



Creativity and Innovation in the Dubai Government: Exploring Underlying Factors at Individual, Team and Organisational Levels

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Foreword



“We may not live for hundreds of years, but the products of our creativity can leave a legacy long after we are gone.”

Mohammed bin Rashid Al Maktoum, Flashes of Thought

Preface

The Mohammed Bin Rashid School of Government (MBRSG, formerly known as the Dubai School of Government) launched in 2005 under the patronage of His Highness Sheikh Mohammed Bin Rashid Al Maktoum, UAE Vice President, Prime Minister and Ruler of Dubai as the first research and teaching institution focusing on governance and public policy in the Arab world. The School aims to support good governance in the UAE and the Arab world, and build future leaders through an integrated system offering education and training programs, as well as research and studies. The School's operations are founded on global best practices developed in collaboration with the Kennedy School at Harvard University, and it is considered a unique model for academic institutions in that it focuses on the practical side of governance. The School also collaborates with several government and private institutions both regionally and internationally such as The University of Manchester. The overall design and implementation of training programs is built on the foundation of scientific thought and is inspired by the reality of Arab public administration and with a view to addressing the issues and helping future leaders meet the challenges facing public administration in various parts of the Arab world. The School also organizes international and regional conferences and specialized workshops, and holds forums to facilitate the exchange of ideas and knowledge between Arab regions and the world.

MBRSG aims to promote good governance through enhancing the region's capacity for effective public policy. Toward this goal, the Mohammed Bin Rashid School of Government also collaborates with regional and global institutions in delivering its research and training programs. In addition, the School organizes policy forums and international conferences to facilitate the exchange of ideas and promote critical debate on public policy in the Arab world. The School is committed to the creation of knowledge, the dissemination of best practice and the training of policy makers in the Arab world. To achieve this mission, the School is developing strong capabilities to support research and teaching programs, including

- applied research in public policy and management;
- master's degrees in public policy and public administration;
- executive education for senior officials and executives; and,
- knowledge forums for scholars and policy makers.

Hence the edition of this innovation report produced by The University of Manchester Middle East Centre in collaboration with the Mohammed Bin Rashid School of Government. The innovation research report is a valuable resource for students, academics, policy-makers, researchers and businesses alike. It focuses on producing a report of the innovation era evidenced in the context of Emirate of Dubai.

This particular report, on the creativity and innovation in the Dubai Government highlights policy recommendations relating to individual, team and organisational factors in two broad themes: Culture and Leadership; and Supporting Practices. Creativity and innovation in the Dubai Government is substantially important work given the nature and mission of the MBRSG. This report was inspired by His Excellency Dr. Ali Sebaa Al Marri, Executive President of MBRSG. It is particularly relevant in the current climate of governance and Government, and will be of interest to those who want to keep ahead of these activities. In addition, MBRSG has launched a new degree, the Master of Innovation Management (MIM) which, is geared towards current and future managers and leaders in national and international public and private sector organizations. Therefore, this wealth of local examples and initiatives will fit comfortably into the teachings, applied research and theories utilised. The drive towards the meeting the UAE National Agenda 2021 is crucial in every government department across the UAE in alignment with the UAE National Innovation Strategy. I congratulate The University of Manchester Middle East Centre in collaboration with MBRSG.

Professor Raed Awamleh
Dean, Mohammed Bin Rashid School of Government

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Executive Summary

To provide support for the United Arab Emirates National Innovation Strategy, this study sought to explore creativity and innovation in the Dubai Government. First, employees of the Dubai Government (n=979) completed a research survey investigating individual, team, organisational and job design factors pertaining to creativity and innovation. Second, the written responses of Dubai Government employees to the question “What do you think could be done to encourage more creativity and innovation in your organisation?” were coded and analysed. These two analyses led to two broad classes of policy recommendations: Culture and Leadership; and Supporting Practices.

In summary, the survey respondents perceived the following two areas to be least conducive for creativity and innovation: support at work for creativity and innovation from supervisors and colleagues, and the creativity and innovation culture. The analysis of the written responses provided strong support for the development of these two areas. The written response themes suggested that the most important aspects to develop to encourage creativity and innovation were a supportive culture that values creativity and innovation. In addition, the themes of support in terms of Reward & Recognition, Risk-taking & Blame Culture, Openness to New Ideas, Empowerment and Transparency & Trust also pointed towards the importance of developing a climate, environment and work places that more explicitly embolden colleagues to have and share creative ideas and see them through to become innovations.

The final policy recommendations presented in this report outline 25 potential changes that could be made in relation to Culture and Leadership, as well as in terms of Supporting Practices.

Introduction

In 2015, the United Arab Emirates (UAE) recognized the Year of Innovation where many successful endeavours were performed in creating awareness programs, workshops, seminars, conferences, forums and debates all in the name of innovation. Particular focus is on the Emirate of Dubai with an ongoing goal to create and innovate within the public sector. The sudden interest and drive for innovation became one of the many vital dimensions within Dubai in improving government systems due to increasing affluence and expectations; creating a sense that government and public services locked into current models; the need for creating new ideas and public value; and creating opportunities for showcasing and utilising technology efficiently and effectively (Moonesar, 2015). An ever-increasing focus has also been dedicated to understanding how collaborations in the form of Public Private Partnerships (PPP) can be a source of creativity and innovation in government services.

However, there exists no unified nor universally accepted definition of creativity and innovation. Scholars have recently suggested, "Creativity and innovation at work are the process, outcomes, and products of attempts to develop and introduce new and improved ways of doing things." (Anderson, Potocnik & Zhou, 2014, p1297).

According to the UAE National Innovation Strategy (UAE NIS, 2015), Innovation within the UAE is defined as "the aspiration of individuals, private institutions and governments to achieve development by generating creative ideas and introducing new products, services and operations that improve the overall quality of life" (UAE NIS, 2015). It is clear that the UAE NIS accords with the latest academic conceptions of creativity and innovation.

The UAE National Innovation Strategy (UAE NIS, 2015) focuses on seven sectors including: renewable energy, transport, education, health, technology, water and space and was launched to achieve the UAE Vision 2021 (Gulf News, 2014; UAE NIS, 2015).

In order to provide support for the UAE NIS, this study sought to explore individual, team and organisational factors that underlie creativity and innovation in the Dubai Government, for it is via the actions of the employees of the Dubai Government that the UAE NIS will be realised.

The UAE became a country in 1971 where the work on creativity and innovation began through enhancements of its social and economic status and transformation into a primary destination for talent and businesses. Believing that innovation is the future of human investment, the UAE Leadership emphasizes its importance across all sectors through the UAE Vision 2021: "Innovation, research, science and technology will form the pillars of a knowledge-based, highly productive and competitive economy, driven by entrepreneurs in a business-friendly environment where public and private sectors form effective partnerships."

As a country, the UAE has recognized that innovation is essential for improving quality of life; increasing economic diversification; enhancing knowledge economy; improving competitiveness; creating high skilled jobs; and promoting entrepreneurship (UAE NIS, 2015). Therefore, innovation is key to promoting economic growth, increasing competitiveness and providing new job opportunities. UAE is the best Arab country for innovation and ranked 35th worldwide on the Global Innovation Index 2017. Investments in innovation across the UAE are estimated to be between AED 10 and 14 Billion yearly.

Innovation Milestones

Established in 2014, the Mohammed Bin Rashid Centre for Government Innovation (MBRCGI) aims to develop an integrated system of modern tools to help government entities to adopt innovation in the sector and provide innovative services to the public. The Centre is focused on establishing the culture of innovation in various areas of public sector activity. The operating model of MBRCGI is based on three main pillars: Innovative Ideas, Innovative Capabilities, and Innovative Culture. MBRCGI facilitates events and government innovation laboratories intended to support the development of innovative services and find solutions to challenges. It is also working on training national talents and promoting their capacity in government innovation, in addition to building a global network of partnerships with universities and specialized institutes such as Cambridge University. The following innovation laboratory events were created and launched prior and during the year of innovation in the UAE:

This study sought to explore individual, team and organisational factors that underlie creativity and innovation in the Dubai Government, for it is via the actions of the employees of the Dubai Government, that the UAE National Innovation Strategy will be realised.

- Cabinet Retreat, 2013;
- The Ministry of Environment & Water's Government Innovation Lab, 2014;
- The Ministry of Health's Government Innovation Lab, 2014;
- The Ministry of Social Affairs' Government Innovation Lab, 2015;
- The "Our Youth Innovates" Laboratory, 2015;
- The 'Gender Balance In Governments' Laboratory, 2015.

Cabinet Retreat, 2013

In December 2013, a Cabinet Retreat was organized by MBRCGI in an effort to develop government services, face field challenges and contribute to increasing the efficiency of government administrative work. A Government Innovation Laboratory was organized during the Cabinet Retreat that was held at Sir Bani Yas Island. This Laboratory aimed at putting forward and discussing innovative ideas with the audience of twenty three Cabinet Members, specialists, decision-makers and employees working within the Ministry of Health and Ministry of Education, to find immediate and innovative solutions for many of the challenges facing the two sectors.

