Further, the descriptive statistics of the constructs are presented in Table 7.2.

**Table 7.2: Descriptive statistics**

	<b>Minimum Statistic</b>	<b>Maximum Statistic</b>	<b>Mean Statistic</b>	<b>Std. Deviation Statistic</b>
Task-intrinsic motivation	1.00	4.00	3.2295	.64135
Process clarity	1.00	4.00	3.4760	.51893
Self-efficacy	1.00	4.00	3.1592	.62656
Freedom	1.00	4.00	2.8253	.71357
Challenging work	1.00	4.00	3.1509	.66164
Managerial encouragement	1.00	4.00	3.1847	.74603
Work group support	1.00	4.00	3.2722	.63201
Organisational encouragement	1.00	4.00	2.8355	.74811
Lack of organisational impediments	1.00	4.00	2.6023	.75953
Sufficient resources	1.00	4.00	2.9079	.77206
Realistic workload pressure	1.00	4.00	2.7081	.71684
Government regulations and incentives	1.00	4.00	3.4551	.67417
Creativity	1.00	4.00	2.8597	.64476

Note: N = 668

Measurement scale: 1 = Never, 2 = Sometimes, 3 = Often, 4 = Always.

### 7.3 The analysis

The analysis comprises the following aspects, including searching for missing data and outliers, and examining the distribution shape of the data.

#### 7.3.1 Missing data analysis

As mentioned in Chapter 6, Hair et al. (2010, p. 42) stated that missing data is when valid values of one or more variables are not available for analysis. For the purpose of collecting data for this study, 930 questionnaires were distributed; 262 questionnaires were incomplete. Most of these respondents filled only few questions of the questionnaire and did not respond to the rest of the questionnaire. As more than 20 per cent of critical data were missing, they were excluded from the analysis.

The remaining 668 followed the instructions provided in the participant information sheet. This sheet clarified that participants needed to print and complete the hard copy

of the questionnaire. They were requested to submit the completed questionnaires to a drop box. Overall, 668 questionnaires were completed and no missing data were found.

### 7.3.2 Outlier detection

In terms of retaining or deleting outliers, Hair et al. (2010) recommended to retain them unless there is definite proof that they are aberrant or not representative of any observation in the broader population. This research detected outliers for each construct. The box plot analysis in SPSS (version 23) was used and 18 outliers were identified. It was rational because those outliers represented participants' points of views. Following Hair et al.'s (2010) recommendation, the decision was made to retain the outliers. Table 7.3 presents more details about the outliers.

**Table 7.3: The detection of outliers**

<b>Constructs</b>	<b>No. of Outliers</b>	<b>No. of Case of Outlier</b>
Task-intrinsic motivation	2	155, 407
Creative self-efficacy	1	666
Work group supports	7	70, 96, 129, 155, 252, 457, 506
Challenging work	2	111, 114
Government regulation and incentives	6	433, 58, 273, 96, 398, 135

### 7.3.3 Normality tests

To check the normality, histograms of the residuals were used. The histograms in were bell shaped with a mean close to zero. Thus, the error variable appears to be normally distributed. It was quite clear that all variables were closely normally distributed. Thus, this assumption has been satisfied.

According to Hair et al., (1998, p. 73), the normal range of skewness and kurtosis is  $\pm 2.58$ . As shown in Table 7.4, all variables were within the normal range of skewness and kurtosis recommended by Hair et al. (1998).

**Table 7.4: The shape of data distribution based on skewness and kurtosis values**

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Task-intrinsic motivation	-.632	.095	-.372	.189
Process clarity	-.809	.095	-.232	.189
Self-efficacy	-.410	.095	-.437	.189
Freedom	-.133	.095	-.602	.189
Challenging work	-.616	.095	-.199	.189
Managerial encouragement	-.754	.095	-.298	.189
Work group support	-.806	.095	.425	.189
Organisational encouragement	-.262	.095	-.653	.189
Lack of organisational impediments	.021	.095	-.556	.189
Sufficient resources	-.215	.095	-.753	.189
Realistic workload pressure	.135	.095	-.613	.189
Government regulations and incentives	-1.149	.095	.541	.189
Creativity	-.150	.095	-.653	.189

Note: N = 668.

### 7.3.4 Multicollinearity

The results presented in Table 7.5 showed that the largest VIF value was 2.498. Thus, all values were less than 10, which suggests an absence of multicollinearity within independent variables (task-intrinsic motivation = 1.217, process clarity = 1.527, creative self-efficacy = 1.521, freedom = 1.691, challenging work = 1.756, managerial encouragement = 1.843, work group support = 1.807, organisational encouragement = 1.807, lack of organisational impediments = 2.498, sufficient resources = 1.791, realistic workload pressure = 1.512 and government regulation and incentives = 1.329).

Moreover, tolerances' effect in one independent variable was above .01. As can be observed, the tolerance value of task-intrinsic motivation was 0.822, process clarity was 0.655, creative self-efficacy was 0.657, freedom was 0.591, challenging work was 0.569, managerial encouragement was 0.543, work group support was 0.553, organisational encouragement was 0.553, lack of organisational impediments was

0.773, sufficient resources was 0.558, realistic workload pressure was 0.661 and government regulation and incentives was 0.753).

Therefore, the variables selected did not reveal problems of multicollinearity (see Table 7.5).

**Table 7.5: Regression (testing for multicollinearity)**

Model	Unstandardised		Standardised		Sig.	Collinearity	
	Coefficients		Coefficients			Statistics	
	B	Std. Error	Beta	T		Tolerance	VIF
(Constant)	.340	.159		2.136	.033		
Task-intrinsic motivation	.004	.032	.004	.131	.896	.822	1.217
Process clarity	-.062	.044	-.050	-1.414	.158	.655	1.527
Creative self-efficacy	.064	.036	.062	1.759	.079	.657	1.521
Freedom	.033	.034	.036	.969	.333	.591	1.691
Challenging work	.119	.037	.122	3.199	.001	.569	1.756
Managerial encouragement	.047	.034	.054	1.387	.166	.543	1.843
Work group supports	.054	.039	.053	1.367	.172	.553	1.807
Organisational encouragement	.235	.039	.273	5.999	.000	.400	2.498
Lack of organisational impediments	.028	.028	.032	.993	.321	.773	1.294
Sufficient resources	.119	.032	.142	3.695	.000	.558	1.791
Realistic workload pressure	.097	.032	.107	3.039	.002	.661	1.512
Government regulation and incentives	.111	.032	.116	3.509	.000	.753	1.329

a. Dependent variable: Creativity.

### 7.3.5 Reliability of measurement items/scales

Reliability ‘is the extent to which a variable or set of variables is consistent in what it is intended to measure’ (Hair et al. 2010, p. 93). Vogt (2007) argued that low

reliability of the measurement could lead to misassociation between variables. Sekran and Bouge (2016) mentioned that Cronbach's alpha is a reliability coefficient that shows how well the items in a set are potentially associated to another.

According to Vogt (2007), Cronbach's alpha ranges from zero, when the measures are entirely inconsistent, to 1.0 when the items correlate with one another perfectly. Hair et al. (2010) stated that an alpha of 0.60 to 0.70 is higher is regularly regarded as the lowest limit of acceptability.

Table 7.6 shows that the Cronbach's alpha score of the survey questionnaire was more than 0.60 and most of the values are greater than 0.7, suggesting that the survey questionnaire was highly reliable as recommended by Hair et al. (2010).

**Table 7.6: Reliability levels of the constructs extracted from 88 survey items**

<b>Constructs</b>	<b>No. of Items</b>	<b>Cronbach's Alpha</b>
Task-intrinsic motivation	4	.658
Process clarity	5	.844
Creative self-efficacy	3	.710
Sufficient resources	6	.925
Organisational encouragement	15	.952
Managerial encouragement	11	.956
Work group supports	8	.921
Freedom	4	.704
Challenging work	5	.841
Realistic workload pressure	5	.780
Lack of organisational impediments	12	.866
Government regulation and incentives	4	.887
Creativity	6	.865

### **7.3.6 Factor analysis**

This thesis used both EFA and CFA as follows:

#### ***EFA***

According to Ang (2014), when developing a scale, researchers regularly use EFA before conducting CFA. Thus, EFA was first conducted using SPSS (version 23).



As shown in Chapter 5, the conceptual model hypothesised that the survey should consist of 13 uncorrelated constructs (latent variables). Thus, EFA was conducted on the survey items to test this hypothesis.

According to Hair et al. (2010), the size of factor loading is a vital concern. The authors clarified that a 'good rule of thumb is that standardised loading estimates should be .50 or higher, and ideally .7 or higher' (p. 709).

Appendix 17 presents the item loadings on each factor based on the EFA. The results indicate that 15 factors were in fact underlying the survey, which again confirms that these factors were internally consistent. The loading of the following four items had lower loading levels (below 0.5) than other items (TI1, LOI9, FR2 and RWP4). Thus, they were removed from subsequent analysis.

After removing the four cross-loading variables, the EFA was re-run with the remaining 84 items.

#### ***Sampling adequacy: KMO, Bartlett's test and anti-image correlation matrix***

According to Coakes (2013) 'the anti-image correlation matrix is used to assess the sampling adequacy of each variable. Variables with a measure of sampling accuracy that falls below the acceptable level of .50 should be excluded from the analysis' (p. 129). Hair et al. (2010) shared the same view, and stated that the overall MSA value must always be above 0.50 before conducting factor analysis. The inspection of the anti-image correlation revealed that all measures of sampling adequacy were above the acceptable level of 0.05:

While Bartlett's test of sphericity and the Kaiser-Meyer-Olkin measure of Sampling Adequacy are both tests that can be used to determine the factorability of the matrix as whole. If Bartlett's test of sphericity is large and significant, and the Kaiser-Meyer-Olkin measure is greater than .6 the factorability is assumed (Coakes, 2013, p. 129).

Table 7.7 presents the results of survey sample adequacy. KMO was used as a measure in this study, and at 0.957, it was well above the recommended value (0.6). Bartlett's test of sphericity is highly significant ( $df = 4005$ ) = 40536.474,  $p = 0.000$ ), showing there was a considerable common variance between the survey items.

**Table 7.7: KMO and Bartlett's test of the survey**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</b>		<b>.957</b>
Bartlett's test of sphericity	Approx. Chi-Square	40536.474
	Df	4005
	Sig.	.000

According to the diagnostic of the earlier tests, it was confirmed that the collected data passed the assumptions; hence, it is possible to proceed to factor analysis. After EFA was conducted, CFA was undertaken as shown below:

#### **7.4 Confirmatory factor analysis**

CFA was run to examine whether the model fit the data (Harrington, 2009). Hair et al. (2010) argued that to use SEM, the theory is significant, and the model must not be lacking core theory. As mentioned in Chapter 6, the conceptual framework was based on the componential model of creativity and innovation in organisations, which is widely accepted in the creativity field (Bender, 2014). Figure 7.1 presents the measurement model: CFA.

As discussed in the EFA section, 13 latent variables were discussed. However, based on the conceptual framework outlined in Chapter 5, two constructs—organisational encouragement and lack of organisational impediments—were merged as organisational motivation to innovate; the justifications for merging these constructs were outlined in Chapter 5. Moreover, in terms of intrinsic task motivation, the factor loading was too low; therefore, after a careful consideration, IT1 was removed during EFA while IT2 was removed during CFA because standardised regression weight (factor loading) in CFA was below 0.50. Thus, the construct was retained with two items. According to Iacobucci (2010), to have a strong measurement, a minimum of three indicators should be per factor; having only two variables load on a variable probably indicates there will be a bias in the parameter estimate. Bagozzi and Yi (2012) stated that too few indicators per factor might produce unstable solutions and result in the failure of programs to converge, particularly in complicated models with many latent variables and paths. Therefore, several researchers advocate using at least

three indicators per factor; thus, the decision was made to remove intrinsic task motivation from the model.

The measurement model CFA contained 12 latent variable constructs; 64 items were extracted from the questionnaire and used to answer following research question; What is the impact of ‘organisational motivation to innovate’ on the relationship between three antecedent, a) the individual creativity components, b) determinants of work context and c) government regulation and incentives, on the outcome, ‘creativity among employees’ in Dubai government organisations?.

### **7.5 Evaluating the measurement model validity**

Validity is defined as ‘the approximate truth of an inference’ (Shadish Cook & Campbell, 2002, p. 34). Hair et al. (2010) argued that measurement model validity relies on:

- 1) Developing acceptable degrees of goodness-of-fit for the measurement model
- 2) Discovering particular proof of construct validity.

As discussed in Chapter 7, CFA was used to assess the measurement model (Hair et al., 2010). AMOS (version 23) was used to examine the measurement model.

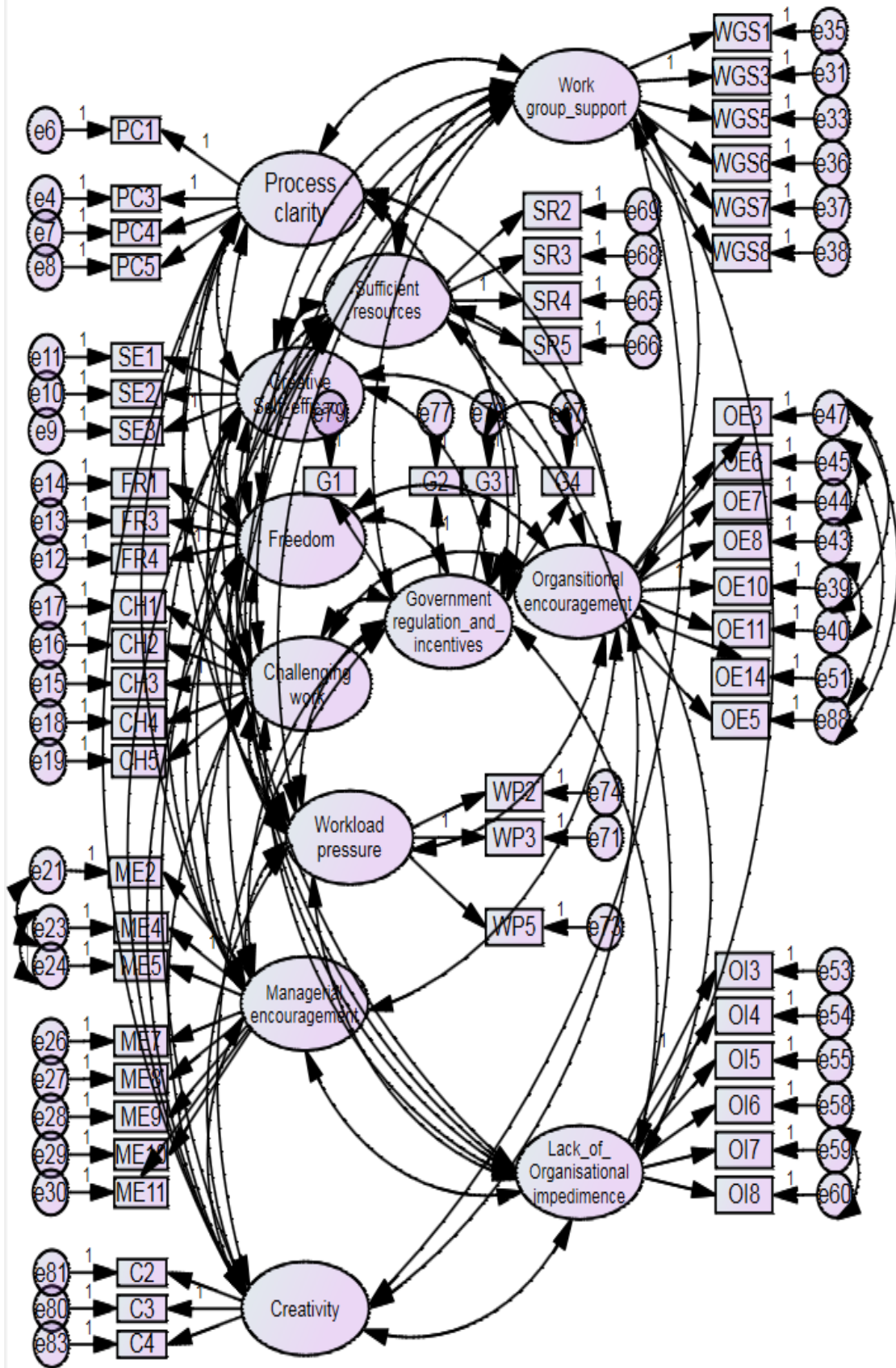


Figure 7.1: Measurement model

### **7.5.1 Goodness-of-fit**

Goodness-of-fit (GOF) indicates how well the specified model reproduces the observed covariance matrix among the indicator items (i.e., the similarity of the observed and estimated covariance matrices) (Hair et al., 2010, p. 664).

There are numerous diverse GOF indices; most can be relied on to describe the lack of fit of the model to the data. Every kind of fit index offers various information regarding the model fit or non-fit (Harrington, 2009).

As demonstrated in Table 7.8, Hair et al. (2010, p 672) presented some guidelines for using fit indices in diverse situations. The guidelines are based principally on situation study that considers sample size, model complexity and degrees of error in model specification to assess how precisely different fit indices performs.

**Table 7.8: Characteristics of different fit indices demonstrating GOF across different model situations**

No. of Stat. Vars(m)	N < 250			N > 250		
	M ≤ 12	12 < m < 30	M ≥ 30	M < 12	12 < m < 30	M ≥ 30
$\chi^2$	Insignificant p-values expected	Significant p-values even with good fit	Significant p-value expected	Insignificant p-values even with good fit	Significant p-values expected	Significant p-values expected
CFI or TLI	.97 or better	.97 or better	Above .92	.95 or better	Above .92	Above .90
RNI	May not diagnose misspecification	.95 or better	Above .92	.95 or better, not used with n > 1,000	Above .92, not used with n > 1,000	Above .90, not used with n > 1,000
SRMR	Biased upwards, use another index	.08 or less (with CFI of .95 or higher)	Less than .09 (with CFI above .92)	Biased upwards, use another index	.08 or less (with CFI above .92)	.08 or less (with CFI above .92)
RMSEA	Values < .08 with CFI = .97 or higher)	Values < .08 with CFI = .92 or higher	Values < .08 with CFI above .92)	Values < .07 with CFI of .92 or higher	Values < .07 with CFI of .92 or higher	Values < .07 with CFI of .90 or higher

Note: m = number of observed variables, N applies to number of observations per group when applying CFA to multiple groups at the same time.  
Source: Hair et al. (2010, p. 672).

Following Hair et al.'s (2010) above recommendations, the following fit indices were used in this study: chi-square statistic, the root mean square residual (RMR), root mean square error of approximation (RMSEA), goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), incremental fit index (IFI), normed fit index (NFI), comparative fit index (CFI) and Tucker-Lewis index (TLI). These indices are discussed next.

Chi-square ( $\chi^2$ ) 'is a statistical measure of difference used to compare the observed and the estimated covariance matrices' (Hair et al., 2010, p. 630). According to Brown (2006, cited in Harrington, 2009, p. 51), chi-square ( $\chi^2$ ) tests fit exactly in the population. Although  $\chi^2$  is usually reported in CFA study, additional fit indices are regularly used, depending on the assessment of model fit (Brown, 2006). Findings (see Table 7.9) indicate that the chi-square result was significant, which is undesirable ( $\chi^2 = 2486.439$ ,  $p = .000$ ). According to Bagozzi and Yi (2012), it is a common result that the  $\chi^2$  test is significant because the  $\chi^2$  is sensitive to sample size. Therefore, it is hard to fulfil satisfactory model fits as the sample size increases. Hence, researchers have introduced several indices of practical fit. Thus, to have better estimate of model fit, other indices were evaluated.

In terms of RMR, according to Brown (2006, cited in Harrington, 2009) RMR 'is the average discrepancy between the covariances in the input matrix and the covariance predicted by the model' (p. 51). Hair et al. (2010, p. 668) mentioned that the lower RMR values represent better fit and higher values represent worst fit. A rule of thumb is that an SRMR over .1 suggests a problem with fit.

As shown in Table 7.9, the value of RMR was 0.027, below .05, which is good.

One GOF index is RMSEA which 'tests the extent to which the model fits reasonably well in the population; it is sensitive to model complexity, but unlike the model chi-square, it is relatively insensitive to sample size. For acceptable model fit RMSEA should be close to .60 or less' (Brown, 2006, cited in Harrington, 2009, p. 51).

As demonstrated in Table 7.9, RMSEA was 0.032, which is considered an acceptable fit.

Hair et al. (2010, p. 667) clarified that the GFI was an early attempt to produce a fit statistic that was less sensitive to sample size. The possible range of GFI values is 0–1, with higher values indicating better fit. In the past, values of greater than 0.90 typically were considered good. As demonstrated in Table 7.9, the value of GFI was 0.885; it should be above 0.90. However, it fell below this benchmark because GFI is sensitive to large sample size (Bagozzi & Yi, 2012).

AGFI attempts to consider differing degrees of model complexity. It does so by adjusting AGFI by a ratio of the degrees of freedom used in a model to the total degrees of freedom available (Hair et al., 2010, p. 669). As shown in Table 7.9, AGFI was 0.871, because AGFI is sensitive to large sample size (Bagozzi & Yi, 2012).

Hair et al. (2010, p. 668) clarified that NFI is one of the original incremental fit indices. It is a ratio of the difference in the  $\chi^2$  value for the fitted model and a null model divided by the  $\chi^2$  value for the null model. It ranges between 0 and 1, and a model with perfect fit would produce an NFI of 1. As shown in Table 7.9, the value of NFI was 0.902, which is close to 1, indicating a good fit, with acceptable level.

CFI evaluates the fit of a user-specified solution in relation to a more restricted, nested baseline model. Typically, this baseline model is a null or independence model in which the covariances among all input indicators are fixed to zero. CFI has a range of possible values of 0.00–1.0, with values closer to 1.0 implying good model fit (Brown, 2006, p. 84). As illustrated in Table 7.9, CFI was 0.957, which indicated a good fit, with acceptable level.

Finally, TLI includes a penalty function for adding freely estimated parameters that do not markedly improve the fit of the model. TLI is interpreted in fashion similar to the CFA in that values approaching 1.0 are interpreted in accord with good mode fit (Brown, 2006, p. 85–86). As shown in Table 7.9, TLI was 0.953, which indicated a good fit, with acceptable level.



**Table 7.9: GOF statistics for measurement model (N = 688)**

Fit Statistic	Measurement Model
$\chi^2$	2486.439 ( $p = .000$ )
Df	1465
RMR	.027
$\chi^2 / df$	1.697
RMSEA	.032
GFI	.885
NFI	.902
IFI	.957
TLI	.953
CFI	.957

*Note.*  $\chi^2$  = chi-square; df = degree of freedom; RMR = root mean square residual; RMSEA = root mean square error of approximation; GFI = goodness-of-fit index; IFI = incremental fit index; NFI = normed fit index; TLI = Tucker-Lewis index and CFI = comparative fit index.

Overall, despite a significant  $\chi^2$  and a mediocre GFI value, both of which are sensitive to large sample sizes, all other indices suggested a satisfactory model fit.

In addition, to assess the potential threat of common method bias a Harman one-factor test was used (Podsakoff et al., 2003). The results of this one-factor model showed poor model fit as reflected in the indices: ( $\chi^2 = 12529.485$ ,  $p = 0.000$ ,  $df = 1482$ ,  $RMR = .072$ ,  $RMSEA = .106$ ,  $GFI = .481$ ,  $NFI = .498$ ,  $IFI = .529$ ,  $TLI = .510$  and  $CFI = .528$ ) compared to the predicted 13-factor model fit which has satisfactory fit as discussed above.

### **7.5.2 Construct validity**

Construct validity is defined as ‘the validity of inferences about the higher order constructs that represent sampling particulars’ (Shadish, Cook & Campbell, 2002, p. 38). Bagozzi and Yi (2012) stated that construct validity methods were developed to consider the extent of convergence for a set of measures of a hypothesised construct and of discrimination between those measures and measures of a various construct. According to Shadish, Cook and Campbell (2002), the two problems of construct validity are related to understanding constructs and evaluating them. As construct validity represents coherence between conceptual and operational definitions, the

construct validity focused on two levels: theoretical and operational. To enhance the construct validity, questionnaire items discussed in the measurement section identified the best set of items to represent each of the theoretical constructs in a scale.

Woodwell (2014) identified two key approaches to evaluate construct validity:

- 1) Content validity includes analysing the process of conceptualisation to determine if it has been conducted properly.
- 2) Criterion-related validity is assessed by examining the final result—the measurement of a concept—to check how such a measurement associates with other empirical data to which the researcher would anticipate the measurement would correspond.

Also, according to Guerra et al. (2013, p. 1275–1278), construct validity includes:

- 1) Factorial convergent, which refers to the extent to which a set of items is considered adequate to explain any differences among participants
- 2) Discriminant validity, which expresses the extent to which the factors are different from each other
- 3) Internal consistency indicators, when the threshold for Cronbach's alpha values found in the literature is usually equal or superior to 0.70.

Hair et al. (2010) argued that construct validity is assessed for CFA by the convergent and discriminant validity. Thus, Hair et al.'s (2010) measurement model was assessed with convergent validity and discriminant validity.

### ***Convergent validity***

To verify the convergent validity, factor loadings, composite reliability (CR) and average variance extracted (AVE) values were considered.

### ***Factor scores extraction (deleting items)***

EFA was conducted to extract each of the 13 factors' scores, considering the items' loading. Fourteen constructs with 88 items were tested. At each run, only the group of items contributing to a given factor was included in the extraction. The four cross-loading items of EFA were not included in CFA.

According to Hair et al. (2010), cross-loading ‘is a variable that has two more factor loadings exceeding the threshold value deemed necessary for inclusion in the factor interpretation’ (p. 92). As indicated in Appendix 17, each group of items load significantly to only one factor. Most items loaded significantly on their intended factors, but some—organisational encouragement (OE), managerial encouragement (ME), lack of organisational impediments (LOI), sufficient resources (SR) and work group support (WGS)—showed generally high covariation.

Also, using standardised estimates of SEM, a high convergent validity shows high loadings on a factor; a standardised loading estimate must meet or exceed 0.5 (Hair et al., 2010). As depicted in Table 7.10, the standard factor loadings displayed by the figure are all higher than 0.6, demonstrating that the indicators (survey items) representing their corresponding constructs are consistent and support the results.

Also, the SEM standardised estimates of the dependence of creativity on the predictors are shown in the same table. Each of the 12 items depicted by a rectangle loads to only one factor. Moreover, the table presents the final items included in the analysis and their factor loadings are presented in Appendix 16.

**Table 7.10: Standardised CFA factor loading**

<b>Items</b>	<b>Direction</b>	<b>Constructs</b>	<b>Estimate</b>
1. Process clarity			
PC1	<---	Process clarity	.658
PC3	<---	Process clarity	.728
PC4	<---	Process clarity	.802
PC5	<---	Process clarity	.751
2. Creative self-efficacy			
SE1	<---	Creative self-efficacy	.737
SE2	<---	Creative self-efficacy	.774
SE3	<---	Creative self-efficacy	.792
3. Freedom			
FR1	<---	Freedom	.758
FR3	<---	Freedom	.806
FR4	<---	Freedom	.631
4. Challenging work			

<b>Items</b>	<b>Direction</b>	<b>Constructs</b>	<b>Estimate</b>
CH1	<---	Challenging work	.687
CH2	<---	Challenging work	.756
CH3	<---	Challenging work	.757
CH4	<---	Challenging work	.609
CH5	<---	Challenging work	.778
5. Managerial encouragement			
ME2	<---	Managerial encouragement	.774
ME4	<---	Managerial encouragement	.823
ME5	<---	Managerial encouragement	.827
ME7	<---	Managerial encouragement	.858
ME8	<---	Managerial encouragement	.885
ME9	<---	Managerial encouragement	.853
ME10	<---	Managerial encouragement	.876
ME11	<---	Managerial encouragement	.802
6. Work group support			
WGS1	<---	Work group support	.745
WGS3	<---	Work group support	.731
WGS5	<---	Work group support	.827
WGS6	<---	Work group support	.825
WGS7	<---	Work group support	.792
WGS8	<---	Work group support	.770
7. Organisational encouragement			
OE3	<---	Organisational encouragement	.785
OE5	<---	Organisational encouragement	.676
OE6	<---	Organisational encouragement	.725
OE7	<---	Organisational encouragement	.804
OE8	<---	Organisational encouragement	.655
OE10	<---	Organisational encouragement	.802
OE11	<---	Organisational encouragement	.792
OE14	<---	Organisational encouragement	.831
8. Lack of organisational impediments			
LOI3	<---	Lack of organisational impediments	.686
LOI4	<---	Lack of organisational impediments	.777

Items	Direction	Constructs	Estimate
LOI5	<---	Lack of organisational impediments	.807
LOI6	<---	Lack of organisational impediments	.759
LOI7	<---	Lack of organisational impediments	.742
LOI8	<---	Lack of organisational impediments	.593
9. Sufficient resources			
SR2	<---	Sufficient resources	.811
SR3	<---	Sufficient resources	.812
SR4	<---	Sufficient resources	.841
SR5	<---	Sufficient resources	.861
10. Realistic workload pressure			
RWP2	<---	Realistic workload pressure	.735
RWP3	<---	Realistic workload pressure	.691
RWP5	<---	Realistic workload pressure	.648
11. Government regulation and incentives			
G1	<---	Government regulation and incentives	.875
G2	<---	Government regulation and incentives	.854
G3	<---	Government regulation and incentives	.840
G4	<---	Government regulation and incentives	.671
12. Creativity			
C2	<---	Creativity	.834
C3	<---	Creativity	.824
C4	<---	Creativity	.890

### *Discriminant validity*

Discriminant validity shows the degree to which the factors are diverse from one another. It is anticipated that the square root of the AVE of every pair of variables is upper to the correlation among them (Guerra et al., 2013). Hair et al. (2010) argued

that high discriminant validity is a confirmation of the unique construct and captures some phenomena that other measures do not.

### *AVE*

AVE 'is a summary measure of convergence among a set of items representing a latent construct. It is the average percentage of variation explained (variance extracted) among the items of a construct' (Hair et al., 2010, p. 688).

Guerra et al. (2013) argued that the accepting values of AVE should be above 0.5. Hair et al. (2010) shared the same view and asserted that AVE of 0.5 or above proposes adequate convergence. An AVE of below 0.5 shows that, on average, more error remains in the items than variance explained by the latent factor structure forced on the measure.

The results in Table 7.11 depict that the AVE value of the constructs exceeded the required value, with the exception realistic workload pressure (0.479), which was slightly below the cut-off of the recommended 0.05. However, this was considered variable as the construct met the requirement of discriminant validity. As shown above, the Cronbach's alpha was 0.780 (acceptable) and as will be observed in next section, the discriminant validity was distinct from other constructs. Thus, realistic workload pressure was retained in the model.

### *CR*

CR is 'a simple sum score reliability, as is well known, is based on the unit-weighted sum (linear combination) that is always associated with the same component weights' (Raykov, Gabler & Dimitrov, 2016, p. 384). It is used to evaluate the internal reliability of the measurement properties of the scale (Boduszek et al., 2013). Values of CR higher than 0.6 are deemed acceptable (Bagozzi & Yi, 1988).

As depicted in Table 7.11, all CR values are greater than 0.70, which is acceptable and matches the requirement for an adequate convergent validity and internal consistency. Table 7.11 also shows that the all constructs were distinct from one another. This is because the square root of the AVE values of each construct was higher than the other correlation values among the constructs.

Thus, construct validity assesses how good the match is between conceptual and empirical models. EFA and CFA were used to ensure that items loaded on the intended factors. As discussed earlier, Cronbach's alpha was used to assess internal consistency of multiple items and the values were superior to 0.70. Convergent validity was investigated through validity factor loadings, CR and AVE. Finally, discriminant validity was confirmed and all constructs were distinct from one another.

It was concluded that in terms of evaluating the measurement model validity, both conditions recommended by Hair et al. (2010)—developing acceptable degrees of GOF for the measurement model and discovering proof of construct validity—were met.

**Table 7.11: Convergent and discriminant validity of the measurement model**

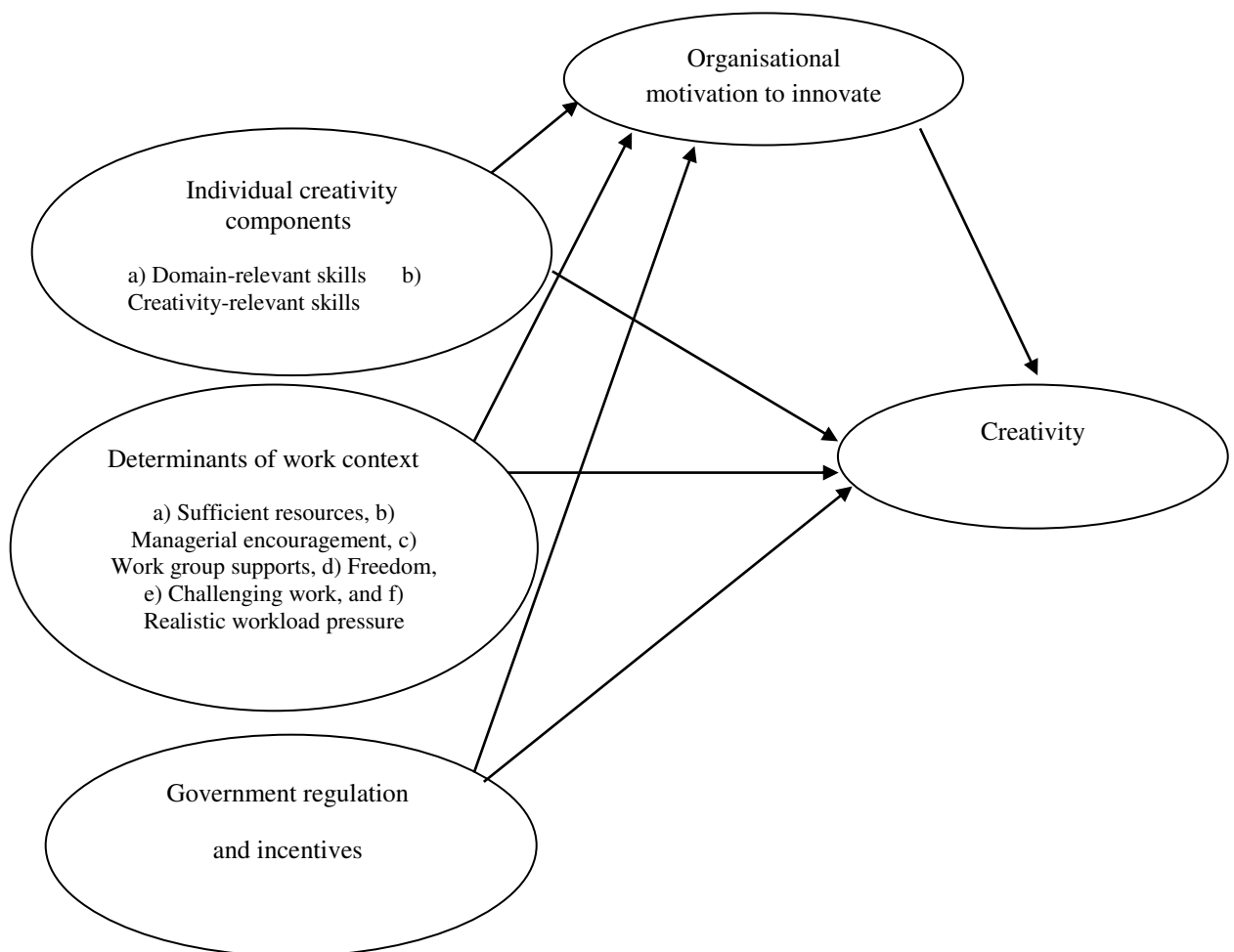
	MaxR															
	CR	AVE	MSV	(H)	GR	PC	CSE	FR	CW	ME	WGS	OE	LOI	SR	RWP	CR
GR	0.886	0.663	0.196	0.902	0.814											
PC	0.825	0.543	0.297	0.934	0.389	0.737										
CSE	0.812	0.590	0.297	0.949	0.297	0.545	0.768									
FR	0.778	0.541	0.370	0.957	0.237	0.350	0.464	0.735								
CW	0.842	0.519	0.310	0.966	0.317	0.467	0.528	0.549	0.720							
ME	0.950	0.702	0.424	0.980	0.320	0.292	0.194	0.459	0.412	0.838						
WGS	0.904	0.612	0.359	0.983	0.403	0.391	0.255	0.395	0.480	0.590	0.783					
OE	0.916	0.579	0.527	0.986	0.443	0.309	0.373	0.608	0.557	0.651	0.599	0.761				
LOI	0.872	0.534	0.221	0.987	0.217	0.211	0.261	0.386	0.269	0.291	0.229	0.402	0.731			
SR	0.900	0.691	0.426	0.989	0.304	0.334	0.290	0.506	0.403	0.494	0.511	0.653	0.306	0.832		
RWP	0.734	0.479	0.329	0.989	0.298	0.285	0.373	0.544	0.272	0.376	0.366	0.510	0.470	0.574	0.692	
CR	0.886	0.722	0.527	0.990	0.410	0.298	0.404	0.526	0.552	0.507	0.515	0.726	0.351	0.598	0.544	0.850

*Note:* GR = government regulation and incentives, TI = task-intrinsic motivation, PC = process clarity, CSE = creative self-efficacy, FR= freedom, CW= challenging work, ME = managerial encouragement, WGS = work group support, OE = organisational encouragement, LOI = lack of organisational impediments, SR = sufficient resources, RWP = realistic workload pressure, CR = creativity.



## 7.6 Refined hypotheses

As outlined in Chapter 5, six propositions were formed to address the research question. The conceptual model and propositions were developed based on existing literature and the findings of Cycle 1 the research design. As a next step, the initial conceptual model was tested for measurement purification, leading to the refining of the hypotheses. As examining the mediating effects includes first testing the direct relationships, the modified model and the hypotheses included only the indirect relationships. Figure 7.2 presents the modified conceptual model.



**Figure 7.2: The modified conceptual model**

Thus, the following hypotheses were tested using SEM.

H1: Organisational motivation to innovate mediates the relationship between individual creativity components—a) domain-relevant skills and b) creativity-relevant skills—and employees' creativity.

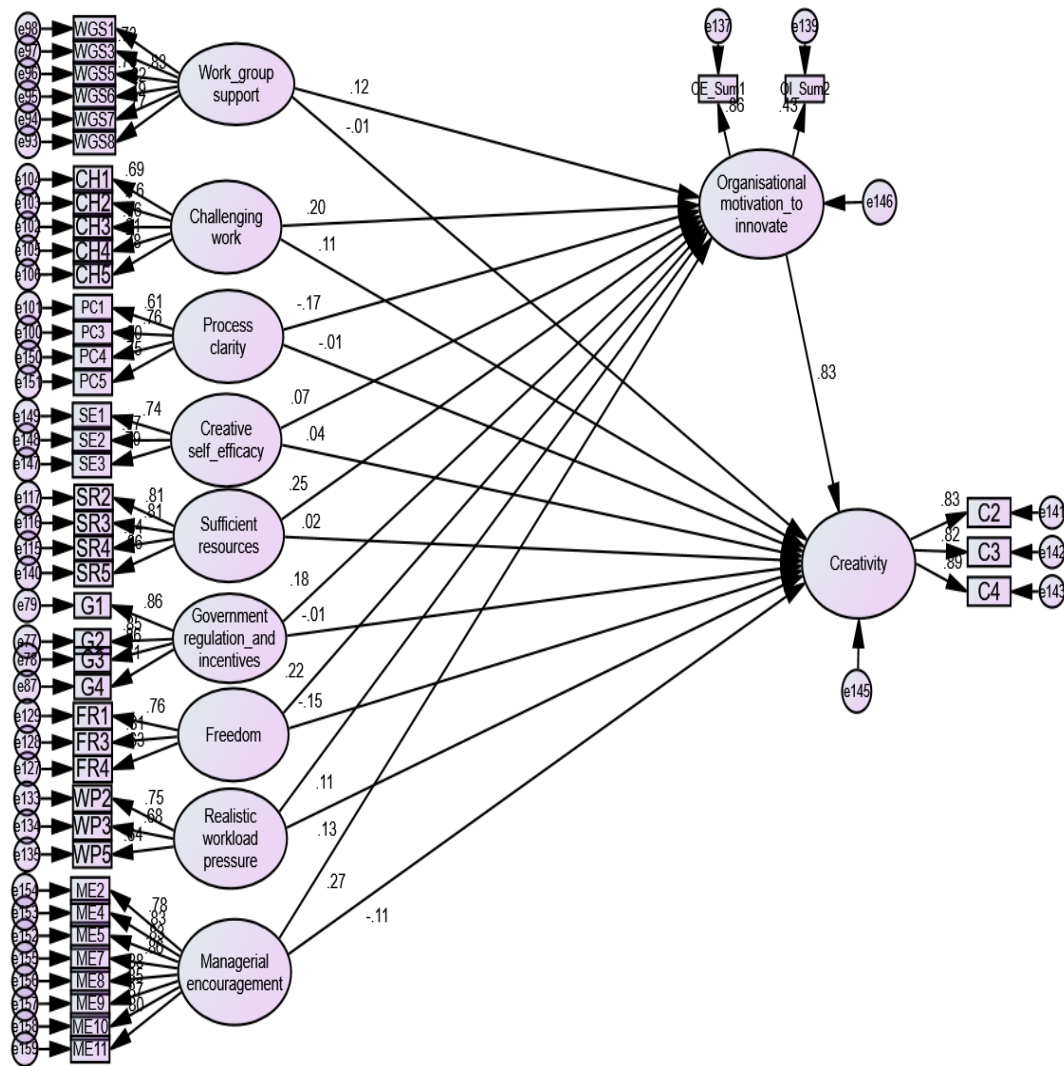
H2: Organisational motivation to innovate mediates the relationship between work context determinants— a) sufficient resources, b) managerial encouragement, c) work group supports, d) freedom, e) challenging work and f) realistic workload pressure—and employees' creativity.

H3: Organisational motivation to innovate mediates the relationship between government regulation and incentives, and employees' creativity.

## **7.7 Hypotheses testing using SEM**

As discussed in Chapter 6, SEM was used to assess the validity of the proposed hypotheses using AMOS software. Justifications for using SEM were discussed in Chapter 6.

Figure 7.3 presents the hypothesised structural modelling.



**Figure 7.3: Hypothesised structural modelling**

Lattin, Carroll and Green (2003) demonstrated that the same GOF indices on CFA can be used to evaluate SEM. Thus, as shown in Table 7.12, SEM provides a variety of indices to test for the appropriateness of the SEM model.

**Table 7.12: GOF statistics for SEM model**

Fit Statistic	SEM Model
$\chi^2$	1634.966 ( $p = .000$ )
Df	889
$\chi^2/df$	1.839
RMR	.026
RMSEA	.035
GFI	.901
NFI	.916
IFI	.960
TLI	.955
CFI	.960

*Note.*  $\chi^2$  = chi-square; df = degree of freedom; RMR = root mean square residual; RMSEA = root mean square error of approximation; GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index; IFI = incremental fit index; NFI = normed fit index; TLI = Tucker-Lewis index and CFI = comparative fit index.

As noticed in measurement model, findings showed that the chi-square test result was significant, which is undesirable 1634.966 ( $p = .000$ ). Thus, to obtain a better estimate of model fit, other indices were evaluated. The value of RMR was 0.026. RMSEA was 0.035, which was below the acceptable level. Moreover, GFI was 0.901, while NFI was 0.916, which is close to 1. Finally, CFI (0.960), IFI (0.960) and TLI (0.955) were above 0.90, which indicates a good fit with acceptable levels. AGFI was 0.885 because as mentioned earlier, it is sensitive to large sample size (Bagozzi & Yi, 2012).

Overall, the evidence of model fit indices showed satisfactory fit.

## 7.8 Hypotheses testing results

Hypotheses tests ‘present a simplified model of the real world that can either be confirmed or rejected (thus the term “confirmatory analysis”) through analysis and summarisation of data relevant to the underlying theory’ (Westland, 2015, p. 145).

As outlined in Section 7.7, three hypotheses were formed to address the research question. Table 7.14 illustrated that organisational motivation to innovate was tested to determine if it mediated the relationship between different factors (individual creativity components, determinants of work context and government regulation and

incentives) and employees' creativity. Since examining the mediating effects requires testing the direct relationships, Table 7.13 illustrated the direct relationships between different factors and employees' creativity. Thus, SEM was used to test the proposed hypotheses.

Iacobucci (2010) stated that a well-known use of SEM is the investigation of the process by which an independent variable  $X$  is believed to affect a dependent variable  $Y$ , directly, as  $X \rightarrow Y$ , or indirectly via a mediator,  $X \rightarrow M \rightarrow Y$ . Bagozzi and Yi (2012) shared the view and mentioned that an advantage of SEM is the provision of easier tests of mediation effects.

BM in SEM was applied in the present study, specified at 2,000 times, using a 95 per cent interval, to test intervals to estimate direct, indirect and total effects (Preacher & Hayes, 2008). According to Zhao, Lynch and Chen (2010):

the bootstrap test actually relies on the 95 per cent confidence intervals from the empirical distribution of  $a*b$  estimates. The lower bound of the 95 per cent confidence interval is at the 2.5 per cent point on this cumulative distribution, and the upper bound of the 95 per cent confidence interval is at the 97.5 per cent point. Furthermore, the authors clarified that if the confidence interval does not include 0, the indirect effect  $a*b$  is significant and mediation is established. If the confidence interval includes 0,  $a*b$  is not significant and mediation hypothesis is rejected (p. 202).

H1 stated that organisational motivation to innovate mediates the relationship between individual creativity components—a) domain-relevant skills and b) creativity-relevant skills—and employee creativity. The results depicted in Tables 7.13 and 7.14 are in partial support of H1:

(a) Testing the direct effects between process clarity that reflects domain-relevant skills and employee creativity showed a non-significant relationship ( $\beta = -0.007$ ,  $p = 0.935$ ), while the result of mediating effects showed positive indirect effects of process clarity, which reflects domain-relevant skills via organisational motivation to innovate on employee creativity ( $b = -0.277$ ,  $p = 0.001$ ); the 95 per cent bootstrap CIs lower (-0.582) and upper (-0.052) the indirect effects did not contain zero. Therefore, it was concluded that organisational motivation to innovate fully mediated the relationships between process clarity, which refracted domain-relevant skills and employees' creativity. Thus, H1a was supported.

(b) Testing the direct effects between creative self-efficacy, which reflects creativity-relevant skills and employee creativity, showed a non-significant relationship ( $\beta = .036, p = 0.550$ ). In terms of the mediating effects, the result showed no indirect effects of creative self-efficacy, which reflected creativity-relevant skills via organisational motivation to innovate on creativity ( $b = 0.076, p = 0.115$ ); the 95 per cent bootstrap CIs lower (-0.032) and upper (0.284) the indirect effects contained zero. Therefore, it was concluded that there was no mediation effect of organisational motivation to innovate on the relationships between creative self-efficacy, which reflects creativity-relevant skills, and employees' creativity. Thus, H1b was not supported.

H2 predicted that organisational motivation to innovate mediates the relationship between determinants of work context—a) sufficient resources, b) managerial encouragement, c) work group supports, d) freedom, e) challenging work and f) realistic workload pressure—and employees' creativity.

Confirming this hypothesis, five full mediation effects were supported:

(a) Testing the direct effects between sufficient resources and employees' creativity showed a non-significant relationship ( $\beta = 0.018, p = 0.860$ ). In terms of the mediating effects, the result showed positive indirect effects of SR via organisational motivation to innovate on creativity ( $b = 0.217, p = 0.010$ ); the 95 per cent bootstrap CIs lower (0.088) and upper (0.746) the indirect effects did not contain zero. Therefore, it was concluded that organisational motivation to innovate fully mediated the relationships between SR and employees' creativity. Thus, H2a was supported.

(b) Testing the direct effects between managerial encouragement and employees' creativity showed a non-significant relationship ( $\beta = -0.108, p = 0.308$ ). In terms of the mediating effects, the result showed positive indirect effects of managerial encouragement via organisational motivation to innovate on creativity ( $b = 0.237, p = 0.001$ ); the 95 per cent bootstrap CIs lower (0.095) and upper (0.924) the indirect effects did not contain zero. Therefore, it was concluded that organisational motivation to innovate fully mediated the relationships between managerial encouragement and employees' creativity. Thus, H2b was supported.

(c) Testing the direct effects between work group supports and employees' creativity showed a non-significant relationship ( $\beta = -0.012$ ,  $p = 0.849$ ). In terms of the mediating effects, the result showed positive indirect effects of work group supports via organisational motivation to innovate on employees' creativity ( $b = 0.124$ ,  $p = 0.024$ ); the 95 per cent bootstrap CIs lower (0.011) and upper (0.392.) the indirect effects did not contain zero. Therefore, it was concluded that organisational motivation to innovate fully mediated the relationships between work group supports and employees' creativity. Thus, H2c was supported.

(d) Testing the direct effects between freedom and employees' creativity showed a non-significant relationship ( $\beta = -0.148$ ,  $p = 0.141$ ). In terms of the mediating effects, the result showed positive indirect effects of freedom via organisational motivation to innovate on creativity ( $b = 0.263$ ,  $p = 0.001$ ); the 95 per cent bootstrap CIs lower (0.065) and upper (0.797) the indirect effects did not contain zero. Therefore, it was concluded that organisational motivation to innovate fully mediated the relationships between freedom and employees' creativity. Thus, H2d was supported.

(e) Testing the direct effects between challenging work and employees' creativity showed a non-significant relationship ( $\beta = .108$ ,  $p = 0.226$ ). In terms of the mediating effects, the result showed positive indirect effects of challenging work via organisational motivation to innovate on creativity ( $b = 191$ ,  $p = 0.001$ ); the 95 per cent bootstrap CIs lower (0.051) and upper (0.743) the indirect effects did not contain zero. Therefore, it was concluded that organisational motivation to innovate fully mediated the relationships between challenging work and employees' creativity. Thus, H2e was supported.

(f) Testing the direct effects between realistic workload pressure work and employees' creativity showed a non-significant relationship ( $\beta = 0.126$ ,  $p = 0.069$ ). In terms of the mediating effects, the result showed no indirect effects of realistic workload pressure via organisational motivation to innovate on creativity ( $b = 113$ ,  $p = 0.095$ ); the 95 per cent bootstrap CIs lower (- 0.012) and upper (0.531), the indirect effects contained zero. Therefore, it was concluded that there was no mediation effect of organisational motivation to innovate on the relationships between realistic workload pressure and employees' creativity. Thus, H2f was not supported.

H3 proposed that organisational motivation to innovate mediates the relationship between government regulation and incentives and employees' creativity. Testing the direct effects between government regulation and incentive and employee creativity showed a non-significant relationship ( $\beta = -0.006$ ,  $p = 0.937$ ). In terms of the mediating effects, the result showed positive indirect effects of government regulation and incentives via organisational motivation to innovate on creativity ( $b = 177$ ,  $p = 0.001$ ); the 95 per cent bootstrap CIs lower (0.055) and upper (0.628) the indirect effects did not contain zero. Therefore, it was concluded that organisational motivation to innovate fully mediated the relationships between government regulation and incentives and employees' creativity. Thus, H3 was supported.



**Table 7.13: AMOS output for regression weights—the direct effect**

<b>Direct Relationships</b>		<b>β</b>	<b>B</b>	<b>S.E.</b>	<b>C.R.</b>	<b>p</b>	
Process clarity	→	Creativity	-.007	-.013	.154	-.082	.935
Creative self-efficacy	→	Creativity	.036	.045	.076	.591	.555
Sufficient resources	→	Creativity	.018	.019	.108	.177	.860
Managerial encouragement	→	Creativity	-.108	-.115	.113	-1.019	.308
Work group support	→	Creativity	-.012	-.016	.083	-.191	.849
Freedom	→	Creativity	-.148	-.212	.144	-1.472	.141
Challenging work	→	Creativity	.108	.127	.105	1.209	.226
Realistic workload pressure	→	Creativity	.126	.165	.091	1.816	.069
Organisational motivation to innovate	→	Creativity	.825	1.013	.437	2.319	.020
Government regulation and incentives	→	Creativity	-.006	-.007	.090	-.079	.937

β – standardised estimate; b – unstandardised estimate.

**Table 7.14: AMOS output for regression weights—the indirect effect**

H	Indirect Effects					b	P(SIG)	S.E	C.R	Bootstrapping Percentile 95% CI		Result
										Lower	Upper	
H1a	PC	→	OM	→	CR	-0.277	0.001(sig)	.069	-3.961	-0.582	-0.052	Full mediation
H1b	CSE	→	OM	→	CR	0.076	0.115(non-sig)	.049	1.535	-0.032	0.284	No mediation
H2a	SR	→	OM	→	CR	0.217	0.001(sig)	.039	5.536	0.088 (non sig)	0.746	Full mediation
H2b	ME	→	OM	→	CR	0.237	0.001(sig)	.036	6.550	0.095(non sig)	0.924	Full mediation
H2c	WGS	→	OM	→	CR	0.124	0.024(sig)	.045	2.707	0.111(non sig)	0.392	Full mediation
H2d	FR	→	OM	→	CR	0.263	0.001(sig)	.062	4.199	0.065 (non sig)	0.797	Full mediation
H2e	CW	→	OM	→	CR	0.191	0.001(sig)	.047	4.010	0.051(non sig)	0.743	Full mediation
H2f	RWP	→	OM	→	CR	0.113	0.095(non sig)	.055	2.050	0.012(non sig)-	0.537	No mediation
H3	GR	→	OM	→	CR	0.177	0.001(sig)	.034	5.202	0.065 (non sig)	0.628	Full mediation

*Note:* GR = government regulation and incentives, TI = task-intrinsic motivation, PC = process clarity, CSE = creative self-efficacy, FR = freedom, CW= challenging work, ME = managerial encouragement, WGS = work group support, OE = organisational encouragement, LOI = lack of organisational impediment, SR = sufficient resources, RWP = realistic workload pressure, OM = organisational motivation to innovate and CR = creativity.

## **7.9 Alternative model (rival)**

Reisinger and Mavondo (2007) mentioned that alternative models might present interesting alternative interpretations of the analysed data. Thompson (2000) recommended testing several rival models so that more robust proof supporting the accurate specification of a model could be adduced.

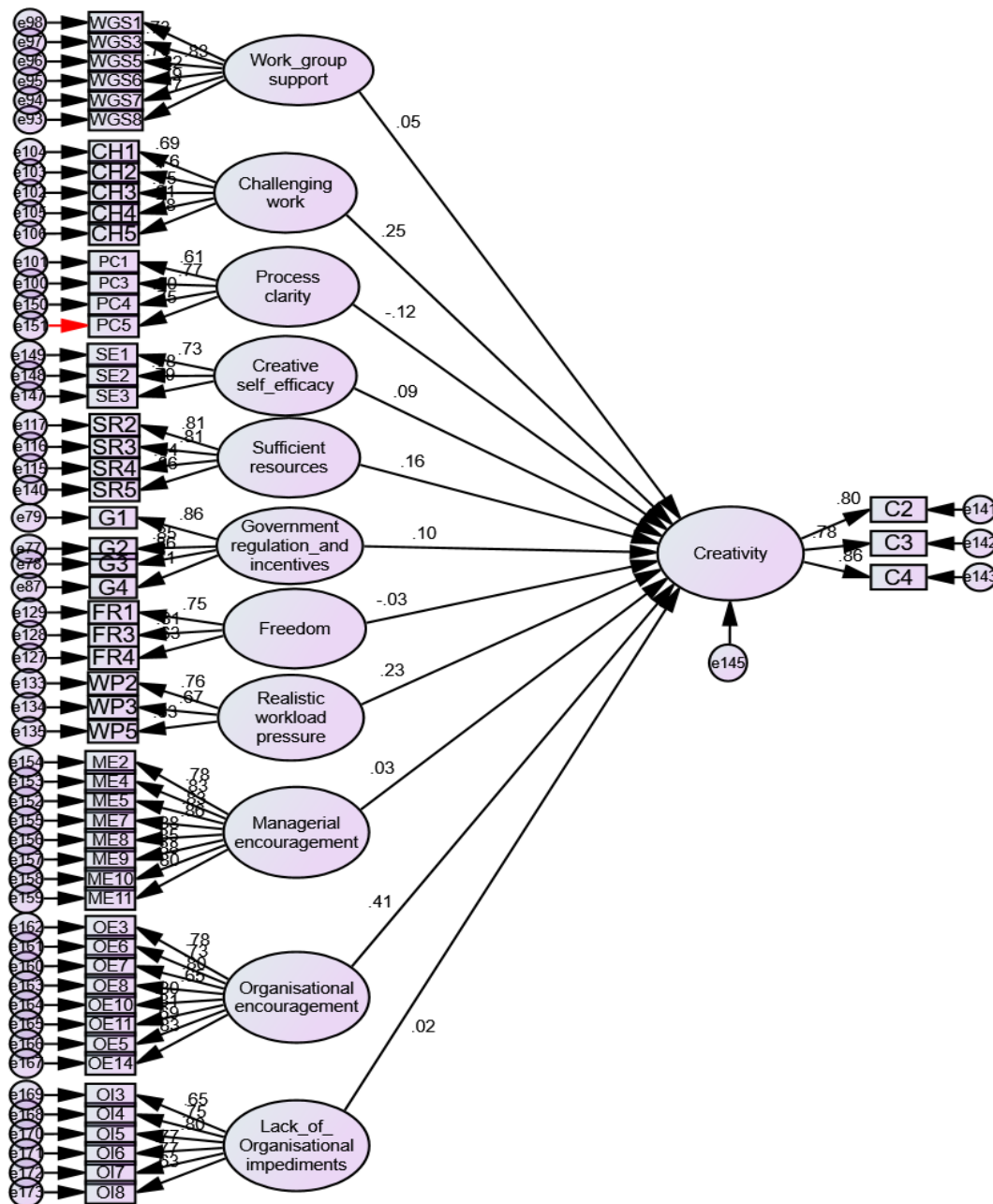
Hair et al. (2010) stated that the equivalent models present a second viewpoint on a developing group of comparative models. For every suggested structural equation model, at least one alternative model emerges with an identical number of parameters, but with distinct associations that fit at least in addition to the suggested model. As a general rule, in a complicated model, alternative models are likely to emerge. As discussed, the proposed model fits the data well. However, it is possible that other models might exist that provide an equally good or better fit to the data.