Believing that innovation is the future of human investment, the UAE Leadership emphasizes its importance across all sectors through the UAE Vision 2021

The Ministry Of Environment & Water's Government Innovation Laboratory, 2014

As a result of the Cabinet Retreat, the Ministry of Environment & Water's Government Innovation Laboratory was launched with the aim of achieving the objectives of the UAE Vision 2021 in addition to the alignment with the UAE National Innovation Strategy and in an effort to improve environmental performance and sustainability. The Ministry of Environment and Water organized its first Government Innovation Laboratory on the 15th of October 2014 in order to find innovative initiatives and develop a comprehensive and integrated national strategy to preserve the environment and improve the quality of life in the UAE. The Laboratory brought forty participants together and succeeded in developing eight environmental programs to accelerate the implementation of the UAE National Innovation Strategy, primarily focusing on waste management, air quality and biological diversity in the UAE.

The Ministry Of Health's Government Innovation Laboratory, 2014

Following the previous innovation Laboratory, in line with the directives of His Highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE, to promote cooperation between the government and the private sectors to improve the health sector, the Ministry of Health organized the Government Innovation Laboratory on 4th February 2014 to "enhance cooperation between the government and private sectors, establish a high-quality health organization, and provide the best medical services to ensure safety among citizens and all members of society". This Laboratory, which involved 180 participants, contributed to proposing twelve general initiatives, emphasizing the UAE's utmost importance in the citizens' health.

The Ministry Of Social Affairs' Government Innovation Laboratory, 2014

The Ministry Of Social Affairs' Government Innovation Laboratory was launched on 10th June 2014 based

on the vision of His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Prime Minister of UAE and Ruler of Dubai, that defines social development as a main pillar in the comprehensive development process of, the Ministry of Social Affairs organized a Government Innovation Laboratory to discuss and develop appropriate solutions to major challenges faced by the social affairs sector. Social development can be achieved through the involvement of different society segments, including federal, local, private and civil organizations (Ghaus-Pasha, 2005). Fifty participants attended this Laboratory and succeeded in proposing eighteen initiatives and one program to enhance social cohesion and improve the quality of life of all society segments.

The “Our Youth Innovates” Laboratory, 2015

In collaboration with the Ministry of Culture, Youth and Community Development, the MBRCGI organized the “Our Youth Innovates” Laboratory on the 11th of February 2015 as part of a series of seminars. The Ministry, as well as officials from the Khalifa Fund and the Mohammed Bin Rashid Establishment for Young Business Leaders, invited twenty-five youth participants to take part in this Laboratory that lasted for half a day. During a brainstorming session, UAE National Innovation Strategy themes and strategic matters were tackled in order to develop new projects that have the potential to enhance the innovative spirit among youth and inspire them to take the lead in achieving the National Agenda’s objectives.

The ‘Gender Balance in Governments’ Laboratory, 2015

In cooperation with the Dubai Women Establishment, the MBRCGI organized the “Gender Balance in Government” Laboratory on the 11th of February 2015. This Laboratory was hosted as a private session under the patronage of Her Highness Sheikha Manal bin Mohammed bin Rashid Al Maktoum, President of the Dubai Women Establishment. Thirty participants, including a group of international experts who participated in the Government Summit, as well as senior officials and decision-makers, attended the session. An opening remark was given by Susan Colantuono, CEO and founder of “Leading Women”, in the gender equality field, this Laboratory aimed at “discussing global trends and policies that are related to the provision of equal opportunities and achievement of gender equality within governments”. Furthermore, the session touched on the cultural barriers, as well as policies and systems supporting the creation of a balance between the professional and family lives. It also highlighted the need to support women in leadership positions to bridge the gap between the two genders.

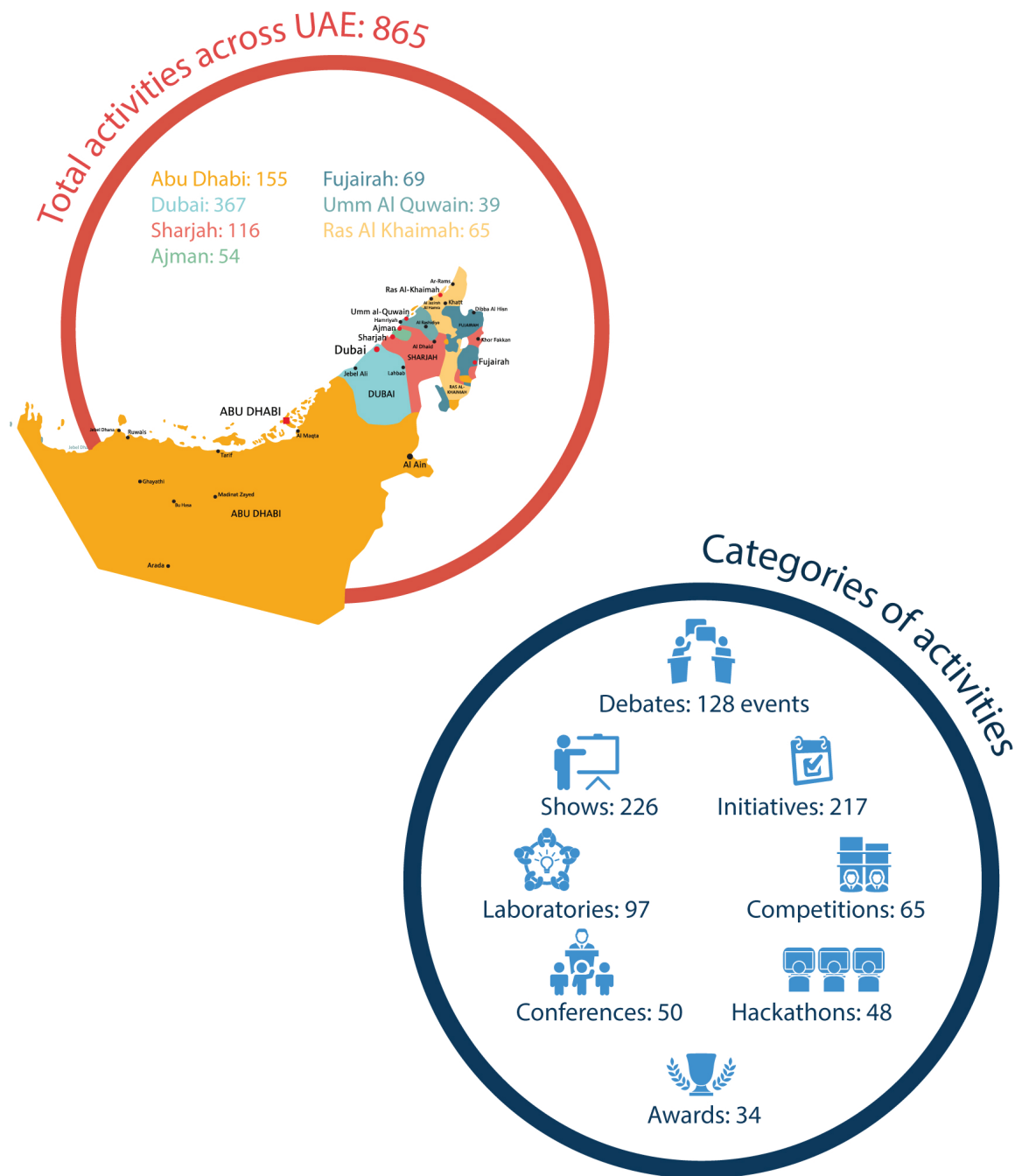
Dubai Innovation Week (2015)

During the 2015 year of innovation an entire week was dedicated to promoting and fostering innovation and creativity in the UAE. The infographic in Figure 1 below, illustrates that over 800 activities were launched

Figure 1. Infographic to illustrate the activities in Dubai Innovation Week 2015.

Over 800 activities for UAE Innovation Week

214 federal and local government and private bodies to participate in activities



Source: Prime Minister's Office, Dubai, UAE

Labour Appreciation Initiative / Community Development Authority in Dubai (CDA), 2015

In response to the 'Thank You' initiative launched by His Highness Sheikh Mohammed bin Rashid Al Maktoum, the Community Development Authority launched an initiative to honour the workers for providing essential services, and thus motivate and promote their self-confidence. This initiative involved a variety of activities, which were organized to cover the entire year, as well as emphasize the principles of professionalism, help develop the concept of teamwork, strengthen leadership skills, and enhance a sense of equality within the same community. The initiative has helped look into opportunities to promote cooperation with the private sector to increase corporate social responsibility, and organize professional workshops on teamwork, leadership, and legal advice. Within the same framework, a campaign entitled 'Smile on the Face' was launched during the month of Ramadan, through which free Iftar meals were provided to workers, as well as discounted telephone call rates and access to postal services.

Mohammed Bin Rashid Space Centre, 2015

Pursuant to the vision of the Emirates Institution for Advanced Science and Technology (EIAST) to raise awareness among the UAE society on the benefits of science by promoting space research programs, allocating funds for scientific projects, and implementing new projects, the Mohammed bin Rashid Space Centre was set up with the aim of positively affecting urban and rural development. This Centre provides a range of services, including drawing maps and conducting strategic analyses of various sectors, as well as searches for new ways to produce energy, develop and cultivate food crops, and even treat incurable and chronic illnesses. In the field of space research, the Centre enhances the capabilities of UAE scientists and technicians to enter the space and advanced technology field, through developing effective partnerships with other research organizations from around the world, such as NASA and other leading science centres. This would enable the UAE to shift from being a mere recipient of advanced technologies to a leading country in this field.