Therefore, as clarified in Chapter 5, the componential theory of creativity and innovation in organisations presented by Amabile (1988) includes three key components of individual (or small team) creativity—domain-relevant skills, creativity-relevant skills and task motivation. The work context factors include organisational motivation to innovate, resources and management. Further, Amabile et al. (1996) considered organisational motivation to innovate, which includes organisational encouragement and lack of organisational impediments as part of the organisational work environment. However, few studies have examined the impact of organisational motivation to innovate as a summated variable (ElMelegy et al., 2016). Moreover, there was lack of studies that had empirically tested this mediating link of organisational motivation to innovate.

Thus, the alternative model was tested to investigate direct effects of individual creativity components and work context on employees' creativity, in addition to the following the work context; organisational encouragement, managerial encouragement, work group support, freedom, sufficient resources, challenging work, realistic workload pressure and lack of organisational impediments. Government regulation and incentives was included to overcome the limitation of the theory.

This means that organisational motivation to innovate was not treated as a summated variable. Instead, both organisational encouragement and lack of organisational impediments were considered two separate variables.

As a result, all variables only have direct paths to creativity. Figure 7.4 presents the alternative model and Table 7.15 shows GOF statistics for alternative models.



**Figure 7.4: The tested alternative model**

Table 7.15 and Figure 7.4 outline the results for the alternative model. When compared to the results of the model fit of the predicted model (see Table 7.12) the

GOF statistics of the alternative model shows unsatisfactory results as shown in Table 7.15. Therefore, it can be concluded that the results of the main predicted model provide strong support for the mediating role of organisational motivation to innovate (see Figure 7.3).

**Table 7.15: GOF statistics for the tested alternative model**

<b>Fit Statistic</b>	<b>SEM Model</b>
$\chi^2$	3371.836, p =.000
<i>Df</i>	1489
$\chi^2/df$	2.264
RMR	.138
RMSEA	.044
GFI	.855
NFI	.867
IFI	.921
TLI	.915
CFI	.921

*Note:*  $\chi^2$  = chi-square; *df* = degree of freedom; RMR = root mean square residual; RMSEA = root mean square error of approximation; GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index; IFI = incremental fit index; NFI = normed fit index; TLI = Tucker-Lewis index and CFI = comparative fit index.

Thus, three hypotheses (H1, H2 and H3) tested the influence of different factors (individual creativity components, work context factors and government regulation and incentives) on employees' creativity. The results are reported in Table 7.16.

**Table 7.16: Regression weights: The tested alternative model**

<b>H</b>	<b>Relationships</b>		<b>β</b>	<b>b</b>	<b>S.E.</b>	<b>C.R.</b>	<b>p</b>	
H1a	Process clarity	→	Creativity	-.115	-.194	.085	-2.279	.023
H1b	Creative self-efficacy	→	Creativity	.086	.094	.061	1.542	.123
H2a	Sufficient resources	→	Creativity	.160	.146	.048	3.027	.002
H2b	Managerial encouragement	→	Creativity	.030	.028	.044	.635	.525
H2c	Work group support	→	Creativity	.052	.057	.056	1.016	.310
H2d	Freedom	→	Creativity	-.030	-.037	.075	-.501	.617
H2e	Challenging work	→	Creativity	.249	.255	.059	4.291	***
H2f	Realistic workload pressure	→	Creativity	.225	.259	.071	3.661	***
H2g	Organisational encouragement	→	Creativity	.414	.387	.035	10.929	***
H2h	Lack of organisational impediments	→	Creativity	.021	.019	.031	.615	.539
H3	Government regulation and incentives	→	Creativity	.102	.103	.042	2.484	.013

β – standardised estimate; b – unstandardised estimate

## 7.10 The additional open-ended question

The optional additional open-ended question was added to the questionnaire: ‘What would you change in order to improve creativity (idea generation)?’. The aim of adding this question was to identify additional factors, not included in the questionnaire, that employees would like to change to develop creativity.

Based on the creativity literature, the researcher translated the answers from Arabic to English. To ensure the validity, the researcher worked with an institute to reverse the translation. Table 7.17 presents a summary of the main themes related to changes suggested by employees to improve creativity in Dubai government organisations in addition to new ones.

**Table 7.17: Summary of the main themes related to changes suggested by employees to improve creativity in Dubai government organisations**

	Theme	Subthemes	Source
1	Factors emerged in the questionnaire	Individual factors Work context climate Training programs	Amabile (1988, 1996) Amabile et al. (1996) Mansfield, Busse and Krepelka (1978), Smith (1998), Scott, Leritz and Mumford (2004b), Cheung, Roskams and Fisher (2006), Lau, Ng and Lee (2009), Yasin and Yunus (2014)
2	New factors (not included in the questionnaire)	Technology Recruitment Educational system Organisational structure	Egan (2005), Coveney (2008), Mbatha (2013), Oldham and Silva (2015) Tesluk et al. (1997), Martins, Martins and Terblanche (2004), Shalley and Gilson (2004), Jiang, Wang and Zhao (2012) Hennessey and Amabile (2010), Raudeliūnienė, Meidutė and Martinaitis (2011) Andriopoulos (2001), Alves et al. (2007), Razminia and Zeymaran

Theme	Subthemes	Source
		(2016)
	Job rotation	Shalley and Gilson (2004), Chang et al. (2014), Hodgson, Al Shehhi and Al-Marzouqi (2014)

The question was answered by 167 of the 668 participants. Some respondents recommended more than one suggestion to enhance creativity, which influenced the frequencies of responses. Also, some respondents have mentioned some suggestions related to individual and work context factors that existed in the questionnaire in addition to new ones.

### 7.10.1 Factors emerged in the distributed questionnaire

The respondents suggested three types of factors that have already emerged in the distributed questionnaire to improve creativity.

#### *Individual factors*

Six respondents believed that the availability of some individual factors may improve employees' creativity. These individual factors are:

Read, read, read, lot of ideas will be generated. Don't resist change; it may prove to bring positive outcomes (Respondent 275).

Attitude aspiration. Reading the project situation (Respondent 388).

Work hard (Respondent 665).

Staff voluntarily interested to participate (Respondent 487).

Total self-reliance and not complaining in front of against destructive ideas and the adoption of principles and values are deeply ingrained for creativity and innovation (Respondent 658).

I would like to change people's way of thinking, make them come out of their comfort zone, delegate that can change in their work place (Respondent 493).

As stated earlier, this thesis uses the componential model of creativity and innovation in organisations (Amabile, 1988), which includes three key components of individual



(or small team) creativity—domain-relevant skills, intrinsic task motivation and creativity-relevant skills. The recommended changes above are supported by the individual components of the theory.

Respondents 275 and 388 suggested reading, which reflects knowledge in the domain-relevant skills element. Attitudes changes suggested by Respondents 388, 487 and 658 related to attitude towards tasks, which is a dimension of intrinsic task motivation. Finally, a change in thinking style recommended by Respondent 493 and extra effort (Respondent 665) are part of creativity-relevant skills.

These views were shared by most studies that have examined the influence of change in individuals to improve employees' creativity, such as intrinsic motivation (e.g., Ganesan & Weitz, 1996; Shin & Zhou, 2003; Eisenberger & Rhoades, 2001), domain-relevant skills (e.g., Amabile, 1996; Eder & Sawyer, 2008) and creativity-relevant skills (e.g., Amabile, 1989; Baer & Kaufman, 2005; Davis, 1997).

Seven key decision-makers who participated in Cycle 1 agreed that individual factors influence both creativity and innovation. Based on their responses, the individual factors were categorised into three types—domain-relevant skills (two respondents), creativity-relevant skills (five respondents) and intrinsic task motivation (three respondents).

### **Work context factors**

The need for change in work context to enable staff to improve their creativity was suggested by 80 respondents.

To develop creativity, the respondents focused on the need for change in the following work context factors: freedom (one respondent), managerial encouragement (three respondents), work group support (three respondents), organisational encouragement (78 respondents) and sufficient resources (11 respondents).

The significance of these factors was supported by the literature. Several studies have supported the importance of positive work context factors on employees' creativity, such as sufficient resources (e.g., Ekvall & Ryhammar, 1999; Rasulzada & Dackert, 2009; Mbatha, 2013), organisational encouragement (e.g., Chang et al., 2014),

managerial encouragement (e.g., Redmond, Mumford & Teach, 1993; Ohly, Sonnetag & Pluntke, 2006; Hvidsten & Labraten, 2013; Kim & Yoon, 2015), work group support (e.g., Madjar, Oldham & Pratt, 2002; Zhou, 2003; Zhou & George, 2001; Farmer, Tierney & Kung-McIntyre, 2003), freedom (e.g., Zhou, 1998; Mathisen, 2011; Moultrie & Young, 2009) and challenging work (e.g., Hatcher, Ross & Collins, 1989).

Moreover, the above findings aligned with results of Cycle 1 of the research design. All participating key decision-makers in Dubai government organisations agreed that positive work conditions like freedom (two respondents), managerial encouragement (seven respondents), work group support (two respondents), organisational encouragement (all respondents) and sufficient resources (four respondents) all have a positive impact on employees' creativity.

### **7.10.2 New factors**

Four main changes were described to enhance creativity.

#### ***Training programs***

Training arose as a popular option; 39 respondents thought that conducting training in general (13 respondents) and creativity training specifically (20 respondents) was a technique to develop employees' creativity. Indeed, some specified a type of creativity training, such as brainstorming (10 respondents) and idea generation programs (one respondent).

Further, the respondents pointed out that training methods and requirements were needed to obtain the benefits of the training programs, such as training aids (four respondents) and a qualified trainer (one respondent). Shalley and Gilson (2004) demonstrated that training can guide employees to generate novel ideas as a standard part of their role rather than the exception. Indeed, according to Mansfield, Busse and Krepelka (1978), many studies indicated that training is a favoured approach for enhancing employees' creativity in the workplace. Solomon (1990) explored that creativity training has been used in organisations since the 1950s, when psychology studies provided evidence that creativity can be taught.

The findings were aligned with the prior studies, as the literature showed that creativity training is considered as tool to enhance employees' abilities at different countries such as the UK (e.g., Michell, 1987, Birdi, 2007; Birdi, 2005), US (e.g., Basadur, Wakabayashi & Graen, 1990; Williams, 2004; Basadur, Pringle & Kirkland, 2002; Sutton & Hargadon, 1996) and Germany (Geschka, 1996). While few studies were tested in Japan (e.g., Basadur, Wakabayashi & Takai, 1992) and Multi-National Companies (e.g., Birdi, Leach & Magadley, 2012).

### ***Technology***

Technology was highlighted by seven respondents as a required change to improve creativity. For instance:

The development of new systems in the technical field (Respondent 107).

Design specific attractive websites that help to generate ideas with some important books on how to generate ideas as well as those books in which the stories of creators are mentioned (Respondent 297).

Launch electronic software to submit ideas and creativities (Respondent 344).

Electronic transaction 100 per cent (Respondent 344).

Egan (2005) pointed out that among the reasons organisations are interested in creativity is that it assists the workplace in reacting to improving technology. Additionally, Dewett (2003) demonstrated that creativity literature suggests that information technology plays an integral role in the creative process within organisational settings.

Prior studies have investigated empirically the role of technology on employees' creativity. For instance, Mbatha's (2013) research, which was conducted in the South African public sector, showed that the internet had raised respondents' work-related productivity and creativity.

While others discussed the impact of technology on creativity theoretically and considered it a direction for future research, Oldham and Silva (2015) explored the influence of digital technology on employees' creative idea generation and implementation. The authors illustrated that computing technologies and devices have

the possibility to enhance the socioemotional and instrumental support to employees by enabling them to communicate with large numbers of people, inside and outside the workplace. Coveney (2008) believed that a limitation of the study was not exploring to what degree new technologies might assist the generation of new ideas within a work context. The author mentioned that this approach would certainly produce some exciting findings.

### ***Recruitment***

Four respondents suggested a positive link between adequate recruitment in the organisation and employees' creativity. Two spoke about recruitment in general:

Increase the number of nurses (Respondent 429).

Increase the number of employees (Respondent 562).

The other two respondents specified that recruited employees should be aware of creativity and work in this field:

Hiring representatives in the units who are have knowledge regarding creativity (Respondent 407).

Hiring employees to follow-up creativity at each organisation (Respondent 414).

Several scholars illustrated that issues related to creativity must be considered when recruiting new employees. For example, according Martins, Martins and Terblanche (2004), recruitment, selection, appointment and retention of workers is significant for supporting a culture of creativity and innovation. Shalley and Gilson (2004) argued that organisations can recruit selectively to hire personnel according to their expertise, intrinsic motivation and cognitive abilities required for creativity. Jiang, Wang and Zhao (2012) shared the same view and mentioned that expanded searches and accurate selection permit organisations to increase the applicant pool and select creative candidates, which leads to an overall increase in employee creativity. Based on Tesluk et al. (1997), recruitment of new workers should centre on hiring those with personal characters connected to creativity and success in a highly innovative work context.

Despite the recognition of the existence of a relationship between recruiting the right candidates and enhancing creativity, limited empirical studies have explicitly examined this issue. For instance, Jiang, Wang and Zhao (2012) discovered that HRM practices—hiring and selection, reward, job design and teamwork—were positively related to employee creativity.

### *Educational system*

Two respondents illustrated the importance of focusing on creativity at schools:

Give creativity and innovation the first priority in schools in the country  
(Respondent 145).

Establish teaching creativity as a subject in schools, colleges and universities  
(Respondent 262).

Craft (2003) clarified that by the end of the 1990s, creativity was prioritised in education and wider society. Saebø, McCammon and O'Farrell (2007) stated that creativity in education is a common theme globally, especially in developed countries. There are two reasons for this. First, in industrial countries, where technological and manufacturing work is being outsourced to other nations, there is a requirement for a new generation of employees who are creative and innovative. Second, there is a growing recognition of the value of creativity in improving students' abilities to study a wide range of subjects.

Hennessey and Amabile (2010) stated that while creative performance might not be perceived as an essential or universal objective in schools as it is in business, the progress of student creativity is central for economic, scientific, social, artistic and cultural development. Thus, it is necessary to come to a far deeper recognition of how teaching methods, teacher behaviour and social associations in schools affect the motivation and creativity of students.

Since creativity training is a main direction of creativity literature (Basadur, Graen & Green, 1982) the above suggested change was supported by previous studies. Raudeliūnienė, Meidutė and Martinaitis's (2011) showed that education was among the external factors that influence employees' creativity in the Lithuanian armed forces.

### *Organisational structure*

Two respondents called for the establishment of a unit in their organisation that focuses on all creative tasks to positively affect creativity:

Allocation of a special department of creativity and innovation in all government institutions (Respondent 444).

Establishing new sections related to creativity (Respondent 657).

Further, one respondent suggested the necessity of having a database related to creativity and information:

Establishing a database for the administrative tasks, to prevent repeatedly requested information in order to move forwards to creativity and innovation (Respondent 115).

Mintzberg (1983, cited in Ajagbe et al., 2016) defined organisational structure as 'how people are organized or how their jobs are divided and coordinated' (p. 65). According to Ajagbe et al. (2016), organisational structure 'is the way responsibility and power are allocated, and work procedures are carried out, among organisational members' (p. 65). Shafiee, Razminia and Zeymaran (2016) stated that organisational structure factors begin with utilising organisational resources and advantages, empowerment of recognising opportunities, provision of new combinations of obtainable resources and finally levelling the ground for organisational growth. Similarly, Shalley and Gilson (2004) stated that organisation's structure can play a vital role in boosting or impeding creativity. In addition, leaders can do many things to guarantee that the context of their workplace or division is one that sustains creativity.

Thus, some scholars demonstrated that organisational structure is among the factors that can influence creativity. Andriopoulos (2001) reviewed the literature and the results showed that organisational structure is a factor that enhances creativity in an organisation. Alves et al. (2007) considered organisational structure one of the major six internal factors that affect organisations' creativity, innovation and new product development. Martins and Terblanche (2003) developed a framework that specified five determinants of work environment culture that encourage creativity and

innovation: strategy, structure, support mechanisms and behaviour that promotes innovation and communication.

Although the literature has shown that organisational structure is a contributor to performance (e.g., Plugge, Bouwman & Molina-Castillo, 2013; Ajagbe et al., 2016; Shafiee, Razminia and Zeymaran, 2016), there is a lack of empirical studies that have examined empirically the relationship between creativity and organisational structure.

### ***Job rotation***

Two respondents recommended that job rotation could improve employees' creativity:

Rotate the employees in other sections of the organisation from time to time in order to provide new creativities and ideas (Respondent 569).

Job rotation to acquire skills for the development and creativity (Respondent 128).

Job rotation is defined as the 'lateral transfer of workers among a number of different work stations where each requires different skills and responsibilities' (Azizi, Zolfaghari & Liang, 2010, p. 70). According to Chang et al. (2014), job rotation is a vital element of high-commitment work systems and fosters employees to achieve greater knowledge and abilities by assigning them to diverse positions within the organisation. Hodgson, Al Shehhi and Al-Marzouqi (2014) argued that job rotation can serve both the workers and their organisation's objectives. Likewise, Zin, Shamsudin and Subramaniam (2013) demonstrated that it involves an efficient change of employee by relocating workers to diverse domains of responsibility on the premise of developing competencies.

Thus, many studies have investigated the impact of job rotation, such as motivation (Kaymaz, 2010), career development (Zin, Shamsudin & Subramaniam, 2013), employee performance/satisfaction (Hodgson, Al Shehhi & Al-Marzouqi, 2014), employee commitment and job involvement (Mahalakshmi & Uthayasuriyan, 2015), productivity, accident rate and satisfaction (Jeon & Jeong, 2016).

Amabile (1988) argued that knowledge technical skills are significant antecedents of employee creativity. In addition, Shalley and Gilson (2004) demonstrated that job rotation has become accepted practice in the organisations. Therefore, managers

should ensure that employees have sufficient experiences in a work field if they would like them to be creative. Consequently, while employees from diverse areas might bring new viewpoints to the workplace, they also require adequate expertise and familiarity with organisational goals so that creativity can take place.

However, few empirical studies address the link between job rotation and creativity. Only Chang et al.'s (2014) examined this, finding that job rotation is among the high-commitment work systems positively related with employees' creativity.

### **7.11 Summary**

This chapter has analysed and detailed findings of the quantitative main cycle of this research.

Data analysis has been conducted using SPSS. The analysis was carried out by outlining personal profiles of participants, checking the missing data, outliers, distribution shape of the questionnaire, reliability of the survey instrument and EFA. Then, measurement models (CFA) and SEM models (research model) were performed using AMOS. SEM was then conducted to test the three hypotheses. Finally, the alternative model was proposed and tested.

As outlined earlier, an open-ended question was included in the questionnaire. The goal behind this was to encourage participants to suggest further factors to enhance creativity that may not have been listed on the questionnaire.

Chapter 8 will discuss the findings of the quantitative cycle of the research design.



## Chapter 8: Discussion of Quantitative Cycle

### 8.1 Introduction

Chapter 7 presented a detailed analysis of findings of the quantitative cycle of the research design.

The objective of this study was to investigate the factors that affect employees' creativity in Dubai public-sector organisations. The study posed the following research question that guided the study:

What is the impact of 'organisational motivation to innovate' on the relationship between three antecedent factors—a) individual creativity components b) determinants of work context and c) government regulation and incentives—on the outcome, 'creativity among employees' in Dubai government organisations?

As stated in Chapter 1, the research question is subdivided into the three more specific questions:

- 1) What is the impact of 'organisational motivation to innovate' on the relationship between the 'individual creativity components factors' and 'creativity among employees' in Dubai government organisations?
- 2) What is the impact of 'organisational motivation to innovate' on the relationship between 'determinants of work context factors' and creativity among employees in Dubai government organisations?
- 3) What is the impact of 'organisational motivation to innovate' on the relationship between 'government regulation and incentives' and 'creativity among employees' in Dubai government organisations?

A mixed method approach was utilised to answer the above questions, with a qualitative interviewing method followed by a questionnaire. Data were collected from public-sector organisations in the Dubai government context. In Cycle 1, semi-structured interviews were conducted with nine key decision makers in three Dubai government organisations. The interviewees were asked specific questions ranging from identifying how creativity and innovation are defined and if both concepts are

related to each other, highlighting the adaptation of creativity in public-sector organisations, and recognising factors that influence creativity in Dubai government organisations.

In Cycle 2, as per the research design, a questionnaire was distributed to 668 employees working in three Dubai government organisations. The participants were asked about the specific individual and work environment factors, and government regulation that influence their creativity. In addition, an open-ended optional question was added to the questionnaire: What would you change in order to improve creativity (idea generation)? This question was added to identify additional factors that were not explicitly included in the questionnaire.

The qualitative data were analysed using NVivo (version 11) and the Cycle 2 quantitative data were analysed using SPSS (version 23) and AMOS (version 23).

There were several major findings:

- 1) The direct relationship between organisational motivation to innovate and employees' creativity.
- 2) Full mediation effect of organisational motivation to innovate on the relationships between employees' creativity and: 1) domain-relevant skills, 2) sufficient resources, 3) managerial encouragement, 4) work group support, 5) freedom, 6) challenging work and 7) government regulation and incentives.
- 3) The result of mediating effects showed no indirect effects of 1) creativity-relevant skills, 2) realistic workload pressure via organisational motivation to innovate on employee creativity.

This chapter aims to discuss the key findings in the context of relevant scholarly literature. The chapter is structured as follows:

First, the chapter will provide a summary of the conceptual framework that guided the research while highlighting the gaps that will be addressed through the research question, and how the proposed model extends the body of knowledge. Second, each key finding will be discussed with reference to key hypotheses and relevant literature.

Finally, a conclusion will be presented, highlighting the major findings and contributions.

## **8.2 The theoretical gaps**

The suggested conceptual model in this study has its theoretical basis in the componential model of creativity and innovation in organisations (Amabile, 1988).

Limited research has investigated factors influencing employees' creativity at work (Amabile, 1983). Thus, the componential model of creativity and innovation in organisations as proposed by (Amabile, 1988) was among the first comprehensive models that examined employee creativity in the literature. Two types of factors are examined by Amabile (1988): individual creativity components (domain-relevant skills, creativity-relevant skills and intrinsic task motivation) and organisational factors (sufficient resources, freedom, managerial encouragement, challenging work, realistic workload pressure, work group support and lack of organisational impediments).

However, one of the limitations of Amabile's (1988) model is that it concentrates only on features within an organisation. It does not consider external factors (Amabile & Pratt, 2016). As discussed in Chapter 2, there is a trend that suggests that workplaces should consider the influence of external climate on organisational performance (Cilla, 2011; Huțu, 2005, cited in Rusua & Avasilcai, 2014). Moreover, according to the findings of McAdam and McClelland (2002), ideas for new products are also influenced by external sources. Indeed, Perry and Porter (1982) provided examples of external environment factors that influence motivation in public organisations, such as socionormative, political, demographic, economic and technological.

Given the above gaps and considering that the current research aimed to investigate how various factors influence employee creativity, it was considered important to understand if external factors impact employees' creativity in the public sector. This was strengthened by the findings from Cycle 1 of the research design, which confirmed that government regulation and incentives as an external factor have the potential to affect employee creativity. Therefore, Cycle 2 was informed by Cycle 1 and the gaps identified in the literature.

Direct and indirect relationships between individual creativity components, determinants of work context, and government regulation and incentives and employees' creativity were ascertained by examining the proposed model.

Amabile et al. (1996) was the only scholar who introduced organisational motivation to innovate as a summated variable, which includes both organisational encouragement and lack of organisational impediments. Few studies have investigated the direct effect of organisational motivation to innovate on employees' creativity (e.g., ElMelegy et al., 2016). No previous studies have examined the mediating effect of organisational motivation to innovate. Thus, based on the model, both organisational encouragement and lack of organisational impediments were summated together to measure organisational motivation to innovate (Amabile et al., 1996). The remainder of work context factors—sufficient resources, freedom, managerial encouragement, work group support, challenging work and realistic workload pressure—were called determinants of work context and each variable was measured separately.

Examining empirically the direct and indirect (mediating) role of organisational motivation to innovate, Hartmann (2006) provided evidence that motivation is considered a major force through which workers allocate effort to introduce and execute new ideas. Although the componential theory of creativity and innovation in organisations (Amabile, 1988) considers organisational motivation to innovate is analogous to individual intrinsic task motivation (Amabile & Pratt, 2016), greater priority was given to intrinsic task motivation, which is believed to be the principle of creativity (Amabile, 1997). Indeed, prior research provided some direct support for the significance of intrinsic task motivation for understanding individual creative responses (Oldham & Cummings, 1996). Other studies have examined the mediating effects of task-intrinsic motivation (e.g., Shin & Zhou, 2003; Prabhu, Sutton & Sauser, 2008; Dayan, Zacca & Di Benedetto, 2013; Liu et al., 2016). Despite this, recently researchers have discussed that under certain conditions, extrinsic motivation might have a significant positive influence on creativity, in particular when creativity is a response to the creative conditions inherent in the employee's performance (Unsworth & Clegg, 2010, cited in Zhang, Fan & Zhang, 2015, p. 613). Thus, another contribution of this thesis lies in that it is the first to examine the direct and indirect

role of organisational motivation to innovate that helped to explain the relationship between different factors and employees' creativity.

Moreover, Berman and Kim (2010) illustrated that although the significance of creativity is commonly acknowledged, the current literature does not comprise much mention of strategies to harness this potential in public administration. Such and Shin (2005) stated that creativity is comparatively unexamined in the non-profit sector, as empirical research has focused more on the profit-driven organisation setting. Thus, Rangarajan (2008) suggested examining the role of contextual, structural and other creativity-relevant factors that can be gathered using established survey instruments such as KEYS, which would be useful in public-sector organisations.

As discussed in Chapter 2, most creativity studies have been conducted in the private sector (e.g., Amabile, 1988, 1997; Oldham & Cummings, 1996; Amabile & Gryskiewicz, 1989; George & Zhou, 2001; Foss, Woll & Moilanen, 2013; Eder & Sawyer, 2008; Rasulzada & Dackert, 2009; Larson, 2011; Foss, Woll, & Moilanen, 2013). Few studies have been conducted in public-sector organisations (e.g., West & Berman, 1997; Rangarajan, 2008; Park et al., 2014).

The present study was conducted in public-sector organisations; thereby, contributing to public-sector literature and addressing the call for future research (Rangarajan, 2008). For example, although the public sector is traditionally structured, according to Parker and Bradley (2000), the characteristics of public organisations closely comply with Weber's legal-rational model (Weber, 1984, cited in Parker & Bradley, 2000, p. 130), which described bureaucracy as hierarchical, rule enforcing, impersonal in the application of laws and consisting of members with specialised technical knowledge of rules and procedures.

Jurisch et al. (2013) argued that public-sector organisations require continual change to tackle the existing financial, social and political challenges, public-sector organisations in different places should rethink, adjust and change their fundamental service processes. According to Parker and Bradley (2000), since the 1980s, management theories have suggested a framework of management designed to overcome the limitations of the traditional bureaucratic model of public management and grant a foundation for increased productivity and efficiency in public services.