Global Star Rating System for Services, 2015

As part of the UAE government's commitment to implement the directives of His Highness Sheikh Mohammed bin Rashid Al Maktoum to move toward a smart government, and thus improve the overall performance of the government and provide high-quality public services, a 'Star Rating System' was launched on all service delivery channels and interfaces in the Federal Government, including call centres, websites, smart applications and customer service centres. This System aims at guaranteeing the provision of government services to customers of all categories and backgrounds in an innovative and creative way so as to help the UAE provide the best global practices in the field of government services.

Background to the Research

The continuous development of new ideas that can be transformed into valuable products, practices and services is of absolute importance for societal progression. Evidence-based recommendations for how best to encourage, manage and promote creativity and innovation are hard to find, especially advice that takes the unique culture of a region into account.

This study is comprised of four main sections. First, we will outline the key research regarding creativity at the levels of the individual, team and organisation. Second, we will present the results of a quantitative survey-based multi-level study of individual, team and organisational level factors pertaining to creativity and innovation in the context of the Dubai Government. Third, we will relate these findings to the written perceptions of Dubai Government employees who answered the question "What do you think could be done to encourage more creativity and innovation in your organisation?". Fourth, we will then outline suggested policy recommendations to emanate from this study, which will have taken into account the latest research and also the unique cultural context of the UAE.

Defining Creativity and Innovation

Creativity = the generation of ideas and suggestions

Innovation = implementing ideas to bring about new and useful products, services, processes and practices

Like many vital and complex human activities, creativity and innovation have proven difficult to define. For this study the following definition was adopted:

“Creativity and innovation at work are the process, outcomes, and products of attempts to develop and introduce new and improved ways of doing things. The creativity stage of this process refers to idea generation, and innovation to the subsequent stage of implementing ideas toward better procedures, practices, or

products. Creativity and innovation can occur at the level of the individual, work team, organization, or at more than one of these levels combined, but will invariably result in identifiable benefits at one or more of these levels of analysis” (Anderson, Potocnik & Zhou, 2014, p.1297).

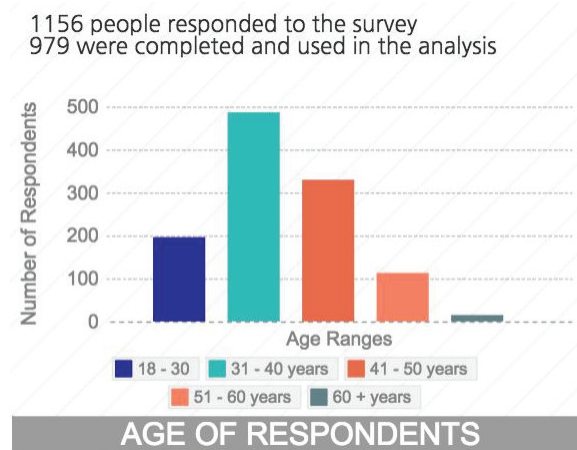
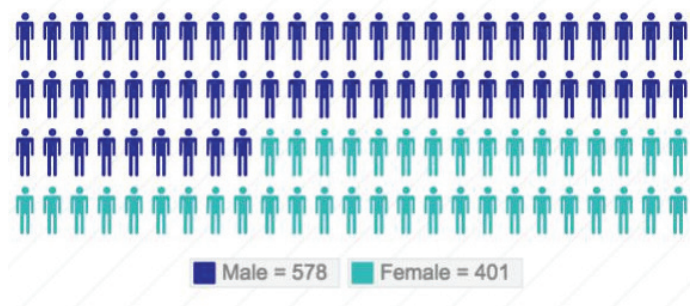
It is important to commence with clear definitions of creativity and innovation, because definition precedes measurement and understanding. Measurement and understanding accordingly are paramount to ensure that policies and recommendations for societies, organisations, teams and individuals are founded on rigorous, defensible findings. Sadly, the level of rigour found within this study is seldom replicated elsewhere. Most studies focus their measurement on one level alone – such as analysing individual creativity or team innovation only (Batey, 2012). This has led to considerable confusion for policy makers and leaders as little advice exists to understand how the levels of individual, team and organisation interact (Walker & Batey, 2014). It is only by exploring and managing multiple levels that leaders may make strategic decisions as to the extent to invest in developing the culture of the organisation, the dynamic of the team or the skills and confidence of the individual.

This study makes a genuine contribution to understanding the science of creativity and innovation. Not just for the Dubai Government and the UAE, but for organisations and governments everywhere

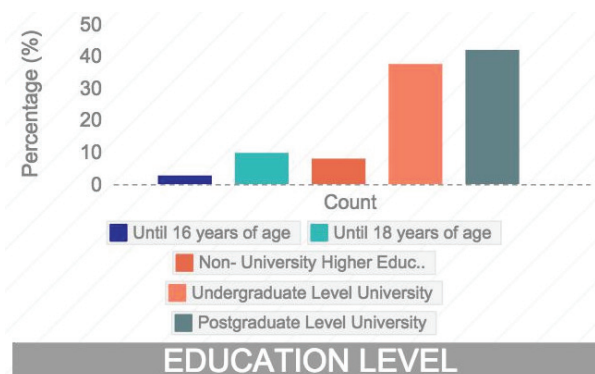
In accordance with the definition of creativity and innovation above, this study explored creativity and innovation by analysing key factors at the level of the individual, team and organisation. As a result, this study makes a genuine contribution to understanding the science of creativity and innovation. Not just for the Dubai Government and the UAE, but for organisations and governments everywhere.

About the Sample Used in the Study

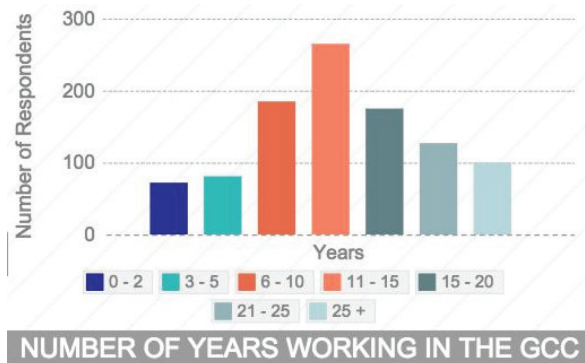
This study is based on the responses of 979 people (578 male) who completed a short survey about their experiences of creativity and innovation while working for the Dubai Government. The employees were also asked to write down their opinions as to how creativity and innovation could be better encouraged within the Dubai Government.



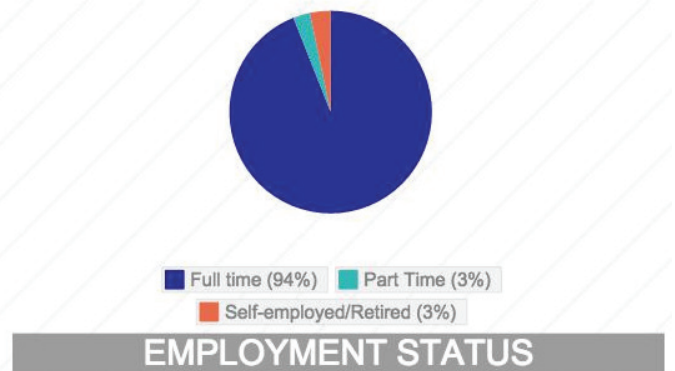
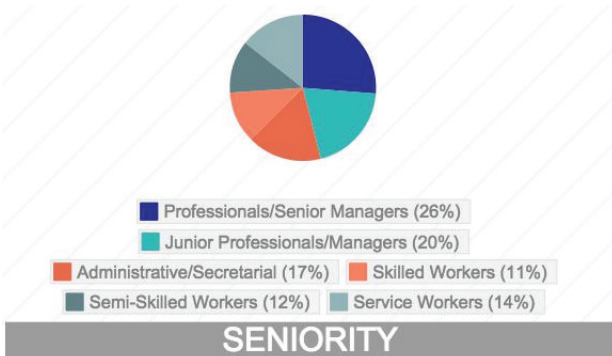
The mean age of the sample was 39.2 years old with a range from 17 to 70 years old.



79.6% of the sample possessed an undergraduate or postgraduate qualification.



The mean number of years worked in the GCC was 9.9 years with a range of 1 to 39 years.



Ninety-four per cent of the sample was employed full-time. Concerning seniority, 50.7% of the sample were managers or professionals.



The sample was drawn from organisations with varying sizes within the Dubai government, with 38.5% of the sample working in organisations of more than 5,000 employees.

Detailed information about the sample is provided in the Appendix.

Individual Creativity and Innovation

There is very little overlap between how intelligent someone is, and how creative and innovative they are

The bulk of studies of creative idea generation and to a lesser extent those that have considered innovation implementation have focussed at the level of the individual (Batey & Furnham, 2006). This section will explore intellectual, personality, motivational and confidence variables, to conclude that individual creativity and innovation in the context of this study is best assessed through Creative Confidence and Innovative Behaviour.

Creativity and innovation research of individuals started with explorations of intellectual variables (Batey, Rawles & Furnham, 2009). The earliest studies found a modest relationship between intelligence and measures of creativity and innovation (Dearborn, 1898; Hargreaves, 1927). Latter studies examining different forms of intelligence and knowledge similarly found modest relationships to creativity and innovation (Batey, Chamorro-Premuzic & Furnham, 2009). An analysis that drew together the findings from many different studies, found that the overlap between creativity and innovation with intelligence is minimal (Kim, Cramond & VanTassel-Baska, 2010). In summary, an individual's level of intelligence is barely related to their level of creativity and innovation.