Narayan and Singh (2014) pointed out that public-sector reform is not a new phenomenon, as governments in different countries have experience with a great array of management reforms (Walker & Boyne, 2006). Indeed, the literature on public management reforms has shown that radical changes related to values, work and organisation have taken place or are under way (Ackroyd, Kirkpatrick & Walker, 2007).

Jas and Skelcher (2014) elaborated that during 1980s, private-sector practices and concepts were introduced to public-sector organisations across the world and became generally identified as NPM. According to Sluis, Reezigt and Borghans (2017), NPM reforms were applied to diverse degrees and with diverse emphases. However, there are no studies yet that have examined how adoptions of organisational reforms by the public sector (e.g., NPM) affect organisational outcomes such as employees' creativity.

Examining this relationship is particularly significant in a unique setting such as Dubai government organisations, because of the increasing emphasis within the government sector to take a service excellence approach as defined by the needs of knowledge economy (The official Portal of Dubai plan 2021, 2017). While it is beyond the scope of the present research to study reforms in public-sector management, the examination of organisational motivation to innovate as a summated variable and how this construct affects the relationship between individual/organisational/external factors and employees' creativity in this context of public sector reforms is yet to be examined in literature. Thus, this study contributes to the body of knowledge and addresses gaps in the literature (Rangarajan, 2008; Grell, 2013).

In conclusion, this section has provided a general discussion of the scholarly gap in the research and the contextual gap, which leads to the proposed framework.

This research aimed to investigate the impact of 'organisational motivation to innovate' on the relationship between three antecedent factors—a) the individual creativity components factors, b) determinants of work context factors and c) government regulation and incentives—on the outcome, 'creativity among employees' in Dubai government organisations.

Drawing on the aforementioned gaps, both conceptual and contextual, the following section will provide a critical discussion of the key findings of the research with respect to specific hypotheses and in the context of relevant literature.

### **8.3 Discussion of key findings**

As stated earlier, no studies have investigated organisational motivation to innovate as a mediator. Amabile et al.'s (1996) scales of organisational encouragement contained certain themes, such as encouragement, different work mechanisms, top management, performance evaluation, reward, recognition and open atmosphere, trust and respect for people's ideas. A lack of organisational impediments contained other themes, such as limited political problems, lack of destructive competition, lack of destructive criticism, and lack of negative criticism.

#### **8.3.1 Hypothesis 1**

H1 stated that organisational motivation to innovate mediates the relationship between individual creativity components—domain-relevant skills and b) creativity-relevant skills—and employees' creativity.

The above hypothesis aimed to investigate the following subresearch question: What is the impact of organisational motivation to innovate on the relationship between the individual creativity components and employees' creativity among employees in Dubai government organisations?

Further H1 contained two subhypotheses, each of which will be discussed separately.

#### **Hypothesis 1a: Organisational motivation to innovate mediates the relationship between domain-relevant skills and employees' creativity.**

As stated in Chapter 7, the statistical analysis of the proposed relationship as stated in the hypothesis showed a non-significant direct relationship between domain-relevant skills and employees' creativity. The result of mediating effects showed positive indirect effects of domain-relevant skills via organisational motivation to innovate on employee creativity. Thus, H1a was supported.

Amabile (1988) depicted domain-relevant skills as:

the essential skills from which any performance should progress. This element is seen as the set of cognitive pathways for solving a given problem or doing given tasks. This component includes factual knowledge, technical skills, and special talents in the domain in question (p.130).

Amabile (1983a, 1983b, cited in Amabile et al., 1996) stated that domain-relevant skills depend on:

- 1) Innate cognitive abilities
- 2) Innate perceptual and motor skills, and
- 3) Formal and informal education (p. 384).

Eder and Sawyer (2008) clarified that domain-relevant skills in a work context reflect employees' knowledge and his or her capability to perform the required tasks. The findings of this study for the non-significant direct relationship between domain-relevant skills and employees' creativity are supported in the literature, although there is inconsistency in the reported findings. For example, several empirical studies have investigated the relationship between domain-relevant skills and employees' creativity, with some studies showing a positive relationship (e.g., Amabile, 1989; Davis, 1997; Baer & Kaufman, 2005; Wynder, 2007; Birdi, Leach & Magadley, 2016), and some showing no significant relationship between domain-relevant skills and employees' creativity (e.g., Eder & Sawyer, 2008; Munoz-Doyague, Gonz~alez-Alvarez & Nieto, 2008; Dayan, Zacca & Benedetto, 2013).

A possible explanation for the insignificant result of the direct relationship and the mixed findings as reported above are that other factors influence the relationship between the two variables. For example, a study conducted by Wynder (2007) discovered that when people with a high degree of domain-relevant knowledge (which is a dimension of domain-relevant skills as per Amabile [1988]) expected to be assessed in the process-based control, their creativity decreased compared to low-knowledge people. Eder and Sawyer's (2008) study further suggested, while explaining the mixed results, that positive and negative effects suggested that researchers must continue to investigate work situations that improve or hinder these relations, thus providing further justification for examining variables that mediate the relationship between domain-relevant skills and employees' creativity.



This study's results found full mediation of organisational motivation to innovate on the relationship between domain-relevant skills and employees' creativity. Offering further support for the mediating effect as found in this research, were Dul, Ceylan and Jaspers (2011), who provided evidence that although employees' creativity is driven by personal characteristics, it could also be developed in the workplace. Further, George and Zhou (2001) argued that employees with an openness to experience demonstrate creative behaviour in an organisation that supports their tendencies, are likely to be creative. Dul, Ceylan and Jaspers (2011) demonstrated that the more knowledge workers perceive encouragement in the social-organisational work context, the higher their level of creative performance will be.

Specifically, the finding of full mediating effects is further strengthened by George and Zhou (2001), who explained that two conditions in the workplace lead to creative behaviour categorised as a high degree of openness to experience feedback valence, 'which is defined as the extent to which feedback is positive or negative' (Zhou, 1998, cited in George & Zhou, 2001, p. 514 ) in a work setting and unclear ends 'which is defined as the presence of two alternative ways in which work tasks may allow for the manifestation of creative behavior' (George & Zhou, 2001, p. 5211).

**Hypothesis 1b: Organisational motivation to innovate mediates the relationship between creativity-relevant skills and employees' creativity**

As shown in Chapter 7, the statistical analysis of this hypothesis showed a non-significant direct relationship between creativity-relevant skills and employees' creativity. Moreover, the result of mediating effects showed no indirect effects of creativity-relevant skills via organisational motivation to innovate on employee creativity. Thus, H1b was not supported.

According to Amabile (1988), creativity-relevant skills are:

something extra for creative performance and include a cognitive style favorable to taking new perspectives on problems, an application of heuristics for the exploration of new cognitive pathways and a working to conducive to persistent, energetic pursuit of one's work (p. 130).

Again, mixed findings have been reported in the literature, with some studies reporting a positive relationship between creativity-relevant skills and individuals'

creativity (e.g., Davis, 1997; Amabile, 1989; Baer & Kaufman, 2005; Dayan, Zacca & Benedetto, 2013), and others failing to find a significant relationship (e.g., Eder & Sawyer, 2008; Munoz-Doyague, Gonzalez-Alvarez & Nieto, 2008; Sagiv et al., 2010).

An explanation for the non-significant associations found in the present research is that other factors might influence the direct relationship between those variables. For example, findings of Sagiv et al. (2010) study clarified that prior studies showed the negative impact of systematic (structured) cognitive style in employees' creativity. Moreover, Sagiv et al.'s (2010) demonstrated that people with intuitive style, which refers 'to the tendency to capture a pattern (e.g., meaning, structure) without being able to account for the source of the knowledge or information' (Sagiv et al., 2010, p. 1091) were more creative than systematic ones under free circumstances. Systematic people could become as creative as intuitive individuals if they perform under highly structured circumstances that permit them to seek and pursue rules.

Therefore, these results point towards the need for measuring the mediating impact of organisational motivation to innovate. For example, some studies have found a positive mediating effect of dimensions of organisational motivation to innovate between creativity-relevant skills and employee creativity. de Stobbeleir, Ashford and Buyens (2011) provided evidence that frequency of feedback inquiry mediates the relationship between cognitive style and creative performance.

However, the results of this study did not show any mediating influence of relationship with different dimensions of organisational motivation to innovate. This finding aligns with few others, which also showed no mediating effect. For example, Tierney, Farmer and Graen (1999) provide evidence that innovative cognitive style workforce performing with a similar style leadership did not lead to enhancing employee creativity.

The mixed findings point to the need for new studies with additional variables to clarify the indirect relationship between creativity-relevant skills and employee creativity. For example, Amabile (1988) pointed out that creativity-relevant skills depend on personality characters and training. In addition, a recent study conducted

by Thundiyl et al. (2016) in China, showed that interaction of creative self-efficacy and positive affect was significantly linked to employees' creative performance.

Thus, the findings of the present research provide direction for future research, to examine other potential mediators not explored in the current study, outside of the factors cited in Amabile's (1988) model and as measured in the current study.

To sum up, the key finding of this section is that the result of mediating effects showed positive indirect effects of domain-relevant skills via organisational motivation to innovate on employee creativity, with no mediating effect for creativity-relevant skills, suggesting that future research should examine other factors that could influence the nature of the relationship between stated variables.

### **8.3.2 Hypothesis 2**

H2 stated that organisational motivation to innovate mediates the relationship between determinants of work context—a) sufficient resources, b) managerial encouragement, c) work group support, d) freedom, e) challenging work and f) realistic workload pressure—and employees' creativity.

The above hypothesis aimed to investigate the following subresearch question: What is the impact of organisational motivation to innovate on the relationship between determinants of work context factors and employees' creativity in Dubai government organisations?

This hypothesis comprised of six types of determinants of work context. Results indicate five full mediation effects were supported: sufficient resources, managerial encouragement, work group supports, freedom and challenging work. No mediation effect of organisational motivation to innovate was found for the relationship between realistic workload pressure and creativity. As shown in Chapter 7, to assess the mediating effects of organisational motivation to innovate, the direct relationships between determinants of work context and employees' creativity were examined.

In terms of the direct relationships, only one direct relationship was found between organisational motivation to innovate and employees' creativity. There was no direct relationship between the rest of variables and employees' creativity. Since

organisational motivation to innovate is the mediator, the direct relationship between organisational motivation to innovate and employees' creativity resulted in either the presence of full mediation effect or no mediation effect.

The following section will discuss the direct relationship followed by the mediating effects in the context of the relevant literature.

The direct relationship between organisational motivation to innovate and employees' creativity:

As discussed in Chapter 7, the statistical analysis showed a significant direct relationship between organisational motivation to innovate and employees' creativity.

As stated in Chapter 5, according to Amabile (1997) organisational motivation towards innovation includes the absence of numerous factors that can weaken creativity. This component is considered an essential orientation of the organisation towards innovation, and it encourages both creativity and innovation in the workplace. Amabile et al. (1996) clarified that organisational motivation to innovate includes two variables: organisational encouragement and lack of organisational impediments.

Diliello et al. (2011) stated that organisations should strive to enhance the stimulants and eliminate the obstacles to sustain employee creativity and develop organisational innovation. Additionally, according to ElMelegy et al. (2016), among the practices that leaders should provide is a positive environment to foster creativity by reducing organisational impediments and establishing well-coordinated mechanisms for identifying and rewarding creative behaviours. Indeed, Burroughs et al. (2011) argued that employees do perform for compensation, even in creative domains.

Therefore, the achieved result aligned with prior studies that showed positive relationships between both components of organisational motivation to motivate; organisational encouragement (e.g., Ganesan & Weitz, 1996; Burroughs et al., 2011; Chang et al., 2014) and lack of organisational impediments (e.g., Ensor, Pirrie & Band, 2006; ElMelegy et al., 2016) and employees' creativity. Similarly, other studies showed positive associations between employees' creativity and some dimensions of organisational motivation to innovate, such as reward (e.g., Byron & Khazanchi,

2012; Malik, Butti & Choi, 2015), pay (e.g., Ramamoorthy et al., 2005) and external evaluation (e.g., Amabile, 1979).

This study is unique in that it is the first to have examined the impact of organisational motivation to innovate, as a summated variable, on employee creativity, the findings further strengthened by Amabile & Pratt's (2016) research, which gave greater priority to organisational motivation to innovate compared to intrinsic task motivation.

Only one other study (ElMelegy et al., 2016) has examined the impact of organisational motivation as a summated variable on employees' creativity. However, the authors in that study added two variables to Amabile's (1997) model— sufficient resources and realistic workload pressure—which also resulted in a strong positive relationship, thereby providing further credence to the findings of the present study. The findings also strengthen the argument for examining organisational motivation to innovate as a summated variable.

Further, this is the first study to have examined this topic in the context of the public sector and in a new context, as all previous studies were examined in private-sector organisations like retail buying companies (e.g., Ganesan & Weitz, 1996), private universities (e.g., Malik, Butti & Choi, 2015), manufacturing organisations (e.g., Ramamoorthy et al., 2005), marketing and NPD executives (e.g., Burroughs et al., 2011), advertising agencies (e.g., Ensor, Pirrie & Band, 2006) and private architectural firms (e.g., ElMelegy et al., 2016).

The results, as reported above, have contributed to creativity literature in several ways. The componential theory of creativity and innovation in organisations considers that organisational motivation to innovate is analogous to individual intrinsic task motivation (Amabile & Pratt, 2016). However, the bulk of research on creativity over the years has focused only on examining the impact of intrinsic motivation on individuals' creativity (e.g., Ganesan & Weitz, 1996; Shin & Zhou, 2003; Eisenberger & Rhoades, 2001; Eder & Sawyer, 2008; Prabhu, Sutton & Sauser, 2008). Thus, the findings provided a better understanding of the holistic influence of organisational motivation to innovate on employees' creativity because this concept is much wider than examining the impact of specific dimensions like reward, pay or external

evaluation. Thus, it helps the leader and decision-makers who prioritise creativity to establish the related policies.

In terms of the mediating effect of organisational motivation to innovate on the relationship between determinants of work context factors and employees' creativity, the result of each of these subhypotheses is discussed in detail below.

H2a: Organisational motivation to innovate mediates the relationship between sufficient resources and employees' creativity.

The statistical analysis of this hypothesis showed a non-significant direct relationship between sufficient resources and employees' creativity. The result of mediating effects showed positive indirect effects of SR via organisational motivation to innovate on employee creativity. Thus, H2a was supported.

Sufficient resources comprise elements such as 'materials, information, and general resources available for work' (Amabile et al. 1999, p. 631), time and human resources (Shalley & Gilson, 2004). Sonenshein (2014) provides evidence that while availability of resources can spark employees' creativity, whether every sort of resource leads to creativity relies on the interpretations and actions of managers and employees. Lending further credence to the non-significant direct relationship between sufficient resources and employees' creativity as discovered in the present study, Mueller and Kamdar (2011) provided evidence that information as a resource is essential but it is difficult to guarantee that a creative actor would use the information.

Evidence regarding the relation between sufficient resources and employees' creativity is mixed, with some studies showing a positive relationship between both variables (e.g., Ekvall & Ryhammar, 1999; Rasulzada & Dackert, 2009; Raudeliūnienė, Meidutė & Martinaitis, 2012; Mbatha, 2013; Sonenshein, 2014), and others failing to find any relationship (e.g., Bommer & Jalajas, 2002; Helen, 2004; Sundgren et al., 2005; Verbeke et al., 2008; Dayan, MZacca & Benedetto, 2013; Yeh & Huan, 2017).

For example, in a study to evaluate the influence of work factors on employees' creative performance, Yeh and Huan (2017) provided evidence that while accessibility of resources is vital in generating quantity of creative ideas, ample

resources by itself does not measure up to quality. In a study conducted in the UAE by Dayan, Zacca and Di Benedetto (2013), no significant direct relationship was found between access to resources and entrepreneurial creativity. Further, similar results of non-significant direct relationships were found by researchers in Western countries, such as the Netherlands (e.g., Verbeke et al., 2008), US and Canada (e.g., Bommer & Jalajas, 2002), Sweden, the UK (e.g., Sundgren et al., 2005) and Taiwan (e.g., Yeh & Huan, 2017). As stated above, one study was conducted in the UAE to test a mediating relationship. Dayan, Zacca and Di Benedetto's (2013) study provided evidence that alertness to opportunity, which is defined as a 'precursor to the recognition of opportunity' (Kirzner, 1999, cited in Dayan, Zacca and Di Benedetto, 2013, p 227), fully mediated the associations between resource access and entrepreneurial creativity. However, the study was conducted in the private sector and entrepreneurial context. Various other studies have found non-significant direct relationships between sufficient resources and employees' creativity in private-sector organisations, such as high-tech SMEs (e.g., Bommer & Jalajas, 2002), advertising agencies (e.g., Verbeke et al., 2008), R&D (e.g., Sundgren et al., 2005), fine-dining restaurants (e.g., Yeh & Huan, 2017), sales and plant maintenance (e.g., Helen, 2004) and various other industries (e.g., Dayan, Mzacca & Benedetto, 2013). However, this is the first study that has examined the relationship between sufficient resources and employee creativity within the public sector.

An explanation for the non-significant relationship may be found in evidence provided by Zhou, Shin and Cannella (2008), who proposed that access to resources is simply an indirect method of supporting creativity in the workplace. Amabile (1998, p. 83) stated that while adding additional resources above a 'threshold to sufficiency' does not enhance creativity, resources below that threshold may reduce creativity. Drawing from Herzberg's (1987) two-factor theory of motivation, resources could be considered a hygiene factor, and as per the proposition of the theory, while availability of hygiene factors can prevent dissatisfaction, it is not sufficient to enhance motivation by itself.

The results regarding mediating effects, which showed positive indirect effects of sufficient resources via some dimensions of organisational motivation to innovate on employee creativity, strengthen the preceding argument that for creativity to occur,

sufficient resources by itself is not adequate. The strong support for H2a, as found in the present study, is supported in the literature. For example, Park et al. (2014) stated that for creativity to occur, organisations are strongly suggested to develop different mechanisms related to knowledge-sharing, adapted in a manner that meets organisation-specific motivational desires. Byron and Khazanchi (2012) provided meta-analytic evidence that the more the engagement information offered, the more positive the association between creativity-contingent rewards and creative performance. Zubair et al.'s (2015) research provided evidence that climate for creativity and change mediated the relationship between employees' participation in decision-making and their creativity.

It is evident from the results of this study that SR by itself does not lead to employee creativity. However, creativity is enhanced indirectly through the availability of organisational motivation to innovate.

H2b: Organisational motivation to innovate mediates the relationship between managerial encouragement and employees' creativity.

The statistical analysis of this hypothesis showed a non-significant direct relationship between managerial encouragement and employees' creativity. The result of mediating effects showed positive indirect effects of managerial encouragement via organisational motivation to innovate on employee creativity. Thus, H2b was supported.

Results of the present study regarding the non-significant relationship between managerial encouragement and employees' creativity is partly supported in the literature, although these results are primarily reported in a private-sector context, such as a high-tech company (e.g., Ohly, Sonnetag & Pluntke, 2006), a marketing group (e.g., Sadi & Al-Dubaisi, 2008), the energy sector (e.g., Foss, Woll & Moilanen, 2013), training institutes (e.g., Binnewies, Ohly & Niessen, 2008). Additionally, they are usually conducted in a Western context, such as Germany (e.g., Ohly, Sonnetag & Pluntke, 2006; Binnewies, Ohly & Niessen, 2008), Norway (e.g., Foss, Woll & Moilanen, 2013). Thus, this is the first study to provide empirical evidence that managerial encouragement by itself is not a driver for employee creativity in public-sector organisations.



It is important to state here that similar to research discussed in relation to the result for H2a and H2b, the empirical evidence regarding the relationship between managerial encouragement and employees' creativity is mixed. For example, in contemporary creativity literature, managerial encouragement has received substantial research attention as a vital factor that could influence employees' creativity positively (e.g., Redmond, Mumford & Teach, 1993; Ohly, Sonnetag & Pluntke, 2006; Gong, Huang & Farh, 2009; Volmer, Spurk & Niessen, 2012; Hvidsten & Labraten, 2013; Kim & Yoon, 2015 Chang & Teng, 2017). For example, according to Oldham and Cummings (1996), controlling supervision is considered a practice within organisations that hinders creativity. Sadi and Al-Dubaisi (2008) demonstrated that management practices were the heaviest contributor to low self-confidence, which had a negative impact on creativity. Other studies have provided evidence that managers do not have a significant impact on employees' creativity (e.g., Bommer & Jalajas, 2002; Ohly, Sonnetag & Pluntke, 2006; Ensor, Pirrie & Band, 2006; Verbeke et al., 2008; Binnewies, Ohly & Niessen, 2008; Rasulzada & Dackert, 2009; Foss, Woll & Moilanen, 2013).

These mixed results indicate the need for further research to investigate this relationship further, and provide conclusive evidence regarding the nature of the relationship between managerial encouragement and employees' creativity (Ohly, Sonnetag & Pluntke, 2006).

This argument for examining the mediating impact of other constructs was further strengthened by key findings from Foss, Woll and Moilanen (2013), who interpreted this non-significant direct relationship between organisational encouragement and employee creativity, to be caused by the numerous hierarchical levels that appear to create an excessively large distance for managers to support creativity at the employee level.

Thus, the present study extends the literature by examining the mediating effect of organisational motivation to innovate on the relationship between managerial encouragement and employees' creativity, with the results indicating support for H2b.

While there are few studies that have examined this relationship in general, and none in a public-sector context, the few that did provide some support for the findings,

albeit using different constructs (e.g., Gupta & Singh, 2015; Henker, Sonnentag & Unger, 2015; Jaiswal & Dhar, 2015, 2017). For example, Shalley and Gilson (2004) provided evidence that leaders can influence employees' creativity through their influence on the work climate in which employees perform. Reiter-Palmon and Illies (2004) argued that leaders can enhance creative production through different mechanisms, such as affecting the motivation of employees through specific intervention such as setting clear objectives for creativity and offering developmental feedback (De Stobbeleir, Ashford & Buyens, 2011).

Further, a recent study by Jaiswal and Dhar (2017) found that trust in leaders strangely mediated the impact of servant leadership on employee creativity. In another study, Henker, Sonnentag and Unger (2015) provided empirical evidence that promotion focus, related to the motivation to attain preferred end-states, mediated the association between transformational leadership and employee creativity. Gupta and Singh (2015) showed that employees' justice perceptions partially mediated the association between leadership and creative performance behaviours. Likewise, Pan, Sun and Chow's (2012) study indicated that the association between supervisors and employee creativity can be influenced through alternative motivation-oriented psychological empowerment and social exchange-oriented obligation.

Hypothesis 2c: Organisational motivation to innovate mediates the relationship between work group support and employees' creativity.

In alignment with findings reported in previous sections, results for this hypothesis also showed a non-significant direct relationship between work group supports and employee creativity. The result of mediating effects showed positive indirect effects of work group support via organisational motivation to innovate on employees' creativity. Thus, H2c was supported.

Very few studies have examined the impact of work group support on employees' creativity. Of these studies, some showed positive relationship outcomes (e.g., Zhou & George, 2001; Madjar, Oldham & Pratt, 2002; Farmer, Tierney & Kung-McIntyre, 2003; Zhou, 2003; Ensor, Pirrie & Band, 2006) and some showed non-significant associations between employee creativity and the degree to which the work group provided support (e.g., Rasulzada & Dackert, 2009; Mueller & Kamdar, 2011; Foss,

Woll & Moilanen, 2013). For example, results of the present study contradict the componential model of creativity and innovation in organisations (Amabile, 1988) and the interactionist theory (Woodman, Sawyer & Griffin, 1993), both of which provided evidence of a positive direct relationship between work groups and employees' creativity. However, the results align with those of Nijstad and De Dreu (2002), who provided evidence through laboratory research that independent people are more creative than people performing together in groups. Likewise, Foss, Woll and Moilanen's (2013) study found that support from work groups did not have a significant influence on idea generation for female employees.

Clearly, the preceding section indicates the need for more research to investigate the conditions under which work group support can support employees' creativity, especially in divergent contexts and through measuring divergent constructs (Mueller & Kamdar, 2011). For example, Madjar (2005) provided evidence that it is vital to recognise the mechanism through which support from various groups affects workforces' creative responses. Further, Coelho, Augusto and Lages (2011) called for further research concerning how an employee's association with colleagues affects creativity, both directly and indirectly.

Shalley and Gilson (2004) provided empirical evidence that corporate behaviour could significantly influence employees' creativity through formal mechanisms, such as composing project teams or arranging meetings, or informally by allocating places for employees to gather and support more spontaneous interactions.

One can extend the argument for an enabling OC based on recent findings Binyamin and Carmeli (2017) reported that associations between teams, human and social capital, and individual creativity in the workplace was mediated by employees' growth satisfaction, which is defined as 'a feeling that one is learning and growing personally or professionally at work' (Kulik, Oldham & Hackman, 1987, p. 281).

In conclusion, the preceding discussion demonstrates that organisational motivation to innovate fully mediated the relationship between work group supports and employees' creativity, thereby further strengthening the argument for more nuanced examination of the impact of specific factors affecting employee creativity.

Hypothesis 2d: Organisational motivation to innovate mediates the relationship between freedom and employees' creativity.

The statistical analysis of this hypothesis showed a non-significant direct relationship between freedom and employees' creativity. The result of mediating effects showed positive indirect effects of freedom via organisational motivation to innovate on employee creativity. Thus, H2d was supported.

Amabile et al. (1999) defined freedom or autonomy in the day-to-day conduct of work as 'a sense of individual ownership of and control over work' (p. 631). According to Amabile et al. (1999), both freedom and autonomy are the same and used interchangeably. Thus, studies related to both freedom and autonomy are used in this discussion.

Hennessey and Amabile (2010) argued that the autonomy identified in the work context has long been considered a vital feature of the work environment for encouraging creativity. Similarly, Coelho and Augusto (2010) stated that autonomy is among the most investigated characteristics of employees' creativity. These mixed findings in autonomy research and employees' creativity points to the need for greater research to provide conclusive evidence regarding the nature of this relationship (Zhang et al., 2017). For example, while some studies have found a positive relationship between freedom and employees' creativity (e.g., Zhou, 1998; Mathisen, 2011; Moultrie & Young, 2009; Coelho & Augusto, 2010; Tsaur, Yen & Yang, 2011; Volmer, Spurk & Niessen, 2012; Sacchetti & Tortia, 2013; Sripirabaa & Maheswari, 2015; Yeh & Huan, 2017), others indicated that freedom as a dimension of work was not associated with employee creativity (e.g., Rasulzada & Dackert, 2009; Walter, 2012; Zhang et al., 2017).

The non-significant relationship between freedom and employees' creativity, as found in the present study, is consistent with that of Rasulzada and Dackert (2009), Walter (2012) and Zhang et al. (2017), with similar findings in the private-sector organisational context (e.g., Zhang et al, 2017; Walter, 2012; Rasulzada & Dackert, 2009), and in countries such as China (e.g., Zhang et al. 2017), Thailand (Walter, 2012) and Sweden (Rasulzada & Dackert, 2009).

The full mediation effects of organisational motivation to innovate on the relationship between freedom and employees' creativity, as found in the present study, further strengthen the argument for examining the context that freedom within organisations exists. For example, Chang, Huang and Choi (2012) provided evidence that task autonomy might decrease creativity if workers do not have previous experience with the task. Likewise, Langfred and Moye (2004) proposed a model suggesting that motivation mediates the association between task autonomy and performance, and providing employees with superior task autonomy results in higher performance through enhancing motivation.

Although this is the first study to examine the relationship in the public-sector context, the findings were consistent with prior empirical studies in creativity literature, which tested the mediating effects of different dimensions of organisational motivation to innovate on the association between freedom and employee creativity (Ramamoorthy et al., 2005; De Spiegelare et al., 2014). For instance, De Spiegelare et al. (2014) found that the relationship between job autonomy and innovative work behaviour, which includes idea generation, was mediated by work engagement.

Hypothesis 2e: Organisational motivation to innovate mediates the relationship between challenging work and employees' creativity.

The statistical analysis of this hypothesis showed a non-significant direct relationship between challenging work and employees' creativity. The result of mediating effects showed positive indirect effects of challenging work via organisational motivation to innovate on employee creativity. Thus, H2e was supported.

Amabile (1996) defined challenging work as 'a sense of challenge arising from intriguing nature of the problem itself or its importance to the organisation (internalized by the individual as a personal sense of challenge)' (p. 4). Dul and Ceylan (2011) defined a challenging job as 'the complexity of the job, and how demanding the job is' (p. 14). Various dimensions of challenging work have been investigated in its relationship with employees' creativity, such as job complexity (Cummings & Oldham, 1997) and employees' workplace goals (Zhou & Shalley, 2003).

Many empirical studies have addressed the influence of challenging work on employees' creativity, yet findings were mixed and inconclusive, as some scholars have agreed that challenging work influences employees' creativity positively (e.g., Hatcher, Ross & Collins, 1989; Zhang, Zhang & Song, 2015). Other studies have shown that challenging work did not lead to employees' creativity (e.g., Hartmann, 2006; Ensor, Pirrie & Band, 2006; Ohly, Sonnentag & Pluntke, 2006; Sadi & Al-Dubaisi, 2008; Rasulzada & Dackert, 2009; Sripirabaa & Maheswari, 2015). For instance, a recent study carried out by Sripirabaa and Maheswari (2015) showed that willingness to take on risk was negatively connected to employees' creativity and was not statistically significant. Further, Ohly, Sonnentag and Pluntke's (2006) research indicated that job complexity was not linked to employees' creativity. Similarly, the findings of Ensor, Pirrie and Band (2006) showed that the relationship between creativity and challenging work was lower than the norm found in previous empirical research.

Similar studies of non-significant relationships between challenging work and creativity were conducted in various countries, such as the UK (e.g., Ensor, Pirrie & Band, 2006), India (e.g., Sripirabaa & Maheswari, 2015), Sweden (e.g., Rasulzada & Dackert, 2009), Germany (e.g., Ohly, Sonnetag & Pluntke, 2006) and Switzerland (e.g., Hartmann, 2006), although this is the first study to examine the nature of this relationship in a different region and organisational context (Dubai government organisations).

All similar studies that have investigated the non-significant relationship between challenging work and creativity were carried out in private sector, such as in auto component manufacturing organisations (e.g., Sripirabaa & Maheswari, 2015), advertising agencies (e.g., Ensor, Pirrie & Band, 2006), high-tech fields (e.g., Ohly, Sonnetag & Pluntke, 2006; Rasulzada & Dackert, 2009) and the construction industry (e.g., Hartmann, 2006).

Sripirabaa and Maheswari (2015) suggested that the negative association between those two variables might be due to employees' fear of failure, which reduces creativity. The authors argued that risk-taking means taking processes forwards in uncertain situations. Additionally, new ideas are risky; the reason is that they

demonstrate ‘disturbances in routines, relationships, power balances, and job security’ (Albrecht & Hall, 1991, cited in Sripirabaa & Maheswari, 2015, p. 112).

Therefore, the result of the present study confirms that without a supportive work environment characterised by organisational encouragement and appetite for failure (as evidenced by enabling OC with with systems, structures and mechanisms to support idea generation), no creativity will result even with increasing job challenge. This is a particularly interesting finding in the context of Dubai government organisations, which are increasing their investment in workplace creativity.

In terms of investigating the mediating effects of organisational motivation to innovate on the relationship between challenging work and employees’ creativity, Oldham and Cummings (1996) discovered that when jobs are complicated and challenging, employees are expected to be excited about their tasks and concerned about completing these activities without rigid regulation or constraints.

The findings were supported with prior empirical studies that proved the mediating effects of different dimensions of organisational motivation to innovate between challenging work and employees’ creativity (Janssen, 2000; Holman et al., 2012; Chae, Seo & Lee, 2015). For example, Chae, Seo and Lee (2015) conducted a study that indicated that task complexity was indirectly related to employees’ creativity through team member exchange. A similar study by Holman et al. (2012) revealed that work-based learning strategies partially mediated the relationship between problem demand as a form of job design characteristics on employees’ idea generation. Moreover, Carmeli, Cohen-Meitar and Elizur (2007) result showed that organisational identification, which is defined as ‘the extent to which people identify with a particular social group that determines their inclination to behave in terms of their group membership’ (Ellemers, Kortekaas & Ouwerkerk, 1999, p. 372) mediated the association between job challenge and employees’ creativity. Further, Janssen’s (2000) empirical study showed that higher job demands lead workforces to perform a higher degree of innovative work behaviours; which comprises idea generation, idea promotion and idea realisation, only when they recognised a fair balance between exerted effort and reward obtained.

Carmeli, Cohen-Meitar and Elizur (2007) stated that research on the relationship between job challenge and employees' creativity has assumed only a direct association between the two variables, paying little consideration to both potential mediators and moderators. Thus, the result contributed to knowledge and added a new variable—organisational motivation to innovate—that acted as a mediator in Dubai government organisations. This is a new context and provided a deeper understanding of how organisational motivation to innovate as a summated variable fully mediated the relationship between challenge work and employees' creativity.

Hypothesis 2f: Organisational motivation to innovate mediates the relationship between realistic workload pressure and employees' creativity.

The statistical analysis of the related question to this hypothesis showed a non-significant result of both direct and indirect relationship between realistic workload pressure and employee creativity. Thus, hypothesis 2f was not supported.

Different kinds of work pressure have been investigated in the literature in relation to employees' creativity: time pressure (e.g., Andrews & Smith, 1996), workload pressure (e.g., Elsbach & Hargadon, 2006; Amabile & Conti, 1999), as well as both workload and time pressure (e.g., Foss, Woll & Moilanen, 2013).

Aleksić et al. (2017) agreed that based on the existing creativity research, the relationship between creativity and time pressure has been found to be positive, negative, or no effect, which could be explained in several ways. First, according to Rasulzada and Dackert (2009), diverse individuals react differently to workload and stress. Second, the result could be explained by the findings that different kinds of workload pressure might influence employee creativity differently, such as, challenge v. hindrance (LePine, Podsakoff & LePine, 2005; Podsakoff, LePine & LePine, 2007).

Further, it is to be reiterated that the present study was conducted in the public sector. There is some evidence to indicate that when the domain of the work varies, such as in high pressure jobs requiring high creativity, the concentration on core tasks boosts employee creativity. Thus, the variance in result of the present study could be explained by the nature of the domain. This may need further exploration.



The impetus for studying the mediating effect of organisational motivation to innovate on the relationship between realistic workload pressure and employees' creativity was the call for further studies about why and how workload pressure could influence creative performance (Gutnick et al., 2012). For example, Aleksić et al.'s (2017) study resulted that employees' creativity was high when workers perceived intense time pressure, a high quality of leader–member exchange association, and poor work–family balance. Also, Ohly and Fritz (2010) provided evidence that challenge appraisal partially mediated the relationship between daily time pressure and employees' creativity.

However, in the current study, mediation effect was not found, pointing to a need for additional variables to be examined to measure this relationship.

In summary, H2 demonstrated that there was only one direct relationship between organisational motivation to innovate and employees' creativity. There was no direct relationship between certain determinants of work context—sufficient resources, managerial encouragement, work group support, freedom, challenging work and realistic workload pressure—and employees' creativity.

There was a difference in the findings in terms of mediating effects. The result of mediating effects showed positive indirect effects of SR, managerial encouragement, work group support, freedom and challenging work via organisational motivation to innovate on employee creativity. Thus, H2a, H2b, H2c, H2d and H2e were supported. The result of mediating effects showed no indirect effects of realistic workload pressure via organisational motivation to innovate on employee creativity. Thus, H2f was not supported.

The dominant theme that has emerged from the findings in this section is that organisational motivation to innovate is a key factor mediating the relationship between determinants of work context factors and employees' creativity. It is evident from the results of the present study that the availability of sufficient resources, managerial encouragement, work group support, freedom and challenging work will lead to employees' creativity only in an organisational context characterised by organisational motivation to innovate (examined as a summated variable combining

organisational encouragement and lack of organisational impediments) (Amabile et al., 1996).

The findings confirm, as predicted by earlier researchers (Unsworth & Clegg, 2010, cited in Zhang et al., 2015), that creative conditions have the potential to strengthen the relationship between employee motivation to innovate and employees' creativity. Further, this is the first study to have examined this relation in a public-sector context.

Most mediating effect studies were conducted in the private sector, such as firms (e.g., Jaiswal & Dhar, 2017), different fields such as information technology and human resources (e.g., Henker, Sonnentag & Unger, 2015), restaurants, hotels, retail stores, banks, travel agents (e.g., Cheung & Wong, 2011), hotels (e.g., Jaiswal & Dhar, 2015) and manufacturers (e.g., Pan, Sun & Chow, 2012). However, limited studies have been conducted in the public sector. Gupta and Singh (2015) conducted research in publicly-owned Indian R&D laboratories.

The findings of the present study alluding to the mediating effect of organisational motivation to innovate on the relationship between key factors as examined in the present study (sufficient resources, managerial encouragement, work group support, freedom and challenging work), except, realistic workload pressure and employees creativity is particularly significant, given that the study was conducted in public sector context in a region, which is making increasing investment to develop the knowledge capital for long-term economic sustainability specifically. The results point to the significant of a holistic consideration of key organisational factors that affect employees creativity. While also providing key direction to organisations with regards to specific conditions (organisational encouragement and lack of organisational impediments) that need to be available for managers to be able to impact employees' creativity at work place positively.

From a scholarly angle, the findings provide empirical validation for Amabile and Pratt's (2016) call for further research to examine organisational motivation to innovate, given that it is one of key factors that has the potential to influence employees' creativity. The findings also fill a gap in literature regarding the call for empirical studies to be conducted in divergent contexts for greater generalisability (Hu, Gu & Chen, 2013).

More importantly, the strong positive mediating effects of organisational motivation to innovate on the relationship between determinants of work context factors and employees' creativity in the present study is particularly significant because it points to the need for understanding the role that OC can play in influencing the nature of this relationship. For example, in the present study, organisational motivation to innovate was examined through both: a) organisational encouragement and (through the availability of enabling practices, systems and reward and recognition mechanisms), b) lack of organisational organisational impediments, such as risk avoidance and criticism for new ideas (Amabile et al., 1996). This implies that even with availability of enabling work context factors, individual creativity might not improve if the OC does not demonstrate a shared commitment to experimentation and risk-taking, as evidenced through specific systems, processes and practices that are aligned with this vision.

### **8.3.3 Hypothesis 3**

Organisational motivation to innovate mediates the relationship between government regulation and incentives, and employees' creativity.

The statistical analysis of this hypothesis showed a non-significant direct relationship between government regulation and incentives, and employees' creativity. The result of mediating effects showed positive indirect effects of government regulation and incentives via organisational motivation to innovate on employee creativity. Thus, H3 was supported.

The above hypothesis aimed to investigate the subresearch question: What is the impact of organisational motivation to innovate on the relationship between government regulation and incentives, and employees' creativity in Dubai government organisations?

Drawing on Amabile and Pratt's (2016) recommendation to examine factors outside the organisations that have the potential to impact employees' creativity, the present study measured the direct relationship between government regulation and incentives, and employees' creativity. For example, an extensive political stakeholder theory postulates that the state is a unique stakeholder, with power that is unachievable for other stakeholders (Olsen, 2017). Thus, most stakeholder studies considered

government as a force affecting organisations (e.g., Henriques & Sadorsky, 1999; Savage et al., 1991; Mitchell, Agle & Wood, 1997; O'Higgins & Morgan, 2006). Since government is sort of a public-sector organisation (Broadbent & Guthrie, 1992), public service providers do not have to select their own processes and strategies. Instead, they should perform within policy constraints set by higher political authorities (Hood et al., 1998, cited in Boyne, 2003, p. 369). Governments across the world are seeking techniques to progress public services (Boyne, 2003). Thus, government regulation and incentives are considered a kind of institutional pressure on government organisations. According to Colwell and Joshi (2013), institutional pressure refers to 'the force exerted on companies within the same field to constrain organisational choice and ensure organisational conformity' (p. 76). Against this context, Iqbal (2011) called for more research to examine the relationship between government commitment, support and investment and how it influences creativity and innovation.

However, a review of relevant studies has revealed a lack of literature that discusses the interaction between employees and government policies and regulation. According to Boyne (2003), the association between regulation in the public sector and service performance is not clear enough. Boyne (2003) reviewed relevant literature and stated that limited empirical studies have examined the impact of government regulation on the performances of public-sector organisations (e.g., Molnar & Rogers, 1976; D'Aunno et al., 1991; Wolf, 1993; Andrews et al., 2008). Therefore, these gaps in the literature provided an impetus in the present research to explore the direct relationship between government regulation and incentives, and employees' creativity. However, no direct relationship between government regulation and incentives, and employees' creativity was identified in this study.

While no studies have yet examined the relationship between government regulation and employees' creativity, other relevant evidence can help to explain this result. For example, Boyne, Day and Walker (2002) provided evidence that direct relationship between regulation and performance is mediated by the expertise of regulators, which leads to examine the mediating role of organisational motivation to innovate on the relationship between government regulation and incentives, and employees' creativity.

This evidence from the present study that government regulation and incentives do not lead to creativity, prompts the next research question, as to the mediating role of organisational motivation to innovate on the relationship between government regulation and incentives, and employees' creativity.

The findings in the present research address a gap in the existing literature by providing evidence that factors within organisations, specifically organisational encouragement and lack of organisational impediments, are key factors that influence the relationship between government regulation and incentives, and employees' creativity.

Examining the impact of government regulation and incentives as an external variable on employees' creativity supports Oliver's (1997) argument that an organisation's institutional context comprises its internal culture and the broader impact of the state, society, and interfirm relations that describe socially adequate economic behaviour.

The results of the present study fill the gap in the extant literature which calls for examining how internal organisational constructs such as organisational culture, and the external push for government regulation and incentives impacts outcome variables such as, employees' creativity as examined in this study. It is evident from the result that despite the governmental push, it is only when enabling factors such as organisational motivation to innovate operationalized as (organisational encouragement and lack of organisational impediments) (Amabile et al., 1996) are present that creativity will result.

Drawing on arguments presented by Ackroid et al. (2007), Narayan and Singh (2014), and Sluis, Reezigt and Borghans (2017) have argued that the reduced efficiency and costs associated with public sectors that are organised according to traditional Weberian principles of bureaucracy, have led policymakers to increasingly adopt private-sector practices such as NPM. These practices are driven by service-oriented economies. Jas and Skelcher (2014) elaborated that during the 1980s, private-sector practices and concepts were introduced to public-sector organisations across the world. These became generally identified as NPM. However, according to Sluis, Reezigt and Borghans (2017), NPM reforms were applied to diverse degrees and with diverse emphases. Following this observation, one of the gaps identified in the

literature is that although public-sector reforms have been applied (Sluis et al., 2017), no studies have yet examined how these reforms such as NPM have affected organisational outcomes.

While examining NPM practices is beyond the scope of the study, the findings provide evidence of a strong mediating effect of organisational motivation to innovate on the relationship between, not only individual/organisational factors, but also external factors such as government regulation and incentives, and employees' creativity in a regional context characterised by public sector reforms.

For example, Dubai government organisations are increasingly being driven by private-sector practices, including substantive adoption of federal-level practices guided by the fourth cycle of the UAE government excellence system (The official Portal Sheikh Khalifa Government Excellence Program, 2013) and other excellence programs driven by the needs of a knowledge-intensive economy (in light of decreased oil reserves) (Albayan newspaper, 2017).

These findings are the first ever to emerge from a public-sector context, further strengthening the need for reform in organisational practices, including climate and culture to facilitate employee outcomes such as creativity. Further, there is need for further studies to examine if the nature of relationships between antecedent and outcome factors with regard to creativity remains the same in public v private sector.

In summary, H3 showed that there was no direct relationship between government regulation and incentives, and employees' creativity. The result of mediating effects showed positive indirect effects of government regulation and incentives via organisational motivation to innovate on employee creativity. Thus, H3 was supported.

## **8.4 Conclusion**

This research aimed to investigate the following research question: What is the impact of 'organisational motivation to innovate' on the relationship between three antecedent factors—a) the individual creativity components, b) determinants of work context and c) government regulation and incentives—on the outcome, 'creativity among employees' in Dubai government organisations?

The findings showed that only organisational motivation to innovate had a direct relationship with employees' creativity. The result of mediating effects showed positive indirect effects of domain-relevant skills, sufficient resources, managerial encouragement, work group support, freedom, challenging work and government regulation and incentives via organisational motivation to innovate on employee creativity. The result of mediating effects showed no indirect effects of creativity-relevant skills and realistic workload pressure via organisational motivation to innovate on employee creativity.

Overall, the findings indicated good support for the revised model of Amabile and Pratt (2016) and provided support for the critical role played by organisational motivation to innovate in influencing employees' creativity.

The results discussed in this chapter have contributed to creativity and public-sector literature themes, in addition to the contextual relevance of the framework within Asian countries in general and Dubai in particular.

Organisational motivation to innovate was studied as a summated variable, including both organisational encouragement and lack of organisational impediments (Amabile et al., 1996), in response to calls for further research (Amabile & Pratt, 2016). While few studies have examined creativity in the public sector (e.g., West & Berman, 1997; Rangarajan, 2008; Park et al., 2014), no studies have yet examined how organisational contexts, such as organisational motivation to innovate, mediates the relationship between individual/organisational factors and creativity. Therefore, the findings of the study address a major gap in the literature (Amabile & Pratt, 2016).

Further, several studies (e.g., Jingjit & Fotaki, 2010; Trotta et al., 2011) have recently called for more research to examine if the nature of the relationship between key management principles, as proposed by NPM principles, is evident in public sector. This study confirms that regulatory reforms affect creativity positively, only when combined with an enabling organisational context that encourages creativity (as measured in this study through: the fair, constructive judgment of ideas, reward and recognition for creative work, mechanisms for developing new ideas and an active flow of ideas and a shared vision) and lack of organisational impediments (as measured by an organisational culture that does not impede creativity through internal

political problems, harsh criticism of new ideas, destructive internal competition, and avoidance of risk, and an overemphasis on the status quo (Amabile et al., 1996).

Extending Amabile and Pratt's (2016) model, and as per recommendations for further research, external factors were also included in the proposed framework (Cilla, 2011; Rusua & Avasilcai 2014). Examination of external factors was driven by Cycle 1 findings, with key decision-makers confirming that government regulation and incentives as an external factor has a potential to affect employees' creativity.

Finally, an additional open-ended question was added to the questionnaire, relating to suggested changes to enhance employees' creativity. The participants suggested training programs, technology, recruitment, education, organisational structure and job rotation. This could be considered a direction for future research in public-sector organisations.

## **8.5 Summary**

This chapter began with a discussion of the conceptual framework that guided the research, while highlighting the gaps that were addressed through the research question. It has also outlined how the proposed model extends the body of knowledge. Each key finding has been presented and explored, and theoretical and practical contributions were presented and discussed.

Chapter 9 will present the conclusion of the thesis



## **Chapter 9: Conclusion**

### **9.1 Introduction**

Chapter 8 discussed the main findings of Cycle 2 of the research design, which was a questionnaire-based survey. In this chapter, the structure of the thesis will be reviewed. The overview of research will be highlighted and the theoretical, practical and methodological contributions of the current study will be discussed. Finally, the limitations of this study and direction for future research will be presented.

### **9.2 Structure of the thesis**

The current thesis contained nine chapters and was organised as follows:

Chapter 1 was an introduction to the study. It presented the key issues related to the topic and explored creativity in the public sector. Creativity in the context of the UAE and the relevant literature was discussed., followed by creativity in Dubai government organisations. Next, the objective and significance of the study were discussed. Also, the research gaps and research question were highlighted. Finally, the main concepts were defined.

Chapter 2 presented the literature review. First, it provided an overview about the nature of public and private-sector organisations. Then, because the current study was conducted in public-sector organisations, more details about government organisations were provided. Second, the focus was on creativity, its historical background, major themes, main theories, relationship with innovation, instruments used to measure creativity climate at work place, its application in organisations and different factors that influence employees' creativity were discussed.

Chapter 3 focused on the methodology of the qualitative cycle of research. It justified the use of qualitative methodology to gather data. Therefore, the chapter began by explaining the exploratory purpose and the research design, focusing only on the qualitative cycle. Next a description of the population, sample of the study and the organisational context were discussed, followed by a description of the data collection

procedures. Ethical issues and instruments used in this cycle were detailed. Finally, it presented data analysis processes used in the qualitative cycle of the research design.

Chapter 4 presented the research findings from the qualitative cycle of research design, which employed interviews with key decision-makers working in three of the Dubai government's organisations. NVivo (version 11) was used to analyse the qualitative data.

Chapter 5 was about the theoretical framework of the thesis. The chapter provided definitions of creativity and innovation. The componential theory of creativity and innovation in organisations (Amabile, 1988), as the theoretical background for this study, was demonstrated and critiqued, focusing on advantages and disadvantages of the theory. The developed conceptual framework and propositions were explored.

Chapter 6 was concerned with the research methodology that adopted mixed methods to answer the research question. As discussed earlier, Chapter 4 provided all details related to the qualitative cycle of research methodology used to gather data. This chapter focused on mixed methods, then concentrated more on the quantitative cycle, which is the main study of research design. Thus, the chapter centred on issues related to the mixed methods approach by explaining philosophical assumptions, approaches to research, research paradigms and the justifications of the research design. A description of the population and sample of the study and the organisational context were discussed. Next the focus turned to the quantitative main cycle by highlighting justifications for selecting quantitative methodologies, a description of the procedures of data collection and discussions of the instrument used. Ethical considerations were pointed out. Further, this chapter presented the data analysis processes of the quantitative cycle of the research design.

Chapter 7 presented the analysis and results of the quantitative cycle of the research design and comprehensive discussion of the findings. First, data analysis was performed. Second, characteristics of the participants were outlined. Third, EFA was conducted as a pre-test to examine whether the gathered data supported the latent variable constructs of the conceptual model. Fourth, hypotheses were refined and CFA was used to validate the measurement model. Fifth, SEM was used to evaluate the hypotheses and relationships in the conceptual framework. After examining the

direct path relationships within the core model, the mediating effect of organisational motivation to innovate was tested. The alternative model was discussed. Finally, the answers to the additional open-ended question were discussed and considered as a recommendation for future research.

Chapter 8 presented the discussion of the quantitative cycle of research design. The chapter focused on highlighting the gaps that were addressed through research question. Both theoretical and practical contributions of the thesis were presented and discussed.

Finally, Chapter 9 is a conclusion of the research; it will focus on the structure of the thesis, the overview of research, theoretical and practical contributions of the current study, the limitations of this study and directions for future research.

### **9.3 Overview of the research**

This thesis discussed the history of creativity, its main directions and factors that influence employees' creativity.

The componential model of creativity and innovation in organisations (Amabile, 1988) is one of the leading theories in the creativity field. It focuses on individual/organisational factors that influence employees' creativity. However, according to Amabile and Pratt (2016), one of the limitations of the model is that it does not consider external factors outside the organisation that might influence employees' creativity. Moreover, based on Amabile and Pratt's (2016) revised model, organisational motivation to innovate was given more priority. However, limited studies have investigated the direct and indirect impact of organisational motivation as a summated variable on employees' creativity.

Literature has shown that in recent years, several changes took place in public-sector organisations; adapting creativity as a strategy was among those changes. However, most creativity studies have been investigated in Western countries and in private-sector organisations.

Like other developing countries, the UAE as a federal government and Dubai as a local government, prioritise creativity. Thus, several creativity-related initiatives were

conducted in the Dubai government and its public-sector organisations. Despite promoting creativity within the Dubai government, there were few studies that explored the different factors that influence employees' creative behaviour.

Therefore, recognising the theoretical and contextual gaps, this study aimed to investigate the following research question: What is the impact of 'organisational motivation to innovate' on the relationship between three antecedent factors design— a) the individual creativity components factors, b) determinants of work context factors and c) government regulation and incentives—on the outcome, 'creativity among employees' in Dubai government organisations?

To answer the research question, the thesis was divided into two cycles: a qualitative interviewing method followed by a questionnaire. In Cycle 1 of the research design, interviews were conducted with nine key decision-makers in three Dubai government organisations to obtain a comprehensive summary of Dubai government organisations' motivations related to creativity. In Cycle 2 of the research design, a questionnaire was distributed to 668 employees.

NVivo software was used to analyse the data from Cycle 1 of the research design. The findings provided a more in-depth description regarding creativity conceptualisation, innovation conceptualisation, the relationship between creativity and innovation, application of creativity and factors influencing creativity in Dubai government organisations. The findings of Cycle 1 prompted discussion on the positive impact of government regulation and incentives as an external variable on employees' creativity. This result overcame the limitation of the componential model of creativity and innovation in organisations (Amabile, 1988).

The findings of cycle one lead to the second cycle of the research design; the questionnaire was used to know whether organisational motivation to innovate has a mediating effect on the relationship between those factors and employees' creativity. In addition, an open-ended question was added to recognise the areas of improvement for creativity based on employees' experience.

To test the mediating effects of organisational motivation to innovate, a questionnaire was gathered from 668 respondents. SPSS (version 23) and AMOS (version 23) were used to analyse the gathered data.

The result of mediating effects showed positive indirect effects of the following variables via organisational motivation to innovate on employee creativity: domain-relevant skills, sufficient resources, managerial encouragement, work group support, freedom, challenging work and government regulation and incentives. The result of mediating effects showed no indirect effects of the following variables via organisational motivation to innovate on employees' creativity: creativity-relevant skills and realistic workload pressure.

Regarding the open-ended question, the participants suggested some changes in individual and work factors. Some of these factors were options in the questionnaire, while others were new and unique, such as conducting training programs, adopting new technologies, adequate recruitment in the organisation, focusing on organisational structure, encouraging job rotation and prioritising creativity in schools.

#### **9.4 Theoretical and empirical contributions**

First, the current thesis has extended the componential theory of creativity and innovation in organisations (Amabile, 1988) by:

- 1) Overcoming the theory's limitation and examining the impact of new external variables (government regulation and incentives) on employees' creativity
- 2) Examining empirically the direct and indirect impact of organisational motivation to innovate as a summated variable.

Second, one of the gaps identified in the literature is that although these public-sector reforms have been applied to diverse degrees and with diverse emphasis in recent years (Sluis et al., 2017), no studies have examined how public-sector reforms, such as NPM, have affected organisational outcomes. Thus, the current study has contributed to public-sector literature, as most previous studies that examined factors that influence employees' creativity have focused on the private-sector.

Third, this thesis had three empirical contributions that helped to answer several calls for further research related to creativity literature:

- 1) About how the indirect relationship between creativity and different work context can be explained (e.g., Coelho, Augusto & Lages, 2011). Also, Coelho, Augusto and Lages (2011) called for further research on how an employee's association with colleagues affects creativity, both directly and indirectly.
- 2) Examine the role of contextual, structural and other creativity-relevant factors that can be gathered using established survey instruments such as KEYS for evaluating the creative output of organisations that would be useful in public-sector organisations as suggested by Rangarajan (2008).

Table 9.1 presents a summary of contributions to existing knowledge.

**Table 9.1: Summary of contributions to existing knowledge**

S. N	Contribution	Type of Contribution
1	Extended Amabile's (1988) model by examining the impact of new external variable (government regulation and incentives) on employees' creativity	Theoretical
2	Extended Amabile's (1988, 1997) model by examining the direct and indirect impact of organisational motivation to innovate as a summated variable	Theoretical
3	Filled the gap by investigating how new public-sector organisations perform in non-Western regions	Theoretical
4	Answered the call for further research about how the indirect relationship between creativity and different work context can be explained	Empirical
5	Examined the impact of contextual, structural and other creativity-relevant factors, which can be gathered using established survey instruments such as KEYS, on the creative output of organisations	Empirical

## 9.5 Practical contributions

The findings of this thesis have significant contextual, managerial and policy implications.

### **9.5.1 Contextual implications**

First, most creativity theories have been established in Western countries, particularly in the US (Niu & Kaufman, 2013). Thus, several authors agreed that Oriental and Western creativity points of view are different (e.g., Lubart, 1990; Yamada, 1991; Shalley, Zhou & Oldham, 200). The current thesis indicates that Western creativity theories, such as the componential model of creativity and innovation in organisations (Amabile, 1988) cannot be used in Asian countries, such as the UAE, specifically in the public-sector context. The results of the direct relationships between individual and work context factors with employees' creativity in this study were different than those of studies conducted in Western countries. Thus, this study examined the theory in a new context with regards to employees' creativity.