There are key personality traits that predict creativity and innovation to look for during recruitment

After studying the link of intelligence to creativity and innovation, researchers turned their attention to personality and character (Batey & Furnham, 2006; Batey, Furnham & Safiullina, 2010). The most common framework for studying personality is the Big 5 (Hughes, Furnham & Batey, 2013), which suggests there to be 5 fundamental personality factors that underlie people's typical approach to thinking, feeling and behaving (Costa & McCrae, 1992). A description of the Big 5 personality traits is provided in Table 1.

Table 1. A description of the Big 5 personality traits

Name of Personality Trait	High scorers are more likely to be...	Low Scorers are more likely to be...
Openness to Experience	Imaginative, curious, open-minded	Practical, conventional, skeptical
Conscientiousness	Organised, self-directed, ambitious	Spontaneous, unstructured, unambitious
Extraversion	Outgoing, enthusiastic, active	Quiet, cautious, independent
Agreeableness	Trusting, caring, compliant	Uncooperative, argumentative, uncaring
Neuroticism	Prone to stress, worry and negative emotions	Tough-minded, calm, even-tempered

Adapted from Costa & McCrae (1992)

Following roughly 40 years of studies, recurring personality traits have been found to predict the likelihood that an individual will be highly creativity and innovative (Hughes, Furnham & Batey, 2013). The trait most often found to predict creativity and innovation is Openness to Experience; the trait concerned with inclinations towards curiosity, exploration, new ideas and new values (McCrae, 1987).

During recruitment look to identify passionate people and match their interests and passions to the demands of the job role

Other personality traits have been found to predict creativity and innovation in the individual, but the relationships vary according to the area or domain (Batey, Chamorro-Premuzic & Furnham, 2010; Furnham et al., 2011). A summary of the relationship between the Big 5 personality traits and creativity in different domains is presented in Table 2. The policy implication is that during recruitment and succession-planning, there are key personality traits and characteristics to assess in order to identify highly creative

Reward schemes for creativity and innovation should reward employees for taking part in creative thinking and innovative doing, not only the successful completion of a project

and innovative individuals. For the context of creativity and innovation in the Dubai Government, it may be suggested that recruitment processes should look to identify employees who possess high levels of Openness to Experience, fair levels of Extraversion, moderate levels of Conscientiousness and Agreeableness, and low levels of Neuroticism.

Table 2. 'Typical' Personality Profiles for Creativity in Different Domains

Personality Trait	Artistic Creativity	Scientific Creativity	Everyday Creativity
Openness to Experience	+++	+++	++
Conscientiousness	--	+++	+
Extraversion	--	-	++
Agreeableness	--	-	+
Neuroticism	+++	--	-

Table adapted from Batey & Furnham (2006)

n.b. +++ = Very strong positive relationship; ++ = Strong positive relationship; + = Moderate positive relationship; --- = Very strong negative relationship; -- = Strong negative relationship; - = Moderate negative relationship

Following the interest in the relationship of personality traits with creativity and innovation, researchers turned their attention to motivational orientations. In relation to creativity and innovation research, many studies considered the balance and relevance of two primary motivational drivers: Intrinsic and Extrinsic motivation.

Intrinsic motivation can be defined as “the degree to which creators engage in their work for the sake of the process itself” (Forgeard & Mecklenburg, 2013, p. 255), and relates to an individual carrying out a task because they are inherently passionate, engaged and interested in it. Extrinsic motivation can be defined as “the degree to which creators engage in their work for the sake of outcomes external to the process” (Forgeard & Mecklenburg, 2013, p. 255) and relates to an individual carrying out a task because it allows them to meet an external objective (e.g. a directive provided by a leader or to fulfil the request of a service user) or to achieve a personal benefit such as status or money. Much of the research literature equates Extrinsic motivation with reward.

Early research in this area tended to find that Intrinsic motivation is a strong driver of creativity and innovation (Amabile, 1983). The reason being, that when an individual is passionate and engaged in a task, they will invest more time and energy, and produce higher quality work. Latter research has found that when used in the appropriate manner, Extrinsic rewards can be facilitative of creativity and innovation (Eisenberger & Rhoades 2001). The evidence suggests rewards are most likely to be effective when directed towards encouraging people to engage in creative thinking, experimenting and trying out new approaches. These studies suggest that organisations should look to recruit candidates who are generally passionate and intrinsically motivated, as well as matching jobs, roles and tasks to the interests and passions of candidates. Further, reward schemes intended to encourage creative and innovative working should focus on rewarding the effort and engagement in the work – not solely focussed on successful completion.

The most recent area that researchers have investigated to understand individual creativity and innovation is Creative Confidence (often referred to as Creative Self-Efficacy; Tierney & Farmer, 2002). Creative Confidence relates to the self-belief an individual has to produce creative outcomes (Tierney & Farmer, 2002). Creative Confidence was used in this study, because as a variable it captures many of the key elements of the previous research on personality and motivational orientations. Creative Confidence has been found to be a strong predictor of creative behaviour at work (Tierney & Farmer, 2004). It is likely that the behaviour of leaders and colleagues at work will have a direct impact on an individuals' levels of creative confidence – something that this study will test by measuring the extent to which employees felt supported to be creative and innovative by their leaders and co-workers.

How we measured Individual Creativity and Innovation in this study

This study employed two different measures of individual creativity and innovation, in addition to a measure of the extent to which individuals perceived themselves to have Decision Making Autonomy. Lastly, we asked each respondent if they could think of any ways that creativity and innovation could be improved within their part of the Dubai Government.

Diversity is a key ingredient for creativity and innovation in teams

Creative Confidence was measured using the Creative Self-Efficacy Scale (Beghetto, 2006), which is a 3 item scale responded to on a 6 point likert scale, where responses may vary from 'Strongly Disagree' through to 'Strongly Agree'. "I am good at coming up with new ideas" is an example item.

Leaders should try to create a team climate where colleagues feel supported to be creative and innovative

Innovative Behaviour was measured using an adapted version of the Innovative Behaviour Scale (Scott & Bruce, 1994), which is a 6 item scale responded to on a 6 point likert scale, where responses may vary from 'Strongly Disagree' through to 'Strongly Agree'. "I investigate and get resources needed to implement new ideas" is an example item.

Decision Making Autonomy was measured using the Decision Making Autonomy Scale from the Work Design Questionnaire (Morgeson & Humphrey, 2006), which is a 3 item scale responded to on a 6 point likert scale, where responses may vary from 'Strongly Disagree' through to 'Strongly Agree'. "The job allows me to make a lot of decisions on my own" is an example item.

Having briefly outlined the extensive research literature pertaining to individual creativity and innovation, the levels of team and organisational creativity and innovation will be explored.

Team Creativity and Innovation

Much of the research on team creativity and innovation has focussed on two areas: Diversity and innovation climate.

The 'Strength in Diversity' principle states that the more diverse and inclusive the members of a team, the more creative and innovative they will be. The reason for this, is that team members with diverse traits and backgrounds will approach problems and opportunities differently, produce ideas using different knowledge and experience, and be able to challenge one another to think differently (Batey, 2015). The policy implications are that to encourage creativity and innovation in teams, it is important to recognise, encourage and manage diversity. Not simply in terms of gender, age or ethnicity, but also in terms of areas like expertise, knowledge, hierarchy and functional area.

Team creative climate refers to the extent to which team members perceive the team working environment to be conducive to and supportive of creative thinking (Anderson & West, 1998). Studies have demonstrated that when teams perceive the climate to support creative thinking, the innovation performance of the team is enhanced (Fagan, 2004; Madjar, Oldham & Pratt, 2002).

A culture that encourages creativity and innovation is vital

How we measured Team Creativity and Innovation in this study

This study focused on the creative and innovative team climate created via the Work Support offered by leaders and colleagues and focussed on three specific areas of support; encouragement, listening and provision of feedback.

Work Support

was measured using the Supervisor and Colleague Support for Creativity and Innovation Scale created specifically for this study. This is a 6 item scale responded to on a 6 point likert scale, where responses may vary from 'Strongly Disagree' through to 'Strongly Agree'. "My supervisor gives me useful feedback about my ideas at work" is an example item.

The assessment of creative climate, as measured by Work Support for Creativity and Innovation, allowed us to test the extent to which Work Support leads to higher levels of Creative Confidence and Innovative Behaviour in individuals.

Further in the final part of this section, the written responses by employees to the question “what could be done to improve creativity and innovation where you work?” will provide additional insights regarding the theme of leader and colleague support behaviours.

Organisational Creativity and Innovation

When considering organisational variables that relate to creativity and innovation the focus has been primarily on two areas: The importance of individual Employee or Work Engagement with the organisation and also the culture of the organisation.

Work Engagement has been considered to be the opposite of burn-out, and has been defined as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption.” (Schaufeli, et al., 2002). Put simply, highly engaged employees direct more energy, motivation and effort in order to help an organisation reach its goals. Work engagement has been found to be an important component for high levels of creativity and innovation (Haq, et al., 2010).