Second, limited creativity studies have been conducted in the UAE context. Thus, this study has filled this contextual gap and is considered among one of the first studies to be conducted in UAE, particularly in the context of the Dubai government. Moreover, previous studies have investigated only work climate factors (Politis, 2005; Politis & Politis, 2010), while another study examined the impact of self-leadership on the dimensions of entrepreneurial orientation, creativity and productivity (Politis, 2015). Therefore, this thesis examined three groups of factors: individual, work and external factors. Thus, a comprehensive understanding on the mediating impact of organisational motivation to innovate on the relationship between three different kinds of different factors and employees' creativity was provided. Finally, this thesis can be considered a foundation for other researchers interested in the creativity field, especially in the UAE context. Therefore, managers must conduct best benchmark with some pioneer organisations to update the current work context factors.

Third, as discussed in Chapter 2, the existing literature has shown mixed results regarding the relationship between different factors and employees' creativity. The results of the current study are significant because they provide further evidence for the nature of the relationship in the Dubai government context.

### **9.5.2 Managerial implications**

This thesis provided useful implications for managers who prioritise enhancing employees' creativity in the workplace.

First, organisational motivation to innovate was perceived as a significant mediating factor. This finding provides an impetus for further studies to provide conclusive evidence regarding how the cultural/regional context interacts with key organisational processes, such as organisational motivation to innovate to affect employees' creativity and other related outcomes at the individual and organisational level. Hence, managers should realise that without sufficient organisational motivation to innovate, enhancing individuals' creativity cannot happen. Therefore, managers need to ensure that they inculcate a constructive, creative climate through strategies and obtain maximum potential advantages by adopting organisational policy that enhances creativity.

Second, managers must consider changes that should be involved when considering employees' creativity. According to Cumming and Oldham (1997), individual preferences, main concerns and problem-solving styles might change over time, which necessitates adjustments to guarantee the appropriate fit between employees' creative potential and their work climate.

Third, managers and decision-makers should consider creativity expenditure as a long-term investment that will benefit the organisations. As a result, they should search for the means to create a creative climate in which employees develop and grow their creative competencies. Additionally, there is a need to establish strategies that value candidates who possess creativity skills and abilities and who are fully involved in their work-related tasks and regard them as a part of their human capital.

Fourth, the achieved results suggest that managers must realise that it is not sufficient for the organisations to employ creative people and expect creative performance. One of manager's main roles is encouraging the availability of different mechanisms related to organisational motivation to innovate. These results showed the significant role of organisational motivation to innovate on the relationship between different factors in promoting employees' creativity.

Thus, organisations that aim to develop employees' creativity should consider these points when planning for creative projects because employee characteristics and work context factors will not fulfil the required goals unless organisational motivation to innovate is present.



### **9.5.3 Policy implications**

First, Berman and Kim (2010, p. 641) defined creativity management as a new management concept in public administration, which increases creativity and initiative. Therefore, to develop more creative employees, local and federal governments in the UAE should establish creativity management mechanisms in their public organisations to develop and monitor all employee creativity issues. A mechanism that can be assessed by key performance indicators and survey questionnaires related to creativity to assess the current situation and provide solutions to overcome existing limitations on creativity.

Second, there is a need to generate and maintain a good fit between government regulation and incentives issued by both federal and local governments with organisational mechanisms related to motivating employees' creativity in public-sector organisations. The results showed organisational motivation to innovate mediated the relationship between government regulation and incentives and employees' creativity. Therefore, both federal and local governments in the UAE, while issuing government regulation and incentives related to creativity, should ensure that they develop the current creativity mechanisms in public-sector organisations to improve employees' creativity.

Table 9.2 presents a summary of practical contributions.

**Table 9.2: Summary of practical contributions**

S. N	Contribution	Type of Contribution
1	Provided different points of views related to factors that influence employees' creativity that emerge in other non-Western countries, Asian region and Dubai government in particular.	Contextual
2	Among one of the first creativity studies conducted in the Dubai government context.	Contextual
4	Demonstrated the nature of the relationship between different factors and employees' creativity in Dubai government context.	Contextual
5	This thesis can be considered a foundation research for other researchers who are interested in creativity field, especially in the UAE context.	Contextual
6	The research will assist managers to recognise the role of organisational motivation to innovate in enhancing employees' creativity at work place.	Managerial
7	Managers should realise that change management and adapting best practices should be involved while considering employees' creativity.	Managerial
8	Both federal and local governments in the UAE while issuing government regulation and incentives related to creativity should focus on ensuring that the current innovation mechanisms in public-sector organisations are aligned with OC and climate to improve employees' creativity.	Policy
9	Federal and local governments should request that their public organisations develop and monitor certain creativity management mechanisms that can be assessed by key performance indicators and survey questionnaires related to creativity that help assess the current situation and provide solutions.	Policy

## 9.6 Methodological contribution

Conducting a mixed method approach to address the research question is an additional contribution of the present research. Leech and Onwuegbuzie (2009) stated that the mixed methods approach is used to answer questions that could not be addressed by one paradigm alone.

Zhou and Shalley (2010) provided evidence that most studies in creativity literature have used quantitative methodology to address their research questions (e.g., Amabile & Conti, 1999; Bommer & Jalajas, 2002; Politis, 2005; Mostafa, 2005; Ensor, Pirrie & Band, 2006; Politis & Politis, 2010; Luring & Selmer, 2013; Birdi, Leach & Magadley, 2016; ElMelegy et al., 2016), with few studies opting for qualitative methods (e.g., Coveney, 2008; Horng & Lee, 2009; Hvidsten & Labraten ,2013; Kruyen & Van Genugten, 2017). Limited studies have used a mixed method approach (such as Moultrie and Young [2009], which was conducted in the UK).

Table 9.3 summarises the methodological contribution.

**Table 9.3: Summary of methodological contribution**

S. N	Contribution	Type of Contribution
1	Mixed methods approach was used to address the research question	Methodological

## 9.7 Limitations and directions for future research

There are several limitations related to the current thesis

- 1) The current study discussed the notion of creativity as a unitary construct related to idea generation (Amabile, 1996, p. 1), while there are some studies that have examined and compared different types of creativity and their influencing factors, such as radical and incremental creativity (Madjar, Greenberg & Chen, 2011). According to Luring and Selmer (2013), there is a diverse extent of creativity in the workplace; incremental creativity, which ranges from small changes to work processes, and radical creativity, which focuses on key breakthroughs in science and technology. Thus, there is a need for future studies that examine such types of creativity and their influencing factors.
- 2) Intrinsic task motivation, a type of individual factor component based on Amabile's (1988) model, was removed from the model during CFA. The reason was that the construct was retained with only two items. Thus, there is a need for other studies that include intrinsic task motivation to investigate the individual factors.

- 3) This study was conducted in public-sector organisations that apply NPM principles. There is need for other empirical studies to be conducted in different countries' public-sector organisations to generalise the results.
- 4) The current study focused only on the individual level. Amabile (1997) stated that the model can be applied to individuals and small teams. According to Nijstad and De Dreu (2002), groups are significant building blocks in the workplace and understanding what hinders or supports creativity and group innovation is of utmost importance. Moreover, Shalley, Zhou and Oldham (2004) suggested, as a direction for future research, to examine the conditions that influence team creativity. Hence, there is a need to investigate the same model using a different unit of analysis, such as a team, to gain a better understanding of factors that influence group creativity.
- 5) According to Raudeliūnienė, Meidutė and Martinaitis (2012), there are three major groups of factors that influence creativity: individual, organisational and external. As shown, most theories and studies have focused on individuals and organisations (e.g., Amabile, 1983; Woodman, Sawyer & Griffin, 1993; Martins & Terblanche, 2003). Few studies have focused on the influence of external factors on employees' creativity, such as family and friends (Madjar, Oldham & Pratt, 2002), supportive family (Horng & Lee, 2009), and family and school (Yeh, 2004). The current study contributed to the literature by investigating the impact of government regulation and incentives as an external factor to organisations. However, there remains a need to examine other external factors, such as NC, economy, inflation, customers, globalisation and public opinion.
- 6) The study was conducted within organisations that are categorised as large Dubai government organisations. There are other two kinds of organisations in the Dubai public sector in Dubai: small and medium organisations. Thus, there is a need to investigate organisations of all sizes.
- 7) The findings of the open-ended question recommended a focus on training, new technologies, adequate recruitment in the organisation and the prioritising of creativity in schools. These suggestions proposed new directions for future research; there is need to integrate other work factors using the KEYS questionnaire, such as technology and HRM.

- 8) The present study has focused only on creativity as an outcome, while The componential theory of creativity and innovation in organisations developed by Amabile (1988) includes also innovation, thus there is need for future research to examine factors that influence innovation in NPM.

## **9.8 Summary**

This thesis aimed to answer the following research question: What is the impact of ‘organisational motivation to innovate’ on the relationship between three antecedent factors—a) the individual creativity components factors, b) determinants of work context factors and c) government regulation and incentives—on the outcome, ‘creativity among employees’ in Dubai government organisations? The research was able to fulfil the objective and answer the above question.

This thesis has made several valuable contributions as highlighted above: theoretical, empirical, contextual and methodological. Some limitations have been highlighted and directions for future research have been suggested.

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# Appendices

## Appendix 1: Ethics Approval Letter cycle 1 of research design



APPROVAL LETTER  
In reply please quote: HE14/430

13 December 2014

Dr Payyazhi Jayashreei  
PO Box 8352  
DUBAI - UAE

Dear Dr Jayashreei,

Thank you for your response dated 9 December 2014 to the HREC review of the application detailed below. I am pleased to advise that the application has been approved.

Ethics Number: HE14/430  
Project Title: Working title: Measurement of the impact of creativity training programs in the UAE government sector  
Researchers: Dr Payyazhi Jayashreei, Dr Scott Fargher, Ms Mardeya Al Baloochi  
Approval Date: 11 December 2014  
Expiry Date: 10 December 2015

The University of Wollongong/Illawarra Shoalhaven Local Health District Social Sciences HREC is constituted and functions in accordance with the NHMRC *National Statement on Ethical Conduct in Human Research*. The HREC has reviewed the research proposal for compliance with the *National Statement* and approval of this project is conditional upon your continuing compliance with this document.

Approval by the HREC is for a twelve month period. Further extension will be considered on receipt of a progress report prior to expiry date. Continuing approval requires:

- The submission of a progress report annually and on completion of your project. The progress report template is available at <http://www.uow.edu.au/research/ethics/human/index.html>. This report must be completed, signed by the researchers and the appropriate Head of Unit, and returned to the Research Services Office prior to the expiry date.
- Approval by the HREC of any proposed changes to the protocol including changes to investigators involved
- Immediate report of serious or unexpected adverse effects on participants
- Immediate report of unforeseen events that might affect continued ethical acceptability of the project.

If you have any queries regarding the HREC review process, please contact the Ethics Unit on phone 4221 3386 or email [rso-ethics@uow.edu.au](mailto:rso-ethics@uow.edu.au).

Yours sincerely



Dr Mark Rix  
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Human Research Ethics Committee

Ethics Unit, Research Services Office  
University of Wollongong NSW 2522 Australia  
Telephone (02) 4221 3386 Facsimile (02) 4221 4338  
Email: [rso-ethics@uow.edu.au](mailto:rso-ethics@uow.edu.au) Web: [www.uow.edu.au](http://www.uow.edu.au)



## PARTICIPANT INFORMATION SHEET

### TITLE:

The measurement of impact of creativity training programs in the UAE government sector

### PURPOSE OF THE RESEARCH

This is an invitation to participate in a study conducted by researchers at the University of Wollongong in Dubai. The project has the following aims:

**First**, to develop a framework that focuses on the impact of creativity training programs in the UAE government sector in order to help both employees and organizations to maximize the benefits of this kind of formal training.

**Second**, to identify the specific work environment factors that influence idea generation and innovation among employees who have undergone creativity training programs.

### INVESTIGATORS

1. Mardeya AlBalooshi

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#### METHOD AND DEMANDS ON PARTICIPANTS

If you choose to be included, you will be asked to participate in a personal interview by the chief investigator, Mardeya Al Balooshi. On this visit the researcher will conduct a one hour interview on various aspects related to creativity training programs, specifically, the strategic reasons for introducing creativity training programs, in addition to few questions related to content, design, delivery and evaluation.

Typical questions in the interview include:

Q1- (Background and demographics of the respondent) Confirm the respondents' position in the organization )

Q2- In the context of your organization what do you mean by "creativity"?

Q3- In the context of your organization what do you mean by "innovation"?

Q4- In your opinion what is the relationship between creativity and innovation?

Q5-What type of support is made available to the participants to enhance their creativity ? (Probe: Supervisory support, peer support, work conditions influence employees creativity ?)

Q6- Are there any challenges in that employees face that impede their creativity? If so, what are they? How are you addressing these challenges? (probe: transfer of results)

Q7-Are there relevant factors you would like to add that we might not have covered?

#### POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS

Apart from the one hour of your time for the interview, we can foresee no risks for you. Your involvement in the study is voluntary and you may withdraw your

participation from the study at any time and withdraw any data that you have provided to that point. Refusal to participate in the study will not affect your relationship with the University of Wollongong in Dubai, UAE. However; you will not be able to withdraw your data, should you wish to withdraw your participation in the study after you've completed the interview.

#### FUNDING AND BENEFITS OF THE RESEARCH

This study is not funded by any funding body and is being undertaken by Mardeya Al Balooshi as partial fulfillment for her PhD degree.

The research will have both theoretical and practical contributions. The theoretical contributions are to extend the previous literature in creativity training by examining its impact in a new region. Additionally this study might be considered foundation research for other researchers who are interested in this field especially in the UAE. Also it will contribute to the knowledge by formulizing a framework that determines the required conditions to enhance employees' creativity effectiveness.

While practical implications will inform the practitioners and the decision makers about the significance of work situational factors to develop employees' idea generation and idea implementation (innovation).

#### ETHICS REVIEW AND COMPLAINTS

This study has been reviewed by the Social Sciences Human Research Ethics Committee of the University of Wollongong in Dubai. If you have any concerns or complaints regarding the way this research has been conducted you can contact the UOW Ethics Officer on (02) 4221 3386 or email [rso-ethics@uow.edu.au](mailto:rso-ethics@uow.edu.au).

Thank you for your participation in this study



## CONSENT FORM

### RESEARCH TITLE

#### **The measurement of impact of creativity training programs in the UAE government sector**

I have been given information about this research related to 'the measurement of impact of creativity training programs in the UAE government sector' and have discussed the research project with Mardeya Al Balooshi who is conducting this research as part of her PhD degree, supervised by Dr. Payyazhi Jayashree and Dr. Scott Fargher in the Faculty of Business and Management at the University of Wollongong in Dubai.

I have been advised of the potential risks, which are none in this case, and burdens associated with this research, which include up to one hour of my time for the face to face interview to be conducted by the researcher. Apart from the one hour of my time for the interview, the researchers can foresee no risks for me. In addition, I have been informed that I will not be able to withdraw my data, should I wish to withdraw my participation in the study after I have completed my interview. I have also had an opportunity to ask Mardeya Al Balooshi any questions that I may have about the research and my participation in the same.

I understand that my participation in this research is voluntary, I am free to refuse to participate and I am free to withdraw from the research at any time. My refusal to participate or withdrawal of consent will not affect *my treatment in any way /my relationship with the University of Wollongong*

If I have any enquiries about the research, I can contact

Mardeya AlBalooshi at [REDACTED]

Dr. Payyazhi Jayashree at [REDACTED]

Dr. Scott Fargher at [REDACTED]

If I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on 4221 3386 or email [rso-ethics@uow.edu.au](mailto:rso-ethics@uow.edu.au).

By signing below I am indicating my consent for a one hour face to face semi-structured interview wherein I will be required to state my opinion on a number of important issues related to the measurement of creativity training programs in the UAE government sector.

(please tick):

Consent to audio record the interview

I understand that the data collected from my participation will be used for *purpose (eg thesis, journal publication, etc)*, and I consent for it to be used in that manner.

Signed Date

...../...../.....

Name (please print)

.....

#### Appendix 4: Interview protocol

Q1- (Background and demographics of the respondent) Confirm the respondents' position in the organization )

Q2- In the context of your organization what do you mean by "creativity"?

Q3- In the context of your organization what do you mean by "innovation"?

Q4- In your opinion what is the relationship between creativity and innovation?

Q5- What type of support is made available to the participants to enhance their creativity ? (Probe: Supervisory support, peer support, work conditions influence employees creativity ?)

Q6- Are there any challenges in that employees face that impede their creativity? If so, what are they? How are you addressing these challenges? (probe: transfer of results)

Q7- Are there relevant factors you would like to add that we might not have covered?

## Appendix 5: Coding, main themes and main layers used in the present study

Senior managers- phase 1 (NVivo 11).nvp - NVivo Pro

FILE HOME CREATE DATA ANALYZE QUERY EXPLORE LAYOUT VIEW

Go Refresh Open Properties Edit Paste Copy Merge Cut Copy Paste Merge B I U A Format Paragraph Styles Select Text Region Find Replace Delete Spelling

Workspace Item Clipboard Format Paragraph Styles Editing Proofing

**Nodes** Look for Search In Nodes Find Now Clear Advanced Find

Nodes Cases Relationships Node Matrices Sources Nodes Classifications Collections Queries Reports Maps Folders

**Nodes**

Name	Sources	References	Created On	Created By	Modified On	Modified By
Creativity and innovation in UAE public sector		7	43 3/10/2014 7:34 PM	S	7/11/2016 10:35 PM	S
Creativity conceptualizaion		0	0 4/09/2014 2:00 PM	S	29/01/2015 9:53 PM	S
Idea development		1	3 24/09/2014 8:47 PM	S	14/01/2018 1:53 PM	S
Idea generation		1	1 4/09/2014 2:05 PM	S	21/02/2015 6:06 PM	S
Novelty		9	14 14/09/2014 8:37 PM	S	21/02/2015 6:33 PM	S
Examples of creative projects		9	76 4/09/2014 3:14 PM	S	31/10/2016 6:39 PM	S
Examples of innovative projects		8	54 4/09/2014 3:23 PM	S	2/11/2016 5:10 PM	S
Factors influence creativity and innovation in Dubai Government Organizaions		0	0 24/10/2016 10:40 PM	S	24/10/2016 10:40 PM	S
Government regulation and incentive		9	41 24/10/2016 10:42 PM	S	8/11/2016 10:21 PM	S
Individual facors		8	25 24/10/2016 10:40 PM	S	9/11/2016 12:52 PM	S
Organizaional factors		0	0 24/10/2016 10:42 PM	S	24/10/2016 10:42 PM	S
Postitive factors		9	100 24/10/2016 10:47 PM	S	26/10/2017 11:49 AM	S
Innovation conceptualization		0	0 4/09/2014 2:29 PM	S	14/01/2018 1:58 PM	S
Idea implementation		6	6 4/09/2014 2:39 PM	S	20/10/2014 9:08 AM	S
Improvement of existing ideas		6	11 4/09/2014 2:31 PM	S	14/01/2018 1:56 PM	S
Something new at workplace		3	3 14/09/2014 8:55 PM	S	14/01/2018 1:58 PM	S

## Appendix 6: Noding of government regulation and incentives as external factor influencing employees creativity at workplace

Senior managers- phase 1 (NVivo 11).nvp - NVivo Pro

FILE HOME CREATE DATA ANALYZE QUERY EXPLORE LAYOUT VIEW

Workspace Item Clipboard Format Paragraph Styles Editing Proofing

Nodes

Look for Search In Nodes Find Now Clear Advanced Find

Nodes

Name	Sources	Referen
Creativi	7	43
Creativi	0	0
Idea	1	3
Idea	1	1
Nov	9	14
Exempl	9	76
Exempl	8	54
Factors	0	0
Gov	9	41
Indi	8	25
Org	0	0
P	9	100
Innovati	0	0
Idea	6	6
Imp	6	11
So	3	3

Government regulation and in

Reference 1 - 0.80% Coverage

whether at the governmental level

**Interviewee: Yes,**

**Respondent 2:** Headed by, aaaa, Sheikh Khalifa, aaah, the President of the country and His Highness Sheikh Mohammed bin Rashid Al Maktoum who are always calling for the creativity, the renewal, the innovation, and not to relying on the routine, aaaaa, If at both the institutional and the local government level, Dubai Award includes criteria of the innovation and creativity which make all people start thinking of these

Reference 2 - 0.48% Coverage

let's say one of the reasons is for development. These people attend special training programs for the innovation, one of the government's requirements is that they should be innovative, one of the Dubai Government Excellence Program requirements, and basically we want to grow up

<Internals\Respondent 3> - \$ 4 references coded [2.64% Coverage]

Reference 1 - 0.65% Coverage

Even in the aspect, the public aspect has importance, but it is a matter of culture, culture, culture,

In Nodes Code At Enter node name (CTRL+Q)

**Appendix 7:**Personal profiles of Cycle1/ Qualitative interviews participants

<b>Participants</b>	<b>Organizations fictitious names</b>	<b>Gender</b>	<b>Nationality</b>	<b>Level of Education</b>	<b>Profession category</b>
Respondent 1	Organization 1	Male	U.A.E	Masters degree in Total Quality Management	Leader ( Director of business process and development)
Respondent 2	Organization 1	Male	U.A.E	License in Law	Leader (Deputy director of the General Administration of Training_
Respondent 3	Organization 1	Male	U.A.E	PhD degree - Law	Leader ( Director of the legal and police management applications )
Respondent 4	Organization 2	Male	U.A.E	License in Law	Leader(Director of human resources department)
Respondent 5	Organization 2	Male	U.A.E	License in Law	Supervisor (Head of personnel affairs section)
Respondent 6	Organization 2	Male	U.A.E	Masters degree in Total Quality Management	Supervisor(Head of human resources planning)
Respondent 7	Organization 3	Male	U.A.E	Bachelor in Human Recourses management	Supervisor(Training specialist)
Respondent 8	Organization 3	Male	Egypt	Masters degree in Human Resource Management	Supervisor (Senior training specialist)
Respondent 9	Organization 3	Male	Jordan	Masters degree in Human Resources Management	Supervisor(Senior training specialist)



## Appendix 8: A letter of approval received from CCL for using KEYS questionnaire

### Letter of Approval for Using KEYS

Dear Mardeya,

I am writing to inform you that Teresa Amabile, Ph.D., and the Center for Creative Leadership (CCL) have approved your proposal to use KEYS in your research. Specifically, we are granting you permission to use the item content from KEYS in your own survey to collect data for your study. The item content for KEYS can be found in the attached sample report.

Please note that there are several requirements for using KEYS in your research.

- You should have procedures in place to protect the content of KEYS from use by others, as well as the confidentiality of any data collected.
- Unless you receive permission from Teresa M. Amabile, Ph.D., and the Center for Creative Leadership, you may not alter the KEYS items in any way. You may, however, use only one or more scales rather than all KEYS scales.
- On all printed and electronic surveys using KEYS item content, you must include the following copyright information for those items: “©1987, 2009 Teresa M. Amabile, Ph.D. and Center for Creative Leadership. All Rights Reserved.” You must also indicate that this item content is reprinted in the survey with our permission. Please use this wording: “Items from KEYS are reprinted, for research purposes only, with the permission of Teresa M. Amabile, Ph.D., and the Center for Creative Leadership.”
- Once you have collected data, we ask that you share your data with CCL. These data will be stored internally and will potentially be aggregated with CCL data for the purpose of conducting additional, psychometric evaluations of the KEYS assessment. Please send your data in SPSS format to Dr. Phillip Braddy at [REDACTED]
- If you use data collected on items from KEYS in your thesis, dissertation, or any other manuscript, you must (a) include a line or footnote saying that KEYS items were used with the permission of Teresa M. Amabile, Ph.D., and the Center for Creative Leadership; and (b) provide the appropriate citation for KEYS in your “measures” section. Please use the following two citations: (1) Amabile, T. M. (1995). *KEYS: Assessing the climate for creativity*. Greensboro, NC: Center for Creative Leadership; and (2) Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 39, 1154-1184.

- Finally, please note that you should share any papers (theses, dissertations, conference papers, or publications) using KEYS data with CCL and with Dr. Teresa Amabile. Please send copies of papers for CCL to Dr. Phillip Braddy [REDACTED] Dr. Amabile's email address is: [REDACTED]

In closing, I would like to congratulate you for obtaining approval to use KEYS in your study. Good luck with your research!

Sincerely,

Phillip W. Braddy, Ph.D.

Psychometrician  
Center for Creative Leadership  
One Leadership Place  
Greensboro, NC 27410  
336.286.4407 (office)  
336.286.4434 (fax)



## **PILOT STUDY PARTICIPANT INFORMATION SHEET**

### **TITLE:**

Measurement of impact of creativity training programs in the UAE government sector

### **PURPOSE OF THE PILOT STUDY**

This is an invitation to participate in a pilot study phase conducted by researchers at the University of Wollongong in Dubai. The project has the following aims:

First, contribute to scholarly literature related to creativity context and creativity training by investigating new variable in a new region.

Second, to investigate the influence of individual factors, work context and external factors that facilitate employees creativity in the UAE government sector.

*Please be noted that this is a primary pilot study which is conducted prior to main study. The pilot study will help the investigators to confirm that instructions are sufficient, the wording of the survey is appropriate and identify any other potential improvements that may be required.*

### **INVESTIGATORS**

1. Mardeya AlBalooshi  
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2. Dr. Payyazhi Jayashree  
Associate Professor, Faculty of Business  
University of Wollongong in Dubai  
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Email: [REDACTED]

Web: [www.uowdubai.ac.ae](http://www.uowdubai.ac.ae)

3. Dr. Scott Fargher

P.O.Box 72229, Dubai, UAE

Email: s [REDACTED]

Web: <http://www.mbrsg.ae/>

#### METHOD AND DEMANDS ON PARTICIPANTS

If you choose to be included, you will be asked to spare up to one hour of your time for completing the questionnaires. This attached questionnaire will require participants' to identify factors that facilitate or impede creativity. Completion of the questionnaire represents tacit consent and responses can be used in the research. By completing the survey, you are consenting to participate in the research because it is anonymous, data and information cannot be withdrawn after completion.

#### POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS

Apart from the one hour of your time, we can foresee no risks for you. To ensure anonymity

- 1- I have selected you as a potential participant from a list of staff provided by your HR.
- 2- You have been individually contacted by me only via email or phone call.
- 3- You will be requested to complete a paper copy of the questionnaire emailed to you and will need to print and complete the questionnaire, at your place of work (or any convenient location), at a time convenient to you.
- 4- You will not be identified in the subsequent publication by name or designation .

Your involvement in the study is voluntary and you may withdraw your participation from the study at any time and withdraw any data that you have provided to that point. Refusal to participate in the study will not affect your relationship with the University of Wollongong in Dubai, UAE. However; you will not be able to withdraw your data, should you wish to withdraw your participation in the study after you've completed the questionnaire.

#### FUNDING AND BENEFITS OF THE RESEARCH

This study is not funded by any funding body and is being undertaken by Mardeya Al Balooshi as partial fulfillment for her PhD degree.

The research will have both theoretical and practical contributions. The theoretical contributions are to extend the Componential Theory of Creativity and Innovation in Organizations by examining its impact several new variables (Government regulation and incentives) on employees' creativity in a new context. Additionally this study might be considered foundational research for other researchers who are interested in this field especially in the UAE. It will also contribute to knowledge by formalizing a framework that determines the required conditions to enhance employees' creativity and innovation. Furthermore, practical implications will inform relevant practitioners and decision makers about the significance of different factors in developing and nurturing employees' creativity.

If publication occurs, participants will be informed by email where they can access a copy of the published material.

## RESULTS


The results of a pilot study can inform the researcher about the efficacy process and outcomes. Moreover, the result of the pilot study will help to make any necessary improvements to the design of the study and/or the research process which will be documented in the main study. Alternatively, in the event that there are no changes to the design or the survey resulting from the pilot study this will also be documented and reported. The anonymous pilot study data will be analyzed and summarized as part from the main study. However, the main study will include a new set of participants who have not been exposed to the study before.

## ETHICS REVIEW AND COMPLAINTS

This study has been reviewed by the Social Sciences Human Research Ethics Committee of the University of Wollongong in Dubai. If you have any concerns or complaints regarding the way this research has been conducted you can contact the UOW Ethics Officer on (02) 4221 3386 or email [rso-ethics@uow.edu.au](mailto:rso-ethics@uow.edu.au).

Thank you for your participation in this study

Page 1 of 7(00)-CG- PS



## استبيان Survey

تقييم العوامل التي تؤثر على إبتكار الموظفين العاملين في القطاع الحكومي بإمارة دبي

### Assessing factors that influence creativity among employees

in Dubai government organizations

شكراً لك على مشاركتك في هذا الاستبيان

يرجى التأكد من الإجابة على جميع الأسئلة

يرجى اختيار الإجابة المناسبة بوضع علامة (X) عند الإجابة على أسئلة المعلومات العامة.