Organisational culture may be defined as the values, norms, attitudes and behaviour patterns that a group of people have in common (Herzog, 2011) and has been found to be very important for creativity and innovation at the organisational level (Jaruzelski, Loehr & Holman, 2011) as well as for individuals (Amabile et al., 1996). This study assessed organisational culture with specific reference to creativity and innovation culture using a recently developed model (Walker, 2015) that posits there to be 12 major dimensions of creativity and innovation culture which are outlined in table 3. The implications of this model, is that to create a culture that supports and promotes creativity and innovation requires multiple activities, from the design of jobs, to awareness of goals and objectives, through to systems for generating ideas and means of understanding risk.

Table 3. Major Dimensions of Creativity and Innovation Culture, derived from Walker (2015)

Dimension	Definition
Valuing Creativity and Innovation	An organisation’s recognition and reward of creativity and innovation
Team Cohesion	The level of trust and interpersonal understanding within a team
Autonomy	The level of control an individual feels they have over their work
Goal Awareness	A team’s understanding of, and agreement with, their objectives
Resources	Availability of facilities and resources
Risk	An organisation’s approach to risk and level of risk aversion
Expertise	The organisation’s willingness to draw on experts and a variety of knowledge when needed, from within and outside the organisation

Dimension	Definition
Achievement	The extent to which individuals and teams take responsibility for success and consider their work important for the success of the organisation
Ideation Systems	Idea generation and the processes an organisation uses to encourage it
Internal Networks	The extent to which employees know people in different parts of the organisation
Internal Collaboration	Different parts of an organisation working together throughout the innovation process
External Collaboration	An organisation's relationships with other organisations, customers and suppliers, and using these relationships to develop new products/processes/services

How we measured Organisational Creativity and Innovation in this study

This study focused on Work Engagement, in addition to the organisational culture for creativity and innovation.

Work Engagement was measured using the Utrecht Work Engagement Scale (Seppälä, et al., 2009). This is a 9 item scale responded to on a 6 point likert scale, where responses may vary from 'Strongly Disagree' through to 'Strongly Agree'. "I am enthusiastic about my job" is an example item.

Creativity and Innovation Culture was measured using a shortened version of the Creativity and Innovation Climate Survey (Walker, 2015) based on the model introduced above. This is a 12 item scale responded to on a 6 point likert scale, where responses may vary from 'Strongly Disagree' through to 'Strongly Agree'. "We work with other organisations to develop new products, processes or services" is an example item.

Restating the Purpose of the Research

Overall, this study tested the relationships to be found between Creative Confidence, Innovative Behaviour, Decision Making Autonomy, Work Support, Work Engagement and Creativity and Innovation Culture in order to produce an empirically-derived set of recommendations of what supports greater Creative Confidence and Innovative Behaviour in employees of the Dubai Government. Further, the findings from the survey will be augmented with the written responses by respondents as to what they perceived could be done to improve creativity and innovation in the Dubai Government.

Results and Findings

This study comprised two parts. First, there were data gathered and analysed from a survey. The survey data allowed us to test the potential relationships between Creative Confidence, Innovative Behaviour, Decision Making Autonomy, Work Support, Work Engagement and Creativity and Innovation Culture. Second, we asked each respondent to write down what they thought could be done to encourage more creativity and innovation in their part of the Dubai Government. The responses to this question have been subjected to content analysis to explore the frequency with which major themes arose. The results of this qualitative analysis are presented at the end of this section. Finally, we will draw together the findings from the quantitative survey with the qualitative analyses to highlight key themes with potential importance for policy recommendations.

The Survey Findings

The overall findings of the results and the correlations between the variables in the survey will be presented first. There will then be a brief exploration of differences regarding both gender and seniority pertaining to the study variables. Then, to provide a simple, but powerful insight into how the levels of individual, team and organisational creativity and innovation interact, a model will be presented.

Relationships Between the Key Variables: Highs and Lows

Figure 2 presents the mean scores for each of the variables considered in this study: Creative Confidence, Innovative Behaviour, Decision Making Autonomy, Work Support, Work Engagement and Creativity and Innovation Culture.

Each variable is presented as a mean average score for each item of each questionnaire measure. For example, a score of 5, would mean that the average response to the items in a questionnaire was 5. As every questionnaire item was assessed using a 6 point likert scale, the findings for each variable in figure 2 can be easily compared.

As can be seen in Figure 2, employees of the Dubai Government reported themselves as having a high level of Creative Confidence (mean = 5.02). Thereby indicating that employees perceive themselves to be confident to produce creative ideas and suggestions. In comparison, the mean score for Innovative Behaviour was lower (mean = 4.70). This suggests that employees in the Dubai Government feel more confident in their abilities to produce creative ideas, than they feel themselves to be able to turn those ideas into innovations. The model presented at the end of this section will try to explain what drives these differing perceptions.

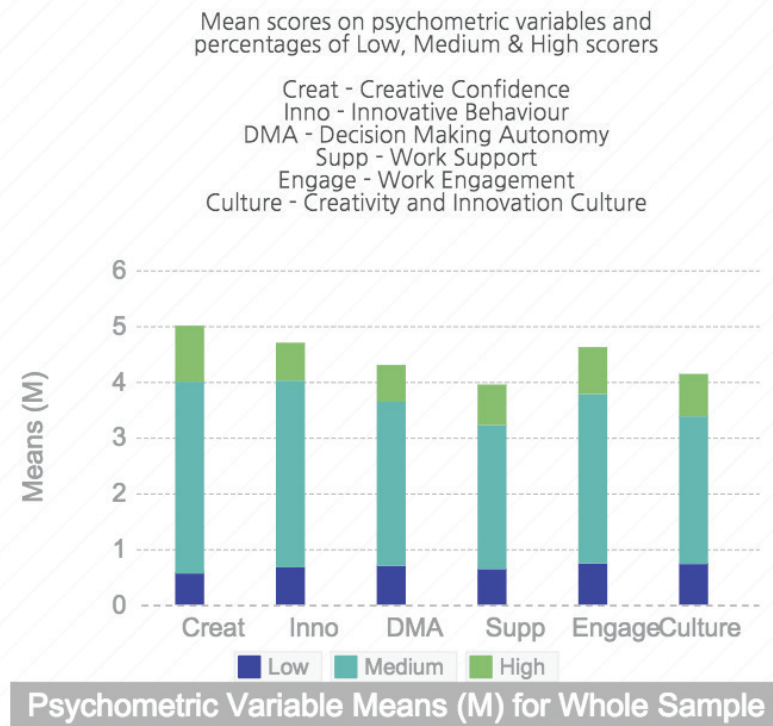


Figure 2. Mean scores for Creative Confidence, Innovative Behaviour, Decision Making Autonomy, Work Support, Work Engagement and Creativity and Innovation Climate.

n=974

(c.f. Table 5 in the Appendix for detailed information about the mean scores and standard deviations for each variable).

The lowest score observed (mean = 3.95) was for the extent to which employees perceived themselves to receive Work Support (encouragement, listening and provision of feedback) from supervisors and colleagues relating specifically to creativity and innovation. This indicates that this may be an issue perceived by Dubai Government employees and that it may prove useful to invest in supervisor and colleague training to develop supportive behaviours that encourage employees to be more creative and innovative – building the right team climate.

In order to explore the basic relationships between each of the study variables, Pearson correlations were conducted and are presented in Table 4. Correlations are an estimate of the degree to which two variables are related. Correlations range from 0 (no relationship) to 1 (perfectly related). For example, we can see from Table 4 that Creative Confidence is correlated with Innovative Behaviour at .81, which is close to 1 and represents a strong correlation. However, Creative Confidence is correlated with Culture at .08, which is very close to 0 and represents a weak correlation. We can also see that both age of the employee and size of the organisation are unrelated to any of the variables, showing that there is no relationship.

Table 4. Correlations between all study variables derived from the standardised measurement model

	Correlations							
	1	2	3	4	5	6	7	8
1 Creative Confidence	-							
2 Innovative Behaviour	.81	-						
3 Decision Making Autonomy	.17	.26	-					
4 Work Support	.13	.32	.59	-				
5 Work Engagement	.25	.32	.65	.50	-			
6 Creativity and Innovation Culture	.08	.23	.62	.72	.64	-		
7 Age	-.05	-.05	-.01	-.05	-.01	-.04	-	
8 Size	.02	-.01	-.02	.00	.05	.03	.03	-

n=979

These findings suggest that neither the age of the employee nor the size of the part of the Dubai Government that they work for are related to individual, team or organisational factors for creativity and innovation. If we wish to understand what influences creativity and innovation we must consider other factors. This will be achieved by examining gender and seniority differences.

The final observation regarding the correlations, is that many variables are intercorrelated and may work together to influence Creative Confidence and Innovative Behaviour. This will be examined by producing a model to explore the interrelationships between the key variables.

Exploring Differences Between the Study Variables: Gender and Seniority

In order to better understand the results for each of the main study variables a series of analyses were conducted to examine the extent to which there were differences between males and females and also differences according to the seniority of the employee. Figure 3 shows the differences observed between males and females for each variable in the study.

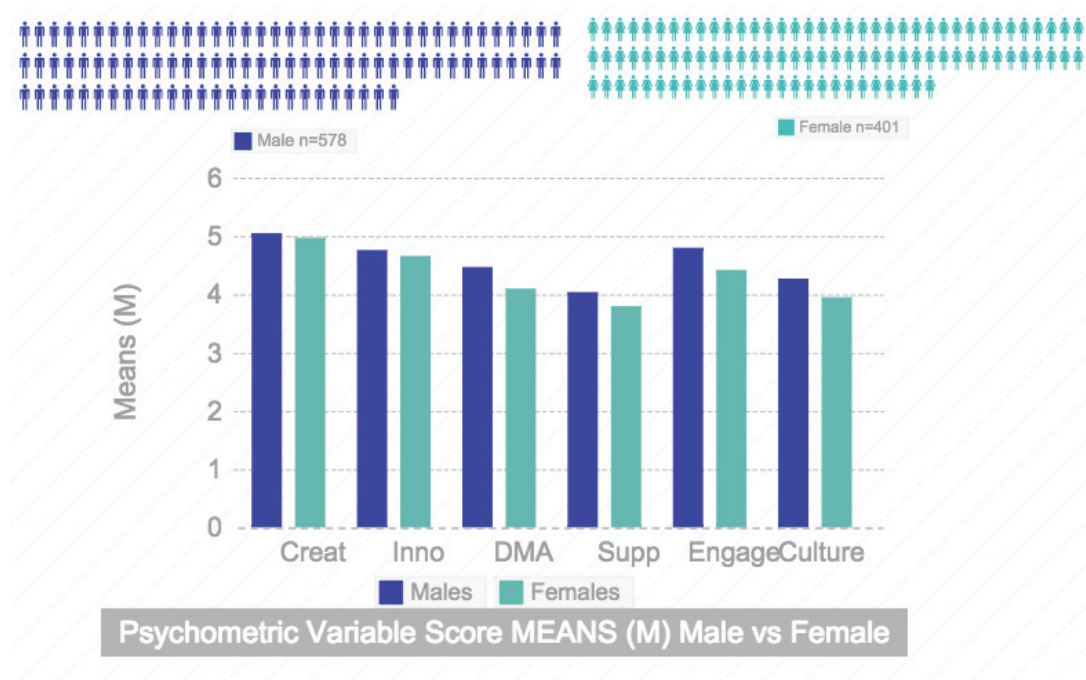


Figure 3. Comparison between males and females of the mean scores for Creative Confidence, Innovative Behaviour, Decision Making Autonomy, Work Support, Work Engagement and Creativity and Innovation Climate.

N.b: Creat = Creative Confidence, Inno = Innovative Behaviour, DMA = Decision Making Autonomy, Engage = Work Engagement, Supp = Work Support, Culture = Creativity & Innovation Culture. n=979. (c.f. Table 5 in the Appendix for detailed information about the statistical analyses behind these results.)

The results of the analyses considering gender differences show that there are very small differences between males and females for each of the variables. In every case, males scored higher for each variable. This finding is consistent with the research studies that have looked at gender differences in responses to questionnaires (Petrides & Furnham, 2000) – whereby males tend to regularly provide higher ratings. However, it is important to recognise that the results may also point to a subtle difference between how male and female employees perceive the prevalence of the antecedent conditions for creativity and innovation at work. Of the differences between males and females, two were not statistically significantly different; Creative Confidence and Innovative Behaviour. However, four differences between males and females were found to be statistically significant.

There were no significant gender differences for the (arguably) two principal variables in this study: the final outcome variables of Creative Confidence and Innovative Behaviour. This is important and encouraging. There are no significant differences in the extent to which males or females perceived themselves to be confident to share their new and useful ideas, or turn ideas into valuable processes, products or services. However, the results do indicate that the antecedent conditions regarding the team climate, engagement, leadership and colleague support or culture for creativity and innovation are perceived differently by women and men. The variables Decision Making Autonomy, Work Support, Engagement and Culture were consistently perceived to be lower for females than for males.

This suggests that women perceive themselves to have less opportunity to have autonomy over decision-making, to receive less support from their colleagues or supervisors to be creative and innovative, to feel less motivated and engaged by their organisation and to perceive the overall organisational culture to be less supportive for creativity and innovation. However, for a balanced perspective, it is important to note that the differences between males and female perceptions regarding the study variables are small.

After considering if there were significant gender differences, we also examined if there were effects to be found for an employees' level of seniority. We examined whether employees across the 6 levels of seniority differed on any of the study variables. Just a single difference was observed, whereby Decision Making Autonomy increased with each level of seniority. Comparing the extremes, professionals/senior managers reported 15% more Decision-Making Autonomy than service workers. This would appear to be completely in keeping with what would be expected of employees at those levels of seniority, thereby suggesting that there are no significant challenges perceived by employees for creativity and innovation that arise out of level of seniority.

In order to explore more nuanced relationships between the study variables and to find potential mechanisms for how team, organisational or work-design variables influence individual Creative Confidence and Innovative Behaviour we now move to present a model simplifying and rationalising the key variables.

A Model to Explore Relationships Between the Levels of the Individual, Team and Organisational Variables for Creativity and Innovation

A significant weakness of many studies of creativity and innovation, is that they tend to focus on a single level of analysis alone (e.g. team creativity). This study makes a contribution to the science of understanding creativity and innovation, by building an empirical multilevel model to test the relationship between individual, team and organisational creativity and innovation factors, which is presented in figure 4. This allows a deeper understanding of the complex interrelationships between the key variables, to build on the simple relationships we have explored above (Walker & Batey, 2014). Detailed statistical information about the model is presented in the Appendix.

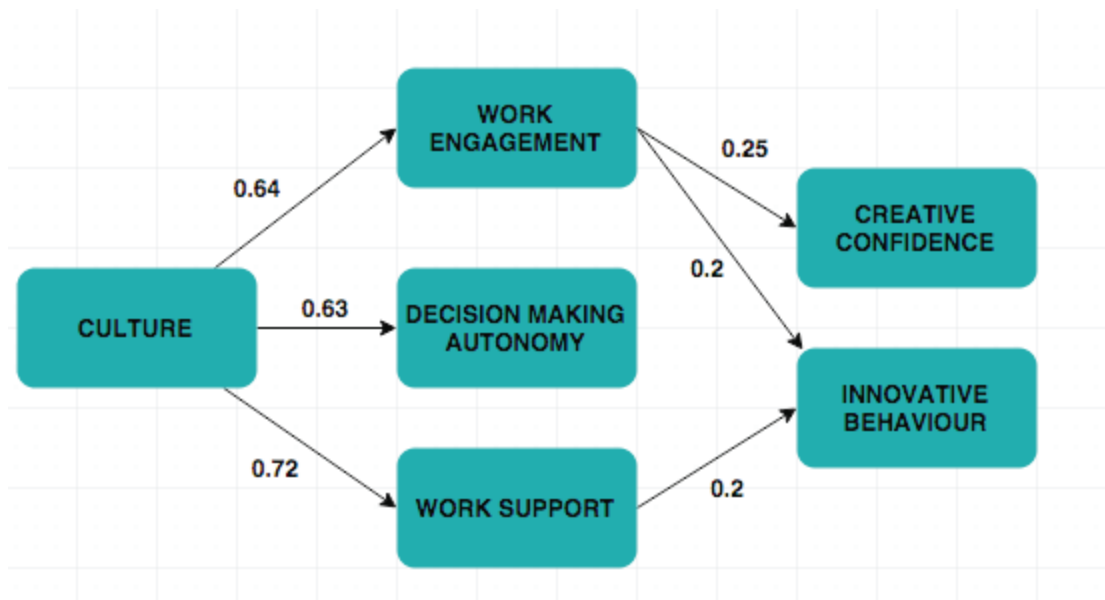


Figure 4: A Model to Explore Relationships Between the Levels of the Individual, Team and Organisational Variables for Creativity and Innovation

n.b. Culture = Creativity & Innovation Culture
n=979

This model shows that Creative and Innovative Culture drives the key factors of Work Engagement, Work Support and Decision-Making Autonomy and that in turn (some) of these variables drive individual Creative Confidence and Innovative Behaviour. This illustrates the vitality of the organisational culture for creativity and innovation. However, close scrutiny shows that it is only Work Engagement and Work Support that drive Creative Confidence and Innovative Behaviour. While the Culture does lead to higher levels of perceived Decision-Making Autonomy, this does not result in a sense that employees are any more creative or innovative.

When the Culture is supportive of Creativity and Innovation, it is perceived to lead to higher levels of Work Engagement and motivation (in individual employees) and also higher levels of Work Support for creativity and innovation (from supervisors and colleagues). In turn this perceived Engagement and Work Support leads to higher levels of Creative Confidence and Innovative Behaviour.

First, it may be hypothesised that when the Culture is supportive of Creativity and Innovation it directly encourages employees to engage passionately and deeply with their jobs. Secondly, a Creativity and Innovation Culture also makes it clear to supervisors and colleagues that creative ideas and suggestions should be afforded attention, listened to and given feedback. In turn, when employees are given Work Support, they perceive themselves to more actively engage in actual innovative behaviours. However, it is the extent to which employees feel passionate and engaged with their jobs and organisation that has the strongest effect – leading to both increased Creative Confidence and Innovative Behaviour. The model also makes it clear, that simply providing employees with more Decision Making Autonomy does not drive creativity or innovation.