Please select the appropriate (X) when answering the background information questions.

**Part (A) : Demographic Information** الجزء (أ) : المعلومات الديموغرافية

**1. Gender:** 1. الجنس

1. Male 1. ذكر
2. Female 2. أنثى

**2. Are you a UAE citizen?** 2. هل أنت من مواطني دولة الإمارات العربية المتحدة؟

1. Yes 1. نعم
2. No 2. لا

If no, please specify your nationality \_\_\_\_\_ إذا كانت إجابتك بلا يرجى ذكر الجنسية \_\_\_\_\_

**3. What is your profession category?** 3. ما هي درجةك الوظيفية؟

1. Leadership category 1. الفئة القيادية
2. Supervisory category 2. الفئة الإشرافية
3. Support category 3. فئة الدعم

**4. What is the highest educational qualification you hold?** 4. ما هو أعلى مؤهل تعليمي حصلت عليه؟

1. Postgraduate degree 1. الدراسات العليا
2. Bachelor's degree 2. الشهادة الجامعية
3. Secondary school 3. الثانوية العامة
4. Other (please state) \_\_\_\_\_ 4. أخرى (يرجى التحديد) \_\_\_\_\_

**5. How many years of experience do you have?** 5. كم تبلغ عدد سنوات خبرتك؟

1. Less than 1 year 1. أقل من سنة
2. 1 - 10 years 2. من سنة 1 إلى أقل من 10 سنوات
3. 11- 20 years 3. من 10 سنوات إلى أقل من 20 سنوات
4. Above 20 years 4. أكثر من 20 سنة
5. 5.

**6. In which functional area of the department are you employed?** 6. في أي مجال تعمل؟

1. Administration 1. الإدارة
2. Human Resources 2. الموارد البشرية
3. Customer Service 3. خدمة العملاء
4. Finance/Accounting 4. مالية /محاسبية
5. Other (please state) \_\_\_\_\_ 5. غير ذلك ( يرجى التحديد ) \_\_\_\_\_

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Please select the appropriate number with 3 (٣) to indicate the level of your agreement or disagreement with the following statements on a scale of 1 to 4, where  
 1 = Never, 2 = Sometimes, 3 = Often, and 4 = Always

الرجاء اختيار العدد المناسب بوضع علامة (٣) للإشارة إلى مستوى الاتفاق أو الاختلاف مع البيانات التالية على مقياس من 1 إلى 4، حيث 1 = أبداً، 2 = أحياناً، 3 = غالباً، و 4 = دائماً

Part (C) :Questions related to the specific individual factors that influence employees creativity

الجزء (ب) : الأسئلة المتعلقة بالعوامل الشخصية التي تؤثر على ابتكار الموظفين

1 Never أبداً	2 Sometimes أحياناً	3 Often غالباً	4 Always دائماً	أسئلة من التحفيز الذاتي للمهام Motivation التحفيز الذاتي أداء للمهام من : الرغبة التي يربى للموظفين وظائفهم مشروعة، أصالة، ومن سوا ذلك. Intrinsic Motivation: The extent to which employees view their jobs as interesting, enjoyable, boring, and unpleasant.	*
				My job is interesting. وظيفتي مشروعة.	7
				My job is enjoyable. وظيفتي ممتعة.	8
				My job is boring. وظيفتي مملة.	9
				My job is unpleasant. وظيفتي غير سارة.	10

1 Never أبداً	2 Sometimes أحياناً	3 Often غالباً	4 Always دائماً	أسئلة من وضوح الإجراءات Process clarity: The extent to which employees perceive clarity concerning the processes involved in their jobs. أنا أعرف كيف التزم والى أداء مهام وظيفتي .	*
				I know how to divide my time among the tasks required of my job. أنا أعرف كيف أوزن وقتي بالعمل .	11
				I know how to schedule my work day. أنا أعرف كيف أصنع جدول يومي بالعمل .	12
				I know how to determine the appropriate procedures for each work situation. أنا أعرف كيف أخط الإجراءات المناسبة لكل مهمة بعيني .	13
				I know the procedures I use to do my work correct and proper. أنا أعرف الإجراءات التي يمكنني استخدامها لأقوم بعيني بشكل صحيح ومناسب.	14
				Considering all my work tasks, I know the best ways to do those tasks. بالاطلاع بمن الأعمال جميع مهام عملي، أنا أعرف أفضل الطرق للقيام بهذه المهام.	15

1 Never أبداً	2 Sometimes أحياناً	3 Often غالباً	4 Always دائماً	أسئلة من فعالية الابتكار الذاتي Creative-self efficacy : perceptions related specifically to being creative in one's work فعالية الابتكار الذاتي من: انطباعات الشخص من كونه مبتكر بمهارة على وجه التحديد.	*
				I feel that I am good at generating novel ideas. أشعر أنني جيد توليد الأفكار الجديدة.	16
				I have confidence in my ability to solve problems creatively. أنا بطرتي في حل المشكلات بطريقة مبتكرة.	17
				I have a knack for further developing the ideas of others. أصبح بمرارة بواسطة تطوير أفكار الآخرين .	18

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الجزء (ج) : الأسئلة المتعلقة بعوامل بيئة العمل التي تؤثر على ابتكار الموظفين  
 Part (D) : Questions related to the specific work environment factors that influence employees' creativity

1	2	3	4	الأسئلة المتعلقة بحرية العمل Questions related to Freedom الحرية هي: اتخاذ قرار بشأن القيام بعمل ما أو كيفية القيام به، أو الشعور بالشخص بسلطانا على عمله. Freedom: Deciding what work to do or how to do it; a sense of control over one's work	★
Never أبداً	Sometimes أحياناً	Often غالباً	Always دائماً		
				أنا أتمتع بحرية اتخاذ قراراتي. I have the freedom to decide how I am going to Carry Out My Projects.	19
				أنا أشعر بقليل من الضغط لمتابعة تعليمات شخص آخر بشأن كيفية أنني أعمل. I feel little Pressure to meet someone else's specifications in how I do my work.	20
				أنا أتمتع بحرية اختيار المشروع(ات) التي أريد القيام بها. I have the freedom to Decide What Project(s) I am going to do.	21
				أنا أشعر بسلطانا على عملي وأفكر في بيئتي عملي اليومية. In my daily work environment, I feel a Sense of Control over my own work and my own ideas.	22

1	2	3	4	الأسئلة المتعلقة بالعمل التحدي Questions related to Challenging Work التحدي في العمل هو: إحساس الفرد بالقيام بأهم المهام والتحديات الجديدة التي أفيها عملي. Challenging Work: A sense of having to work hard on challenging tasks and important projects.	★
Never أبداً	Sometimes أحياناً	Often غالباً	Always دائماً		
				أشعر أنني أعمل على مشاريع مهمة. I feel that I am working on Important Projects.	23
				المهام التي أعملها تحدي. The Tasks in my work are Challenging.	24
				المهام التي أعملها تتطلب العمل بجد. The Tasks in my work call out the Best in Me.	25
				لدي المؤسسة حاجة ملحة لإكمال عملي الحالي بنجاح. The Organization has an urgent Need for successful completion of the work I am now doing.	26
				أشعر بالتحدي في عملي الحالي. I feel Challenged by the Work I am currently doing.	27

1	2	3	4	الأسئلة المتعلقة بتشجيع المدير Questions related to Managerial Encouragement التشجيع الإداري هو: المسؤول الذي يحفز الناس جيداً بحديثه به في العمل، ويحدد الأهداف بشكل مناسب، ويؤيد إنجازات العمل، ويظهر التقدير، ويظهر الثقة في إنجازات العمل. Managerial Encouragement: A boss who serves as a good work model, sets goals appropriately, supports the work group, values individual contributions, and shows confidence in the work group	★
Never أبداً	Sometimes أحياناً	Often غالباً	Always دائماً		
				توقعات مسؤولي واضحة بشأن عملي. My Boss's Expectations for my project(s) are Clear.	28
				مسؤولي يخطط جيداً. My Boss Plans well.	29
				مسؤولي يحدد أهدافي بشكل واضح. My Boss clearly Sets overall Goals for me.	30
				مسؤولي يتواصل بشكل جيد مع مجموعتي. My Boss Communicates well with our work group.	31
				مسؤولي يتمتع بمهارات ممتازة جداً. My Boss has good Interpersonal Skills.	32
				مسؤولي يظهر الثقة بمجموعتي. My Boss shows Confidence in our work group.	33
				مسؤولي يقدّر المساهمات الفردية في المشاريع. My Boss Values individual Contributions to project(s).	34
				مسؤولي يحفز الناس بحديثه به في العمل. My Boss serves as a good Work Model.	35
				مسؤولي منفتح على أفكارنا. My Boss is Open to new Ideas.	36
				مسؤولي يؤيد مجموعتي عملي بصدق. My Boss Supports my work Group within the organization.	37
				أحصل على التعليقات البناءة حول عملي. I get constructive Feedback about my work.	38

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1	2	3	4	الأسئلة من دعم مجموعة العمل	#
Never أبداً	Sometimes أحياناً	Often غالباً	Always دوماً	<p>Questions related to Work Group Supports</p> <p>دعم مجموعة العمل: أوزجرا من مجموعة العمل التي تصنف بالمجموعات المتميزة من حيث التواصل الجيد، الإبداع على الأقتل الجيد، التحدي البناء، والتسامح في مجال العمل الإختصاص بالأقتل، بل يمكن التي يكونون به.</p> <p>Work Group Supports: A diversely skilled work group in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing</p>	
				انا وزملائي تشكلن فريقاً جيداً. My co-workers and I make a Good Team.	39
				هناك شعور بثقة المتبادلة بين الناس الذين أعمل بالقرب منهم. There is a feeling of Trust among the people I work with most closely.	40
				تحدى الفكر بعضنا البعض ضمن المجموعة العمل بطريقة بناءة. Within my work group, we challenge each other's ideas in a constructive way.	41
				الناس في مجموعة ساهي يتقدمون على الأقتل الجيداً. People in my work group are Open to new Ideas.	42
				الناس في مجموعة ساهي على استعداد لتسامح بعضهم البعض. In my work group, people are willing to Help Each Other.	43
				تتسم المهارات، يشكلان جيداً في مجموعة ساهي. There is a good Blend of Skills in my work group.	44
				الناس في مجموعة ساهي التزامون بأعمالنا. The people in my work group are Committed to our work.	45
				توجد حرية تواصل وإفهام ضمن مجموعة ساهي. There is free and Open Communication within my work group.	46

1	2	3	4	الأسئلة من التشجيع المؤسسي	#
Never أبداً	Sometimes أحياناً	Often غالباً	Always دوماً	<p>Questions related to Organizational Encouragement</p> <p>التشجيع المؤسسي: أوزجرا من ثقافة مؤسسية طموح على الإبتكار من خلال العدالة، والتحكم البناء على الأقتل، ومكافأة ونظمي العمل المبتكر، ووجود آليات لتطوير الأقتل الجيداً، والتفاني لنشاط الأقتل، ووجود رؤية مشتركة.</p> <p>Organizational Encouragement: An organizational culture that encourages creativity through the fair, constructive judgment of ideas; reward and recognition for creative work; mechanisms for developing new ideas; an active flow of ideas; and a shared vision.</p>	
				يتم تشجيع الناس في اذ المؤسسة على حل المشكلات بطريقة مبتكرة. People are encouraged to Solve Problems creatively in this organization.	47
				يتم تشجيع على الأقتل الجيداً في اذ المؤسسة. New Ideas are encouraged in this organization.	48
				تتوفر لدى اذ المؤسسة آلية جيداً لتشجيع وتطوير الأقتل الإبتكاري. This organization has a good Mechanism for encouraging and developing creative Ideas.	49
				يتم تشجيع الناس على تحمل المخاطر في اذ المؤسسة. People are encouraged to Take Risks in this organization.	50
				تتوقع الإدارة العليا في اذ المؤسسة ان الناس سيقبلون عملاً إبتكارياً. In this organization, top management expects that people will do Creative Work.	51
				اشعر بان الإدارة العليا متحمسة لمشروعى. I feel that top Management is Enthusiastic about my project(s).	52
				يتم الحكم على الأقتل بطريقة عادلة في اذ المؤسسة. Ideas are Judged Fairly in this organization.	53
				يستطيع الناس في اذ المؤسسة التعبير عن الأقتل غير العادية بدون الخوف من إطلاق لقب "غيري" People in this organization can Express unusual ideas without the fear of being called stupid.	54
				الفشل مقبول في اذ المؤسسة، إذا كان الجهد المبذول على المشروع جيداً. Failure is Acceptable in this organization, if the effort on the project was good.	55
				تقييم الأداء في اذ المؤسسة عادل. Performance Evaluation in this organization is Fair.	56

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				يتم التعرف على الناس في اذ المؤسسة بدلاً على سائهم المبتكر . People are Recognized for Creative work in this organisation.	87
				يتم مكافأة الناس في اذ المؤسسة بدلاً على سائهم المبتكر . People are Rewarded for Creative work in this organisation.	88
				اذك أجواء مشجعة في اذ المؤسسة . There is an Open Atmosphere in this organisation.	89
				اذك تدفق الأفكار الحيوية والنشطة في اذ المؤسسة . In this organisation, there is a lively and active flow of ideas.	90
				بصفة عامة ، في اذ المؤسسة لدى الناس رؤية مشتركة بشأن مستقبلنا وما نحاول القيام به . Overall, the people in this organisation have a Shared Vision of where we are going and what we are trying to do.	91

1	2	3	4	أسئلة من اذ الفرق الرئيسية كذا العوائق الرئيسية هي : ثقافة المؤسسة التي لا تدعى الابتكار من خلال مشاكل السياسة الداخلية ، انطقت سلبية للأفكار الجيدة ، المنافسة الداخلية العنيفة ، تجنب المخاطر ، والتركيز المفرط على الوضع الراهن . Lack of Organizational Impediments: An organizational culture that does not impede creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo توجد مشاكل لها في سياسة اذ المؤسسة .	5
Never أبداً	Seldom بعضاً	Often كثراً	Always دائماً		
				لا توجد مشاكل لها في سياسة اذ المؤسسة . There are few Political Problems in this organisation.	92
				لا توجد منافسة مدمرة بين اذ المؤسسة . There is no Destructive Competition within this organisation.	93
				لا يهتم الناس في اذ المؤسسة بشأن حماية اقليمهم . People in this organisation are Not very concerned about Protecting their Territory.	94
				الوحدات الأخرى في المؤسسة لا تدعى مشاريعي . Other areas of the organisation Do Not Hinder My Project(s).	95
				لا يهتم الناس في اذ المؤسسة بشأن أفكارهم الجيدة . People are Not Critical of New Ideas in this organisation.	96
				لا يعتبر نقد الجاهل مشكلة في اذ المؤسسة . Destructive Criticism is Not a problem in this organisation.	97
				لا يهتم الناس في اذ المؤسسة بشأن الانتقاد السلبى لأعمالهم . People are Not concerned about Negative Criticism of their work in this organisation.	98
				لا يشعر الناس في اذ المؤسسة بالضغط لإنتاج أي شيء مليون حتى لو كانت جودة العمل أقل . People in this organisation Do Not feel Pressure to produce anything acceptable, even if quality is lacking.	99
				الإدارة العليا في اذ المؤسسة على استعداد لتبني المخاطر . Top management is Willing to Take Risks in this organisation.	100
				نركز اذ المؤسسة قليلاً بشأن الاستمرار بقليل بالأساليب التي فعلناهم . There is Little Emphasis in this organisation on Doing Things the Way We Have Always Done Them.	71
				تدعى الإجراءات والتعليقات في اذ المؤسسة غير رسمية جداً . Procedures and structures are Not too Formal in this organisation.	72
				لا تتحكم الإدارة العليا في اذ المؤسسة بشكل صارم . This organisation is not Strictly Controlled by upper management.	73

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				57	يتم التعرف على الناس في هذه المؤسسة بدلاً من منحهم التقدير . People are Recognized for Creative work in this organization.
				58	يتم مكافأة الناس في هذه المؤسسة بدلاً من منحهم التقدير. People are Rewarded for Creative work in this organization.
				59	هناك أجواء مشجعة في هذه المؤسسة . There is an Open Atmosphere in this organization.
				60	هناك تدفق نشط للحلول والخطط في هذه المؤسسة. In this organization, there is a lively and active flow of ideas.
				61	يملكه عامة ، في هذه المؤسسة لدى الناس رؤية موحدة بشأن مستقبلنا وما نحاول القيام به. Overall, the people in this organization have a Shared Vision of where we are going and what we are trying to do.

1	2	3	4	5	6	
Never أبداً	Sometimes أحياناً	Often كثيراً	Always دائماً		سؤال من فئة التوافق المؤسسية سؤال التوافق المؤسسية من : الثقافة المؤسسية التي لا تعيق الابتكار من خلال مشاكل السياسة الداخلية، الممارسات سلبية لتقليل الجهود، المنافسة الداخلية الشريرة، تجنب المخاطر، والتركيز المفرط على الوضع الراهن. Lack of Organizational Impediments: An organizational culture that does not impede creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo	
					62	توجد مشاكل أقل في سياسة هذه المؤسسة. There are few Political Problems in this organization.
					63	لا توجد منافسة مدمرة في هذه المؤسسة. There is no Destructive Competition within this organization.
					64	لا يهتم الناس في هذه المؤسسة بشأن حماية أقاليمهم . People in this organization are Not very concerned about Protecting their Territory.
					65	المناطق الأخرى في المؤسسة لا تعيق مشاريعي. Other areas of the organization Do Not Hinder My Project(s).
					66	لا ينتقد الناس في هذه المؤسسة بشأن أفكارهم الجديدة. People are Not Critical of New Ideas in this organization.
					67	لا يعتبر نقد الزملاء مشكلة في هذه المؤسسة. Destructive Criticism is Not a problem in this organization.
					68	لا يهتم الناس في هذه المؤسسة بشأن الانتقاد السلبى لأعمالهم. People are Not concerned about Negative Criticism of their work in this organization.
					69	لا يشعر الناس في هذه المؤسسة بالضغط لإنتاج أي شيء بحلول حتى لو كانت جودة العمل أقلية. People in this organization Do Not feel Pressure to produce anything acceptable, even if quality is lacking.
					70	الإدارة العليا في هذه المؤسسة على استعداد لتحمل المخاطر. Top management is Willing to Take Risks in this organization.
					71	تؤكد هذه المؤسسة أولاً بشأن الإستمرار بلقبهم بالأعمال الروتينية. There is Little Emphasis in this organization on Doing Things the Way We Have Always Done Them.
					72	تعتبر الإجراءات والعمليات في هذه المؤسسة غير رسمية جداً. Procedures and structures are Not too Formal in this organization.
					73	لا تحكم الإدارة العليا في هذه المؤسسة بشكل صارم . This organization is not Strictly Controlled by upper management.

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1	2	3	4	* أسئلة عن الموارد الكافية الموارد الكافية هي: جزء من سهولة الوصول إلى الموارد المناسبة مثل الأموال والوقت والتمهيلات والمعلومات Sufficient Resources: Access to appropriate resources, including funds, materials, facilities, and information
Never أبداً	Sometimes أحياناً	Often كثيراً	Always دائماً	
				74 التمهيلات التي أحتاجها آتية علي بسهولة The Facilities I need for my work are readily Available to me.
				75 أستطيع وبشكل عام الحصول على الموارد التي أحتاجها لمعي. Generally, I can get the Resources I need for my work.
				76 الميزانية لم تعثر الكافية المخصصة لمشروعي كغالبه . The Budget for my project is generally adequate.
				77 أستطيع الحصول على جميع البيانات التي أحتاجها لتطبيق مشروعي بنجاح I can get all the Data I need to carry out my project successfully
				78 أستطيع وبسهولة الحصول على المواد التي أحتاجها لتفيم عملي. I am able to easily get the Materials I need to do my work.
				79 أستطيع وبسهولة الحصول على المعلومات التي أحتاجها لمعي. The information I need for my work is easily obtainable.

1	2	3	4	* أسئلة عن واقعية ضغط العمل واقعية ضغط العمل هي: جزء من غياب كل من الضغوط الزمنية كوقت ، التوابعات غير الواقعية للإنتاجية، والإلهام من العمل المبتكر . Realistic Workload: Absence of chronic time pressures, unrealistic expectations for productivity, and distractions from creative work
Never أبداً	Sometimes أحياناً	Often كثيراً	Always دائماً	
				80 ليس لدي الكثير من العمل في اليوم بما يجعله في وقت قصير جداً I do Not have too Much Work to do in too little time.
				81 لدي الوقت الكافي لتفيم مشروعي I have Sufficient Time to do my project(s)
				82 لا توجد أمور كثيرة تشتتني من العمل في هذه المؤسسة. There are not too many Distractions from project work in this organisation.
				83 توجد توقعات واقعية لما يمكن ان ينجوا الناس في هذه المؤسسة. There are realistic Expectations for what people can achieve in this organisation.
				84 لا أشعر بضغوط الوقت في عملي. I do Not feel a sense of Time Pressure in my work.

الجزء (د) : الأسئلة المتعلقة بالتحديات و الحوافز الحكومية التي تؤثر  
 على الابتكار الموهبتين  
 Part (E) : Questions related to the Government Regulation and Incentive factors that influence employees creativity

1	2	3	4	* أسئلة عن التحديات والحوافز الحكومية التحديات والحوافز الحكومية هي: الآليات الإيجابية التي تضمن الحوافز والقرصن على المؤسسات Government Regulation and Incentive: Coercive mechanisms that exert both impositions and inducements on organizations
Never أبداً	Sometimes أحياناً	Often كثيراً	Always دائماً	
				85 تضع حكومة دبي معايير واضحة متعلقة بالابتكار. Dubai government sets clear performance standards with regards to creativity.
				86 تفرض حكومة دبي العديد من الأهداف المتعلقة بالابتكار على مؤسستي . There are a large number of creativity targets imposed by Dubai government on my organization
				87 تضع حكومة دبي لقياس أداء لؤري للابتكار. Dubai Government conducts regular performance measurement with regards to creativity

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				Incentives offered by the Dubai Government, such as awards and grants, are significant motivators for my organisation to adopt creativity initiatives مكافآت الحكومة التي تقدمها حكومة دبي مثل (المعونات والهدايا) ذات أهمية كبيرة لادخول المبادرات الإبداعية	98
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Part (C) : Questions related to the outcomes الجزء (ف) : الأسئلة المتعلقة بالنتائج

1	2	3	4	Questions related to Creativity أسئلة عن الإبداع الإبداع: المؤسسة أو الوحدة المبتكرة هي التي يتم فيها إطلاق أفكار كبيرة من الإبداع و يحفز الناس أنهم يتجهون على التفكير فيها Creativity: A creative organisation or unit is one that generates ideas, concepts, products, services, or processes that are novel and useful. الإبداع: منظمة أو وحدة عمل تولد أفكاراً، مفاهيم، منتجات، خدمات، أو عمليات إبداعية جديدة، أصلية، ومفيدة.	
Never أبداً	Seldom أحياناً	Often كثيراً	Always دوماً		
				My Area of this organisation is Creative. معياري هنا من هذه المؤسسة إبداعية.	99
				Overall, my current work environment is conducive to My Own Creativity. بصفة عامة معياري بيدي معاني الحالية مساندة لإفكاراتي.	90
				A Great deal of Creativity is called for in my daily work. يحتاج معياري اليومي جزءاً كبيراً من الإبداع.	91
				Overall, my current work environment is conducive to the Creativity of my work Group. بصفة عامة معياري بيدي معاني الحالية مساندة للإبداع لدي مجموعتي.	92
				I believe that I am currently very Creative in my work. أعتقد أنني مبتكرة جداً حالياً في معياري.	93
				My Area of this organisation is innovative. معياري هنا من هذه المؤسسة ابتكارية.	94
What would you change in order to improve creativity/ idea generation? <span style="float: right;">ماذا تريد ان تغير لتطوير الإبداع ( توليد الأفكار ) ؟</span>					95
_____					
_____					

ملاحظات عامة:	
هل مبادأة الأسئلة واضحة ؟ 1- نعم 2- لا	
في حال وجود بعض الأسئلة التي بحاجة معالجة في إجابة مبادأة يرجى التوضيح ما ترونه مبدئياً _____ _____ _____ _____ _____	96
ما هي المدة التي استغرقتها تعبئة الاستبيان؟ _____ _____ _____	97

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## Main Study Participant Recruitment Email

Dear.....

I am, Mardeya Al Balooshi, PhD Student at University of Wollongong in Dubai (UOWD),and as a part of my PhD, I am conducting a research on" **Measurement of impact of creativity training programs in the UAE government sector**" I am writing this mail to seek your participation in the research study.

The research has the following aims: **First**, First,contribute to scholarly literature related to creativity context and creativity training by investigating new variable in a new region. **Second**,to investigate the influence of individual factors, work context and external factors that facilitate employees creativityin the UAE government sector.

You have been chosen as a potential participant in this study as I believe you could provide valuable inputs regarding the specific factors that influence creativity among employees in Dubai government organizaions.

Apart from one hour of your time, we can foresee no risks for you in participating in the survey. To ensure anonymity

- 1- I have selected you as a potential participant from a list of staff provided by the HR.
- 2- You have been individually contacted by me only via email or phone call.
- 3- If you give consent, you will be requested to complete the hard copy of the attached survey at their place of work (or any convenient location), at a time convenient to you.
- 4- You will not be identified in the subsequent publication by name or designation.


Your participation would involve to spare up to one hour of your time for completing the questionnaires.

Please find enclosed the participant information sheet and questionnaire for more details about the participation.

Looking forward towards your positive support in helping me to conduct the research,

Thanking you,

Page 1 of 7 (03) Main Study



**UOWD**

## استبيان Survey

تقييم العوامل التي تؤثر على ابتكار الموظفين العاملين في القطاع الحكومي بإمارة دبي

**Assessing factors that influence creativity among employees**

**in Dubai government organizations**

شكراً لك على مشاركتك في هذا الاستبيان

Please ensure you answer all questions

يرجى التأكد من الإجابة على جميع الأسئلة

يرجى اختيار الإجابة المناسبة بوضع علامة (X) عند الإجابة على أسئلة المعلومات العامة

Please select the appropriate response (X) when answering the background information questions.

**Part (A) : Demographic Information** **الجزء (أ) : المعلومات الديموغرافية**

**1. Gender:** **1. الجنس:**

1. Male 1. ذكر

2. Female 2. أنثى

**2. Are you a UAE citizen?** **2. هل أنت من مواطني دولة الإمارات العربية المتحدة؟**

1. Yes 1. نعم

2. No 2. لا

If no, please specify your nationality \_\_\_\_\_ إذا كانت إجابتك بلا يرجى ذكر الجنسية \_\_\_\_\_

**3. What is your age group?** **3. ما هي فئة العمرية؟**

1. 18-25 1. 18-25

2. 26-35 2. 35-26

3. 36-45 3. 45-36

4. 46-55 4. 55-46

5. 56 or more 5. 56 أو أكثر

**4. What is your profession category?** **4. ما هي درجةك الوظيفية؟**

1. Leadership category 1. الفئة القيادية

2. Supervisory category 2. الفئة الإشرافية

3. Support category 3. فئة الدعم

**5. What is the highest educational qualification you hold?** **5. ما هو أعلى مؤهل تعليمي حصلت عليه؟**

1. Postgraduate degree 1. الدراسات العليا

2. Bachelor's degree 2. الشهادة الجامعية

3. Secondary school 3. الثانوية العامة

4. Other (please state) \_\_\_\_\_ 4. أخرى (يرجى التوضيح) \_\_\_\_\_

**6. How many years of experience do you have?** **6. كم تبلغ عدد سنوات خبرتك؟**

1. Less than 1 year 1. أقل من سنة

2. 1 - 10 years 2. من سنة 1 إلى أقل من 10 سنوات

3. 11- 20 years 3. من 10 سنوات إلى أقل من 20 سنوات

4. Above 20 years 4. أكثر من 20 سنة

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7. In which functional area of the department are you employed?