The policy implications to emanate from this empirical model are clear. First, developing a Creative and Innovative Culture is vital, as it drives and provides energy for the other factors. In the first instance, the development of the appropriate culture will involve actions to embed each of the 12 areas as outlined in Table 3 (Walker, 2015). Second, when a Creative and Innovative Culture has been encouraged, additional effort and training should be provided to supervisors and colleagues regarding how best to provide a supportive team climate for creativity and innovation. This model indicates that simply providing employees with more Decision-Making Autonomy or directly attempting to build their Creative Confidence or Innovative Behaviour Skills will not be as effective as addressing these issues via the route of the Culture.

Analysis of the Written Responses

To provide a richer context and understanding of the variables analysed from the survey and the resultant model, the analyses of the written responses to the question: “What do you think could be done to encourage more creativity and innovation in your organisation?” will be outlined and integrated. This approach allows us to move from the powerful, but limited insights to be gained from a standardized survey, to also consider the rich written views and perspectives of the respondents.

First, all the responses to the question “What do you think could be done to encourage more creativity and innovation in your organisation?” were read through without coding or analysis to ensure a wide appreciation of the responses. Second, all the responses were then read again with a theme or coding applied to each response. Third, the themes and coding for the responses were read again and the frequency with which each theme occurred noted. The results of this qualitative analysis are presented in table 5, where the label for each theme is outlined, the frequency of the theme’s occurrence reported and a description provided alongside verbatim examples.

Table 5. Themes to emerge from the written responses to the question: “What could be done to encourage more creativity and innovation in your organisation?”

Theme (n)	Description	Examples (in their original format)
Valuing Creativity & Innovation (n=41)	A supportive environment that values creativity and innovation	<p>“Foster an open, creative work environment”</p> <p>“people need to be motivated by giving all chances to grow and thrive to show creavitive and voice their opinion and ideas, same level for people doing same job”</p> <p>“A strong support has to be provided which is somehow lacking in the system”</p>
Reward & Recognition (n=33)	Rewarding and recognising creative ideas and innovative contributions	<p>“Reward and compensate employees for any ideas that he contribute in an organization”</p> <p>“credit must be given where credit is due”</p> <p>“To encourage leaders to give the right credit to their creative teams”</p>
Diversity & Inclusion (n=33)	Encouraging diversity across age, gender, hierarchy, function and personality); a workplace that includes all employees	<p>“We must take ideas from senior experienced staff as well as the charmness of new Generation...”</p> <p>“Employ more female staff”</p> <p>“Creative thinkers are not being taken into limelight or appreciated due to the bias in the hierarchical structure”</p> <p>“I do wish more employees were involved in decisions of major change made that affect the working environment”</p> <p>“recognizing people who do good work irrespective of race, nationality or gender etc”</p>

<p>Cross-Functional Teams (n=25)</p>	<p>The encouragement of cross-functional working, knowledge-sharing, communication and collaboration</p>	<p>“More cross-sectional collaboration and communication. Our department very much works in silos,” “with different sections rarely (if ever) discussing ideas or projects. This often means that new, large projects are announced, and I had never heard of these projects until that point. More collaboration means we could devise ideas, strategies, and procedures that would benefit (or at least complement) the work of various sections, not just one.” “we should more have brainstorming between Departments about daily basis jobs” “Improved communication across technical divisions of the organization”</p>
<p>Goal Awareness (n=24)</p>	<p>The importance of clear objectives, focus and goals</p>	<p>“when the management has clear objectives , creative and innovative ideas would be easier to implement” “A culture of Strategic Planning & Performance Management would encourage more creativity by setting clear direction for people to explore new ideas” “Focus on outcomes rather than the process”</p>
<p>Creativity & Innovation Training (n=23)</p>	<p>Workshops and Training for Creativity and Innovation</p>	<p>“Establishment of courses and seminars that focused on the concept of innovation and creativity” “Train staff in innovation techniques” “Training leaders how to support coworkers & be creative leaders”</p>
<p>Risk-Taking & Blame Culture (n=21)</p>	<p>Greater openness to risk-taking and the avoidance of blame culture</p>	<p>“Ability to understand what risk is and how to accept it when compared to potential profit” “understand that failing is part of learning and can be mitigated for impact” “If top management does not stimulate bottom up development, creativity and courage and maintains a culture of harsh punishment for failure, it will kill off any initiative and creativity” “Offering a new idea is interpreted as being a criticism with how the work is currently being done (and thus, by extension, a criticism of the people doing that work), which results in people getting defensive and shutting down any debate”</p>
<p>Human Resource Practices (n=20)</p>	<p>Activities involving recruiting, retaining, developing and promoting employees; Talent Management; building teams</p>	<p>“the right person in the right position” “government should invest in the right talent and do research and try to retain them” “In GCC, unlike in western world, age and number of years in the organisation (and not the quality of work) is the main criteria for promotions or for becoming the supervisor or head of the department.” “analyze every team member personality trait and build up teams that can harmonize then assign the objective based upon the qualities you have”</p>
<p>Resources & Implementation (n=18)</p>	<p>The provision of resources and budget in order to facilitate innovation implementation</p>	<p>“Allocating funds, or budget to implement agreed innovation should be provided and separate from normal yearly budget of the organizations” “Creative energy and innovative ideas are not the problem. The UAE is bursting with inspired, creative people. The problem lies in execution”</p>

Openness to New Ideas (n=17)	A workplace environment and leadership style that fosters open-minded communication	<p>“being open minded when hearing the ideas from your employees, never say no with out knowing the full idea”</p> <p>“Greater level of communication and openness”</p> <p>“I think that ego of supervisors is the main barrier to innovation</p>
Empowerment (n=13)	Empowering employees	<p>“Give the freedom to the people to think, to act, to experiment, freely without pressuring them or expecting results always.”</p> <p>“Freedom to expand and progress in an acceptable direction”</p> <p>“The current leadership style is top to bottom, the lower strata of people are not considered in anything”</p>
Education (n=10)	The role of education in shaping creativity and innovation behaviours	<p>“creativity should start from school. if the people who are at work were not used to creative thinking while they were in school it would be very hard to” teach old dogs new tricks”</p> <p>“More encouragement needs to be done from school level, to get the most innovative ideas.”</p> <p>“Also, educating youth and pushing them to pursue the things they’re passionate about and not just following the norm, because that is where they can be creative.”</p>
Creativity Teams & Departments (n=9)	Creating specialist R&D and creativity and innovation teams and departments	<p>“To encourage more creativity and innovation a dedicated department should be made available in Government sectors”</p> <p>“develop a research and development department and equip man power to carry out research in coordination with other functional department”</p> <p>“A pipeline for research and development of innovative concepts focused on addressing known organizational or customer needs is required beyond the legacy government funding models in place currently. R&D is too often not rooted in strategy and too often falls below the swim line of funding”</p>
Benchmarking (n=6)	Comparing policies and performance of Dubai Government with other institutions	<p>“Provide bench marking with other similar organizations around the world”</p> <p>“Comparative studies among different countries,- to do literature review as well as to find out best demonstrated practices as well as options for latest technologies, to reach out what possibilities for new innovations”</p>
Transparency & Trust (n=5)	Creating a trusting environment through transparency	<p>“Lack of transparency from higher to lower/technical teams create a atmosphere of untrust or suspicion at work”</p> <p>“please try as much as you can to say the truth and to be honest”</p>
Time (n=5)	Allocating time for creativity and innovation	<p>“Dedicate time”</p> <p>“Spend enough time brainstorming”</p>
Work pressure (n=4)	Reducing work loads	“Creating a comfortable environment for you employees , reduction of immense work load”

Salary (n=3)	Monetary and salary incentives	“Kindly increase the salary, since cost of living in dubai is very high. It will motivate us for more innovations.”
Intellectual Property Rights (n=3)	The protection of intellectual property rights	“the effective identification and or protection of innovative and creative individuals and or their ideas (intellectual rights”

The analysis of the written responses revealed there to be 19 different themes pertaining to the question “What could be done to encourage more creativity and innovation in your organisation?” The most common theme, with 41 occurrences, concerned the creation of a supportive organisational culture that demonstrates Valuing Creativity & Innovation. The least common themes, with 3 mentions, were Salary and Intellectual Property Rights. Figure 5 shows the relative frequency of each of the themes.