1. Administration
2. Human Resources
3. Customer Service
4. Finance/Accounting
5. Other (please state) \_\_\_\_\_

7. في أي مجال تعمل ؟

1. الإدارة
2. الموارد البشرية
3. خدمة العملاء
4. مالية /محاسبة
5. غير ذلك ( يرجى التحديد ) \_\_\_\_\_

Please select the appropriate number with 3 (✓) to indicate the level of your agreement or disagreement with the following statements on a scale of 1 to 4, where 1 = Never, 2 = Sometimes, 3 = Often, and 4 = Always

الرجاء اختيار العدد المناسب بوضع علامة (✓) للإشارة إلى مستوى الاتفاق أو الاختلاف مع البيانات التالية على مقياس من 1 إلى 4، حيث 1 = أبداً، 2 = أحياناً، 3 = غالباً، و 4 = دائماً

Part (C) :Questions related to the specific individual factors that influence creativity among employees who have undergone creativity training programs

الجزء (ج) : الأسئلة المتعلقة بالعوامل الشخصية التي تؤثر على ابتكار الموظفين الذين حضروا دورات التدريب على الابتكار

1	2	3	4	الأسئلة من التحفيز الذاتي للقيام بالتحفيز الذاتي Intrinsic Motivation	رقم
Never أبداً	Sometimes أحياناً	Often غالباً	Always دائماً	التحفيز الذاتي لأداء للقيام به : الرغبة التي يربى الموظفون وقاطبهم بشراياالاستمتاع . Intrinsic Motivation: The extent to which employees view their jobs as interesting, enjoyable, boring and unpleasant من سورا بأذا التحفيز على as interesting, enjoyable, boring and unpleasant	
				My job is interesting. وقطبي مشروالاستمتاع	8
				My job is enjoyable. وقطبي دائماً	9
				My job is boring. وقطبي مشروالاستمتاع	10
				My job is unpleasant. وقطبي من سورا	11

1	2	3	4	الأسئلة من وضوح الإجراءات Process clarity	رقم
Never أبداً	Sometimes أحياناً	Often غالباً	Always دائماً	وضوح الإجراءات من : مدى إدراك الموظفون بشأن وضوح الإجراءات المتعلقة بوظائفهم . Process clarity: The extent to which employees perceive clarity concerning the processes involved in their jobs	
				I know how to divide my time among the tasks required of my job. أنا أعرف كيف أقسم وقتي بين المهام المطلوبة مني	12
				I know how to schedule my work day. أنا أعرف كيف أقوم بجدول يومي بفعالية	13
				I know how to determine the appropriate procedures for each work situation. أنا أعرف كيف أظن الإجراءات المناسبة لكل مهنة بعطبي	14
				I know the procedures I use to do my work are correct and proper. أنا أعرف الإجراءات التي يستخدمها وأقوم بعطبي بشكل صحيح ومناسب	15
				Considering all my work tasks, I know the best ways to do these tasks. بالأخذ بعين الإعتبار جميع المهام عطبي، أنا أعرف أفضل الطرق للقيام بهذه المهام	16

1	2	3	4	الأسئلة من فعالية الابتكار الذاتي Creative-self efficacy	رقم
Never أبداً	Sometimes أحياناً	Often غالباً	Always دائماً	فعالية الابتكار الذاتي من : التباينات للشخص من فكرة ابتكار بعطبي على رجة التحدي Creative-self efficacy : perceptions related specifically to being creative in one's work	
				I feel that I am good at generating novel ideas. أشعر أنني جيد توليد أفكار جديدة	17

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				أنا أفتخر في حل المشكلات بطريقتي المبتكرة. I have confidence in my ability to solve problems creatively.	18
				أنا صانع أفكار بمواهبه مواصلة تطوير أفكار الآخرين . I have a knack for further developing the ideas of others.	19

الجزء (ج) : الأسئلة المتعلقة بعوامل بيئة العمل التي تؤثر على ابتكار الموظفين الذين حضروا تورات التدريب على الابتكار  
 Part (D) : Questions related to the specific work environment factors that influence creativity among employees who have undergone creativity training programs

1	2	3	4	الأسئلة من العربية الحرية في اتخاذ قرار بشأن القيام بعمل ما أو كيفية القيام به أو شحور الشخص بالسيطرة على عمله. Freedom: Deciding what work to do or how to do it; a sense of control over one's work	#
Never أبداً	Sometimes أحياناً	Often كثيراً	Always دائماً		
				أنا أضع بطريقتي لتقليد مشاريعي. I have the freedom to decide how I am going to Carry Out My Projects.	20
				أنا أشعر بالضغط قليلاً لتلبية متطلبات شخص آخر بشأن كيفية أدائي لعملي. I feel little Pressure to meet someone else's specifications in how I do my work.	21
				أنا أضع بطريقتي لتقرير المشاريع التي أود القيام بها. I have the freedom to Decide What Project(s) I am going to do.	22
				أنا أشعر بالسيطرة على عملي وأفكر في بيئتي عملي اليومية. In my daily work environment, I feel a Sense of Control over my own work and my own ideas.	23

1	2	3	4	الأسئلة من العمل. التحدي في العمل أو إحساس الفرد بالقيام بالقيام الصعبة والمثيرة التي أفيها تحدي. Challenging Work: A sense of having to work hard on challenging tasks and important projects.	#
Never أبداً	Sometimes أحياناً	Often كثيراً	Always دائماً		
				أشعر بأنني أعمل على مشاريع مهمة. I feel that I am working on Important Projects.	24
				المهام في عملي هي تحدي . The Tasks in my work are Challenging .	25
				المهام في عملي تطلب أقصى ما لدي . The Tasks in my work call out the Best in Me.	26
				لدي المؤسسة حاجة ملحة لإتمام عملي الحالي بنجاح. The Organization has an urgent Need for successful completion of the work I am now doing.	27
				أشعر بالتحدي في عملي الحالي . I feel Challenged by the Work I am currently doing	28

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1	2	3	4	Questions related to Managerial Encouragement	أسئلة من التجميع الإداري	#
Never أبداً	Sometimes أحياناً	Often غالباً	Always دوماً	<p>التشجيع الإداري: هو المسؤول الذي يحفز مثلاً جيداً يحفز به في العمل، ويحدد الأهداف بشكل مناسب، ويقيم مجموعة العمل، ويقدم التسهيلات القوية، ويثير الثقة في مجموعة العمل.</p> <p>Managerial Encouragement: A boss who serves as a good work model, sets goals appropriately, supports the work group, values individual contributions, and shows confidence in the work group.</p>		
				My Boss's Expectations for my project(s) are Clear	توقعات مسؤولي واضحة بشأن المشروع.	29
				My Boss Plans well	مسؤولي يخطط جيداً .	30
				My Boss clearly sets overall Goals for me .	مسؤولي يحدد أهدافي بشكل واضح .	31
				My Boss Communicates well with our work group.	مسؤولي يتواصل بشكل جيد مع مجموعة مثلي.	32
				My Boss has good interpersonal skills.	مسؤولي يتمتع بمهارات تعامل جيداً.	33
				My Boss shows Confidence in our work group.	مسؤولي يظهر الثقة بمجموعة مثلي.	34
				My Boss Values individual Contributions to project(s).	مسؤولي يقدر المساهمات القوية في المشروع.	35
				My Boss serves as a good Work Model .	مسؤولي يحفز مثلاً يحفز به في العمل .	36
				My Boss is Open to new Ideas.	مسؤولي منفتح على الأفكار الجديدة.	37
				My Boss Supports my work Group within the organization.	مسؤولي يدعم مجموعة مثلي بالإنسية.	38
				I get constructive Feedback about my work	أحصل على ملاحظات بناءة حول عملي.	39

1	2	3	4	Questions related to Work Group Supports	أسئلة من دعم مجموعة العمل	#
Never أبداً	Sometimes أحياناً	Often غالباً	Always دوماً	<p>دعم مجموعة العمل: أولئك من مجموعة العمل التي تصنف بالمهارات المتنوعة من حيث التخصصات الجيد، الإطلاع على الأفكار الجديدة، التحدي البناءة، والمساهمة في مجال العمل الإحساس بالالتزام بالعمل الذي يقومون به.</p> <p>Work Group Supports: A diverse skilled work group in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing.</p>		
				My co-workers and I make a Good Team.	أنا وزملائي مثلي يشكلون فريقاً جيداً.	40
				There is a feeling of Trust among the people I work with most closely.	الثقة شعور بقلقة المتصلة بين الناس الذين أعمل بالقرب منهم.	41
				Within my work group, we Challenge each other's Ideas in a constructive way	تتحدي أفكار بعضنا البعض ضمن مجموعة العمل بطريقة بناءة.	42
				People in my work group are Open to new Ideas.	الناس في مجموعة مثلي منفتوحون على الأفكار الجديدة.	43
				In my work group, people are willing to Help Each Other.	الناس في مجموعة مثلي على استعداد لمساعدة بعضهم البعض.	44
				There is a good Blend of Skills in my work group.	تتسم المهارات بشكل جيد في مجموعة مثلي.	45
				The people in my work group are Committed to our work.	الناس في مجموعة مثلي ملتزمون بأعمالنا.	46
				There is free and Open Communication within my work group.	توجد حرية تواصل وانفتاح ضمن مجموعة مثلي.	47

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1	2	3	4	الأسئلة المتعلقة بالتنشيط التنظيمي التشجيع التنظيمي: أن يكون من ثقافة المؤسسة تشجيع على الابتكار من خلال الملائمة والحكم الجيد على الأفكار، ومكافحة وتطويع العمل المبتكر، ووجود آليات لتطوير الأفكار الجيدة، والتفاني للهدف للأفكار، ووجود رؤية مشتركة.	#
Never أبداً	Seldom أحياناً	Often كثيراً	Always دائماً	Organizational Encouragement: An organizational culture that encourages creativity through the fair, constructive judgment of ideas; reward and recognition for creative work; mechanisms for developing new ideas; an active flow of ideas; and a shared vision	
				يتم تشجيع الناس في هذه المؤسسة على حل المشكلات بطريقة مبتكرة.	45
				People are encouraged to Solve Problems creatively in this organization.	
				يتم تشجيع على الأفكار الجيدة في هذه المؤسسة.	46
				New Ideas are encouraged in this organization.	
				تتوافر لدى هذه المؤسسة آلية جيدة لتشجيع وتطوير الأفكار الإبداعية.	50
				This organization has a good Mechanism for encouraging and developing creative ideas.	
				يتم تشجيع الناس على تحمل المخاطر في هذه المؤسسة.	51
				People are encouraged to Take Risks in this organization.	
				تتوقع الإدارة العليا في هذه المؤسسة أن الناس سيؤثرون مثلاً إيجابياً.	52
				In this organization, top management Expects that people will do Creative Work.	
				أشعر بأن الإدارة العليا متحمسة لمشروعي .	53
				I feel that top Management is Enthusiastic about my project(s).	
				يتم الحكم على الأفكار بطريقة عادلة في هذه المؤسسة.	54
				Ideas are Judged Fairly in this organization.	
				يستطيع الناس في هذه المؤسسة التعبير عن الأفكار غير العادية بدون الخوف من إطلاق لقب "مجنون".	55
				People in this organization can Express unusual Ideas without the fear of being called stupid.	
				الفشل مقبول في هذه المؤسسة، إذا كان الجهد المبذول على المشروع جيداً.	56
				Failure is Acceptable in this organization, if the effort on the project was good.	
				تقييم الأداء في هذه المؤسسة عادل.	57
				Performance Evaluation in this organization is Fair.	
				يتم التعرف على الناس في هذه المؤسسة بدلاً من معيبيهم المبتكر.	58
				People are Recognized for Creative work in this organization.	
				يتم مكافأة الناس في هذه المؤسسة بدلاً من معيبيهم المبتكر.	59
				People are Rewarded for Creative work in this organization.	
				هناك أجواء متشجعة في هذه المؤسسة.	60
				There is an Open Atmosphere in this organization.	
				هناك تفاعل للأفكار الجيدة والنشطة في هذه المؤسسة.	61
				In this organization, there is a lively and active flow of Ideas.	
				بصفة عامة، في هذه المؤسسة لدى الناس رؤية مشتركة بشأن مستقبلنا وما نحاول القيام به.	62
				Overall, the people in this organization have a Shared Vision of where we are going and what we are trying to do.	

1	2	3	4	الأسئلة من عدم التوافق التنظيمي قلة التوافق التنظيمي: هي - ثقافة المؤسسة التي لا تعيق الابتكار من خلال مشاكل السياسة الداخلية، المقاتلات عليه للأفكار الجيدة، المنافسة الداخلية الشريرة، تجنب المخاطر، والتركيز المفرط على الوضع الراهن.	#
Never أبداً	Seldom أحياناً	Often كثيراً	Always دائماً	Lack of Organizational Impediments: An organizational culture that does not impede creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo	
				توجد مشاكل أهلية في سياسة هذه المؤسسة.	63
				There are few Political Problems in this organization	
				لا توجد منافسة مدمرة بهذه المؤسسة.	64
				There is no Destructive Competition within this organization.	
				لا يعيق الناس في هذه المؤسسة بشأن حماية الممتلكات.	65

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				People in this organization are Not very concerned about Protecting their Territory	
				الرهائن الأخرى في المؤسسة لا تهتم بشكل كبير. Other areas of the organization Do Not hinder My Project(s).	66
				لا يهتف الناس في هذه المؤسسة بشأن الأفكار الجديدة. People are Not Critical of New Ideas in this organization.	67
				لا يعتبر النقد البناء مشكلة في هذه المؤسسة. Destructive Criticism is Not a problem in this organization.	68
				لا يقلق الناس في هذه المؤسسة بشأن الإطفاة السلبية لأعمالهم. People are Not concerned about Negative Criticism of their work in this organization.	69
				لا يشعر الناس في هذه المؤسسة بالضغط لإنتاج أي شيء يقولون حتى لو كانت جودة العمل أقلية. People in this organization Do Not feel Pressure to produce anything acceptable, even if quality is lacking.	70
				الإدارة العليا في هذه المؤسسة على استعداد لتخمين المخاطر Top management is Willing to Take Risks in this organization	71
				تركز هذه المؤسسة قليلاً بشأن الإصرار بلقيم بالأعمال الروتينية. There is Little Emphasis in this organization on Doing Things the Way We Have Always Done Them.	72
				تعتبر الإجراءات والتعليمات في هذه المؤسسة غير رسمية جداً. Procedures and structures are Not too Formal in this organization.	73
				لا تتحكم الإدارة العليا في هذه المؤسسة بشكل صارم . This organization is not Strictly Controlled by upper management.	74

1	2	3	4	Questions related to Sufficient Resources	#
Never أبداً	Seldom أحياناً	Often كثيراً	Always دائماً	استد من الموارد الكافية الموارد الكافية هي: جزءاً من سهولة الوصول إلى الموارد المناسبة مثل الأموال والبريد والمعدات والمعلومات. Sufficient Resources: Access to appropriate resources, including funds, materials, facilities, and information	
				المعدات التي أحتاجها لإداء عملي متوفرة بسهولة. The Facilities I need for my work are readily Available to me.	75
				أستطيع وبشكل عام الحصول على الموارد التي أحتاجها عملي. Generally, I can get the Resources I need for my work.	76
				الميزانية المخصصة لمشروعي كافية . The Budget for my project(s) is generally adequate.	77
				يمكنني الحصول على جميع البيانات التي أحتاجها عملي بسهولة. I can get all the Data I need to carry out my projects successfully	78
				أستطيع وبسهولة الحصول على المواد التي أحتاجها عملي. I am able to easily get the Materials I need to do my work.	79
				أستطيع وبسهولة الحصول على المعلومات التي أحتاجها عملي. The information I need for my work is easily obtainable.	80

1	2	3	4	Questions related to Realistic Workload Pressure	#
Never أبداً	Seldom أحياناً	Often كثيراً	Always دائماً	استد من واقعية ضغط العمل واقعية ضغط العمل هي: جزءاً من غياب كل من الضغوط المبالغ الزائد ، التوقعات غير الواقعية للإنتاجية، والإلهام من العمل المبتكر . Realistic Workload Pressure: Absence of extreme time pressure, unrealistic expectations for productivity, and distractions from creative work	
				ليس لدي الكثير من العمل في الوقت المتاح لي وأنت أصغر جداً. I do Not have too Much Work to do in too little time.	81
				لدي الوقت الكافي لعمل عملي. I have Sufficient Time to do my project(s).	82
				لا توجد أمور كثيرة متعلقة من العمل في هذه المؤسسة. There are Not too Many Things to do in this organization.	83

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				There are not too many Distractions from project work in this organisation. لا يوجد مشتتات خطيرة بما يكفي من أجل الناس في هذه المؤسسة.	
				There are realistic Expectations for what people can achieve in this organisation. لا أقم بضغوط زائدة في عملي.	84
				I do Not feel anyone of Time Pressure in my work.	85

الجزء (د) : الأسئلة المتعلقة بالتشريعات و الحوافز الحكومية التي تؤثر في ابتكار المرشحين الذين حضروا دورات التدريب على الابتكار.  
Part (D) : Questions related to the Government Regulation and Incentive factors that influence creativity among employees who have undergone creativity training programs

1	2	3	4	الأسئلة عن التشريعات والحوافز الحكومية	رقم
Never أبداً	Sometimes أحياناً	Often كثيراً	Always دائماً	Questions related to Government Regulation and Incentive التشريعات والحوافز الحكومية هي: الآليات الإجبارية التي تضمن الحوافز والقرصن على المؤسسات Government Regulation and Incentive: Coercive mechanisms that exist both impositions and inducements on organisations	
				تضع حكومة دبي معايير واضحة متعلقة بالابتكار. Dubai government sets clear performance standards with regards to creativity.	86
				تفرض حكومة دبي العديد من الأهداف المتعلقة بالابتكار على مؤسستي . There are a large number of creativity targets imposed by Dubai government on my organisation	87
				تضع حكومة دبي قياسات أداء منتظمة فيما يتعلق بالابتكار. Dubai Government conducts regular performance measurement with regards to creativity	88
				تعتبر الحوافز التي تقدمها حكومة دبي مثل (العروض والتمجيد) دافعة لمؤسستي لتبني المبادرات الابتكارية Incentives offered by the Dubai Government, such as awards and grants, are significant motivators for my organisation to adopt creative initiatives	89

الجزء (هـ) : الأسئلة المتعلقة بالنتائج  
Part (E) : Questions related to the outcomes

1	2	3	4	الأسئلة عن الابتكار	رقم
Never أبداً	Sometimes أحياناً	Often كثيراً	Always دائماً	Questions related to Creativity الابتكار: المؤسسة أو الوحدة التي يكون فيها الهدف هو التي يتم فيها إطلاق أفكاراً كبيراً من الابتكار و يحفز الناس أنهم يتحدون حدسهم بابتكار أفكارها Creativity: A creative organisation or unit, where a great goal of creativity is called for and where people believe they actually produce creative work.	
				مجال عملي في هذه المؤسسة مبتكرة My Area of this organisation is Creative	90
				بصفة عامة عملي بيئة محفزة للإبتكار. Overall, my current work environment is conducive to My Own Creativity.	91
				يطلب عملي اليومي جزءاً كبيراً من الابتكار. A Great deal of Creativity is called for in my daily work.	92
				بصفة عامة عملي بيئة محفزة للإبتكار مساهمة لمجموعة عملي. Overall, my current work environment is conducive to the Creativity of my work Group.	93
				أعتقد أنني مبتكرة جداً حالياً في عملي. I believe that I am currently very Creative in my work.	94
				مجال عملي في هذه المؤسسة ابتكارية My Area of this organisation is innovative.	95
ماذا تريد ان تغير لتطور الابتكار ( ترقية الابتكار ) ؟ What would you change in order to improve creativity( Boost generation ) ? _____ _____ _____					96

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## MAIN STUDY PARTICIPANT INFORMATION SHEET

### TITLE:

Measurement of impact of creativity training programs in the UAE government sector

### PURPOSE OF THE RESEARCH

This is an invitation to participate in a study conducted by researchers at the University of Wollongong in Dubai. The project has the following aims:

**First**, to develop a framework that focuses on the impact of creativity training programs in the UAE government sector in order to help both employees and organizations to maximize the benefits of this kind of formal training.

**Second**, to identify the specific work environment factors that influence creativity and innovation among employees who have undergone creativity training programs.

### INVESTIGATORS

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#### METHOD AND DEMANDS ON PARTICIPANTS

If you choose to be included, you will be asked to spare up to one hour of your time for completing the questionnaires. This attached questionnaire will require participants' to identify factors that facilitate or impede creativity. Completion of the questionnaire represents tacit consent and responses can be used in the research. By completing and the survey, you are consenting to participate in the research because it is anonymous, data and information cannot be withdrawn after completion.

#### POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS

Apart from the one hour of your time, we can foresee no risks for you. To ensure anonymity

- 1- I have selected you as a potential participant from a list of staff provided by the HR.
- 2- You have been individually contacted by me only via email or phone call.
- 3- You will be requested to complete a paper copy of the questionnaire emailed to you and will need to print and complete the attached questionnaire, at your place of work (or any convenient location), at a time convenient to you.
- 4- You will not be identified in the subsequent publication by name or designation

Your involvement in the study is voluntary and you may withdraw your participation from the study at any time and withdraw any data that you have provided to that point. Refusal to participate in the study will not affect your relationship with the University



of Wollongong in Dubai, UAE. However; you will not be able to withdraw your data, should you wish to withdraw your participation in the study after you've completed the questionnaire.

#### FUNDING AND BENEFITS OF THE RESEARCH

This study is not funded by any funding body and is being undertaken by Mardeya Al Balooshi as partial fulfillment for her PhD degree.

The research will have both theoretical and practical contributions. The theoretical contributions are to extend the previous literature in creativity training by examining its impact in a new region. Additionally this study might be considered foundation research for other researchers who are interested in this field especially in the UAE. Also it will contribute to the knowledge by formulizing a framework that determines the required conditions to enhance employees' creativity effectiveness.

While practical implications will inform the practitioners and the decision makers about the significance of work situational factors to develop employees' idea generation and idea implementation (innovation).

#### ETHICS REVIEW AND COMPLAINTS

This study has been reviewed by the Social Sciences Human Research Ethics Committee of the University of Wollongong in Dubai. If you have any concerns or complaints regarding the way this research has been conducted you can contact the UOW Ethics Officer [REDACTED]

Thank you for your participation in this study

Appendix 14: Ethics Approval Letter -Cycle 2 of research design



APPROVAL LETTER  
In reply please quote: HE14/430

15 December 2014

Dr Payyazhi Jayashreei  
PO Box 8552  
DUBAI - UAE

Dear Dr Jayashreei,

Thank you for your response dated 9 December 2014 to the HREC review of the application detailed below. I am pleased to advise that the application has been approved.

Ethics Number: HE14/430  
Project Title: Working title: Measurement of the impact of creativity training programs in the UAE government sector  
Researchers: Dr Payyazhi Jayashreei, Dr Scott Fargher, Ms Mardeys Al Beloozhi  
Approval Date: 11 December 2014  
Expiry Date: 10 December 2015

The University of Wollongong/Illawarra Shoalhaven Local Health District Social Sciences HREC is constituted and functions in accordance with the NHMRC *National Statement on Ethical Conduct in Human Research*. The HREC has reviewed the research proposal for compliance with the *National Statement* and approval of this project is conditional upon your continuing compliance with this document.

Approval by the HREC is for a twelve month period. Further extension will be considered on receipt of a progress report prior to expiry date. Continuing approval requires:

- The submission of a progress report annually and on completion of your project. The progress report template is available at <http://www.uow.edu.au/research/ethics/human/index.html>. This report must be completed, signed by the researchers and the appropriate Head of Unit, and returned to the Research Services Office prior to the expiry date.
- Approval by the HREC of any proposed changes to the protocol including changes to investigators involved
- Immediate report of serious or unexpected adverse effects on participants
- Immediate report of unforeseen events that might affect continued ethical acceptability of the project.

If you have any queries regarding the HREC review process, please contact the Ethics Unit on phone: [REDACTED]

Yours sincerely

A black rectangular box redacting the signature of Dr Mark Rix.

Dr Mark Rix  
Acting Chair, Social Sciences  
Human Research Ethics Committee

A large black rectangular box redacting contact information, likely an email address or phone number.

Appendix 15: Ethics Approval Letter - Amendment in cycle 2 of research design



**AMENDMENT APPROVAL**  
In reply please quote: HE14/430  
Further Enquiries Phone: 4221 3386

24 November 2015

Dr Payyazhi Jayashree  
PO Box 8352  
DUBAI - UAE

Dear Dr Jayashree

I am pleased to advise that the amendment requested to the following Human Research Ethics application has been approved.

Ethics Number: HE14/430  
Project Title: Working title: Measurement of the impact of creativity training programs in the UAE government sector  
Researchers: Dr Payyazhi Jayashree, Ms Mardeya Al Baloochi  
Amendments: Revised Questionnaire  
Revised Participant Recruitment Email  
Revised Pilot Study Participant Information Sheet  
Amendment Approval Date: 20 November 2015  
Application Expiry Date: 10 December 2015

Please remember that in addition to reporting proposed changes to your research protocol the HREC requires that researchers immediately report:

- serious or unexpected adverse effects on participants
- unforeseen events that might affect continued ethical acceptability of the project.

The University of Wollongong/ Illawarra and Shoalhaven Local Health Network District (ISLHD) Social Science HREC is constituted and functions in accordance with the NHMRC National Statement on Ethical Conduct in Human Research.

A condition of approval by the HREC is the submission of a progress report annually and a final report on completion of your project. The progress report template is available at <http://www.uow.edu.au/research/rso/ethics/UOW009383.html>. This report must be completed, signed by the appropriate Head of School and returned to the Research Services Office prior to the expiry date.

If you have any queries regarding the HREC review process, please contact the Ethics Unit on phone [REDACTED]

Appendix 16: Removed and retained items

Constructs	No. of items	Removed item(s)	Retained items	Final used items
Process clarity	5	PC2.	PC1, PC3, PC4& PC5	4
Sufficient resources	6	SR1 &SR6.	SR2, SR3, SR4& SR5	4
Organizational encouragement	15	OE2, OE4,OE9, OE12 , OE13, OE14 &OE15	OE3, OE5, OE6, OE7, OE8, OE10, OE11 & OE14	8
Managerial encouragement	11	ME2 ME3 & ME6.	ME1, ME4, ME5, ME7, ME8, ME9, ME10 & ME11.	8
Work group supports	8	WGS2 &WGS4	WGS1, WGS3, WGS5, WGS6, WGS7 & WGS8.	6
Realistic workload pressure	5	RWP1	RWP2, RWP 3& RWP 5.	3
Lack of organizational impediments	12	LOI1, LOI 2, LOI9, LOI10, LOI 11.& LOI12.	LOI3, LOI4, LOI5, LOI6, LOI7, LOI8,	6
Creativity	6	CR1 ,CR5& CR6.	CR 2, CR3, & CR4.	3

Appendix 17: Item loadings on each factor based on the exploratory factor analysis

	Rotated Component Matrix <sup>a</sup>														
	Component														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
*TI1							.482								.479
*TI2															.535
*TI_3_R														.836	
*TI_4_R														.853	
PC1						.714									
PC2						.712									
PC3						.721									
PC4						.740									
PC5						.707									
SE1											.740				
SE2											.696				
SE3											.776				
FR1												.612			
FR2												.424			
FR3												.700			
FR4												.614			
CH1							.621								
CH2							.742								
CH3							.659								
CH4							.606								
CH5							.703								
*ME1		.499													
ME2		.710													
ME3		.691													
ME4		.805													

ME5	.809																			
ME6	.768																			
ME7	.804																			
ME8	.808																			
ME9	.787																			
ME10	.814																			
ME11	.725																			
WGS1		.720																		
WGS2		.685																		
WGS3		.668																		
WGS4		.658																		
WGS5		.768																		
WGS6		.722																		
WGS7		.702																		
WGS8		.676																		
OE1	.590																			
OE2	.631																			
OE3	.696																			
OE4	.685																			
OE5	.637																			
OE6	.672																			
OE7	.732																			
OE8	.602																			
OE9	.504																			
OE10	.673																			
OE11	.702																			
OE12	.692																			
OE13	.699																			
OE14	.745																			
OE15	.721																			

LOI1		.538										
LOI2		.686										
LOI3		.763										
LOI4		.744										
LOI5		.779										
LOI6		.727										
LOI7		.730										
LOI8		.576										
LOI9	.434											
LOI10										.516		
LOI11										.716		
LOI12										.759		
SR1			.684									
SR2			.750									
SR3			.739									
SR4			.743									
SR5			.761									
SR6			.653									
*WP1									.484			
WP2									.631			
WP3									.738			
WP4									.459			
WP5									.675			
G1						.802						
G2						.817						
G3						.835						
G4						.748						
C1	.431								.530			
C2									.595			
C3									.715			

C4										.655									
C5										.634									
C6										.910									

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
a. Rotation converged in 9 iterations.

\* The variables have been removed in CFA because their factor loading was below 0.50.