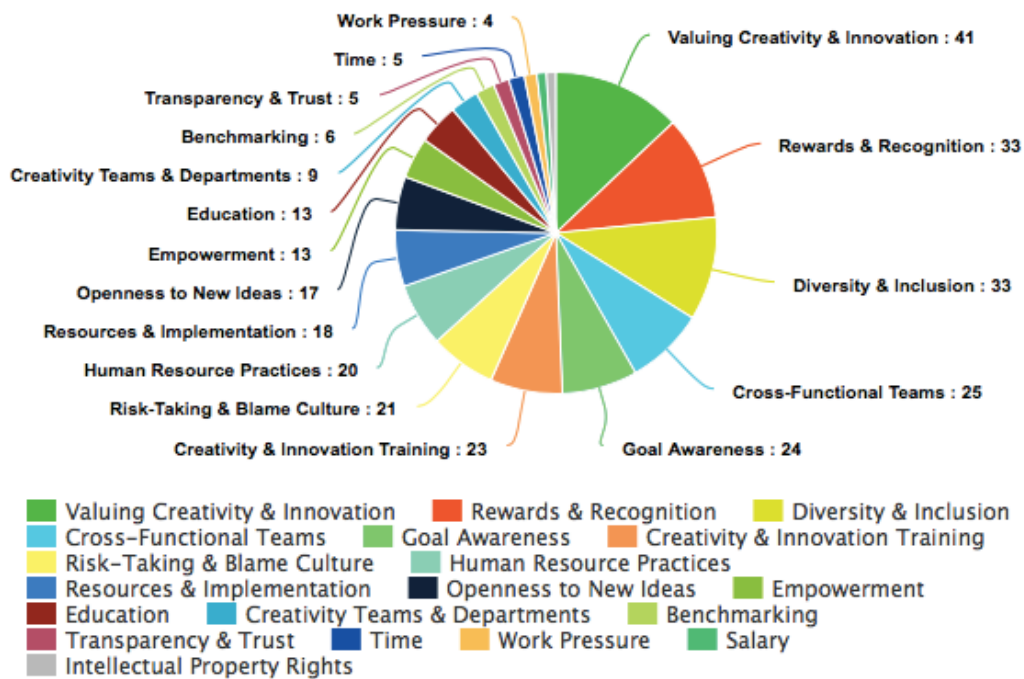


Figure 5. A pie chart illustrating the frequency of themes to emerge from the written responses to the question: “What could be done to encourage more creativity and innovation in your organisation?”

Each of the themes to emerge from the analysis of the written responses can be seen to be relevant for encouraging creativity and innovation. The themes were concerned with; supportive and enabling cultures; leadership and colleague support behaviours; policies and activities regarding how people are treated and encouraged; how Dubai government organisations are structured and interact, and lastly suggestions pertaining to training and education to support greater creativity and innovation.

An inspection of the 19 themes reveals that the majority of comments are concerned with the culture of government organisations and closely linked to leadership styles and behaviours. For example, it may be contended that Valuing Creativity & Innovation, Diversity & Inclusion, Risk-Taking & Blame Culture, Openness to New Ideas, Empowerment and Transparency & Trust primarily refer to organisational culture factors. Insofar as each of these themes are concerned with values, norms, attitudes and behaviour patterns. Further, many of the themes are closely related to how leaders behave, how they interact with their colleagues and how they allocate work to teams. For example, Reward & Recognition, Cross-Functional Teams, Goal Awareness, Human Resource Practices, Resources & Implementation, Time and Work-Pressure may be considered activities largely within the practices of leadership. In fact, as we will summarise shortly, as we consider how to combine the findings from the survey and the written responses, leadership is one of the most important areas to focus on to improve creativity and innovation.

Summary

In this summary section, we will bring together the findings from the quantitative survey as well as the analyses of the written responses to the question “What could be done to encourage more creativity and innovation in your organisation?”. In turn this will prepare us for the final section where we outline the key policy recommendations that can be drawn from this research report.

The quantitative survey measured Dubai Government employee perceptions of key factors relating to creativity and innovation at the level of the individual, the team and the organisation. This was achieved through the measurement of employee perceptions of the extent to which they possessed creative confidence, considered themselves to behave in an innovative manner, felt engaged in the workplace, supported by supervisors and colleagues, as well as the extent to which the organisational culture supported creativity and innovation. Lastly, the employees also reported the extent to which they had autonomy over making decisions.

The two areas that the survey respondents perceived to be least conducive for creativity and innovation concerned support at work for creativity and innovation from supervisors and colleagues, and the creativity and innovation culture. The content analysis of the written responses provided strong support for these two areas. The written response themes suggested that the most important aspects to develop to encourage creativity and innovation were a supportive culture that values creativity and innovation. In addition, the themes of support in terms of Reward & Recognition, Risk-taking & Blame Culture, Openness to New Ideas, Empowerment and Transparency & Trust all point towards the importance of developing a climate, environment and work places that more explicitly embolden colleagues to have and share creative ideas and see them through to become innovations.

We also examined differences in perceptions according to the age of the respondent, size of the organisation where they work, gender and seniority.

The first statistically significant finding, was that women perceived themselves to have less opportunity for autonomy over decision-making, to receive less support from their colleagues or supervisors to be creative and innovative, to feel less motivated and engaged by their organisation and to perceive the organisational culture to be less supportive for creativity and innovation. Though these differences between females and males were small, they were given credence by the strong, clear theme pertaining to Diversity & Inclusion that emerged from the content analysis. Here, the importance of even greater respect for women was outlined. This dual finding from the survey and content analysis indicates that gender issues for creativity and innovation in the Dubai Government warrant closer inspection.

The second significant finding, which should cause little surprise, was that the more senior the employee, the more decision-making autonomy they felt themselves to have. However, perhaps of some concern was that the seniority of the respondent did not relate to the extent to which they felt more creative or innovative; more engaged, more supported or perceived their organisation to possess a creative and innovative culture. In contrast, we might have hoped to find that the greater the seniority, the ‘higher’ up the organisation, the more the culture was perceived to be creative and innovative. This was not the case. These findings were augmented by the analysis of the written responses, where the themes of Goal Awareness, Creativity & Innovation Training, Risk-Taking & Blame Culture, Openness to New Ideas, Empowerment and Transparency & Trust, which are all related to effective leadership of creativity and innovation were repeatedly drawn to attention. These corresponding findings indicate that the development of leaders with strong skills in nurturing individual, team and organisational creativity and innovation throughout the hierarchies of the Dubai Government is of paramount importance.

Leadership is one of the most important areas to focus on to improve creativity and innovation

The summary now turns to explore the convergence between the findings from the model that was created from the survey variables (c.f. figure 4) and the analysis of the written responses.

In short there is an extremely strong overlap between the findings from the model and the themes to emerge from the written responses.

The two areas that the survey respondents perceived to be least conducive for creativity and innovation, concerned support at work for creativity and innovation from supervisors and colleagues, and the creativity and innovation culture

The model demonstrated that it is the Creative and Innovative Culture that lies at the heart of team and individual level creativity and innovation. When the Culture is supportive of Creativity and Innovation, it is perceived to lead to Work Engagement and motivation (in individual employees) and also heightened supervisory and colleague Work Support for creativity and innovation. In turn this perceived Engagement and Work Support leads to higher levels of Creative Confidence and Innovative Behaviour.

...gender issues for creativity and innovation in the Dubai Government warrant closer inspection

The themes to emerge from the analyses of the written responses to the question of what could be improved for creativity and innovation in the Dubai Government segued neatly with the model. The themes clearly promote the importance of the interaction of the three levels of organisation, team and individual creativity and innovation, but also

point towards to importance of supporting processes and mechanisms. First and foremost, respondents indicated that there needs to be an organisational culture that is supportive of creativity and innovation. Second, they also suggested that leadership behaviours (and to a lesser extent colleague behaviours) are vital for fostering a team work climate where individual creative confidence and innovative behaviour can flourish. Third, the culture, leadership and team factors need to be backed up with the appropriate supporting mechanisms. These mechanisms included immediate factors such as the use of Cross-Functional Teams, access to Resources, the provision of Creativity & Innovation Training and the facilitating HR practices pertaining to identifying and retaining talent. The suggestions also went deeper, proposing changes to the educational system to ensure that graduates enter the workplace equipped with the confidence, skills and mindset to work in ever more creative and innovative ways.

Discussion and Policy Implications

This research sought to explore individual, team and organisational factors that underlie creativity and innovation in the Dubai Government.

The development of leaders with strong skills in nurturing individual, team and organisational creativity and innovation throughout the hierarchies of the Dubai Government is of paramount importance

The following section outlines practices, policies and interventions that could be implemented to further support creativity and innovation in the Dubai Government structured around two primary areas: Culture and Leadership, and Supporting Practices.

As we will explain, these two areas overlap, but it is hoped that this structure will facilitate the ease with which the recommendations may be presented and implemented.

Policy Implications for Culture and Leadership

1. Understand the need for a systematic approach

Creativity and innovation occur in the interaction between the three levels of individuals, teams and the organisation (Walker & Batey, 2014). Encouraging a thriving culture of creativity and innovation in the Dubai Government must rely on practices, policies and interventions that systemically address these three levels. A range of interwoven initiatives will yield the greatest gains, as there is no single 'quick fix'.

2. Encourage a culture of engagement

Employees who are motivated and engaged with their work are more likely to perceive themselves to be creatively confident and to participate in innovative behaviours at work. Leaders must recognise the importance of motivating and engaging individual employees and teams. Many of the recommendations listed below (e.g. culture of support, creativity training for leaders, reward schemes, etc.,) are mechanisms that leaders can employ to boost engagement.

3. Encourage a culture of support

A supportive work culture is linked to greater levels of Innovative Behaviour. Leaders and colleagues should provide enhanced support by encouraging creative and innovative ideas, taking the time to be open to suggestions and through even greater provision of feedback. Further, this culture of support can be extended to collaborations in Public-Private Partnerships. Creativity training for leaders and colleagues should focus on these areas.

4. Encourage 'intelligent' risk-taking

Vital for a culture of creativity and innovation is a willingness to take calculated, planned, 'intelligent' risks, because new ideas or ways of doing things will include an element of foraying into the unknown. Creativity training for leaders should provide skills for the assessment and management of risk.

5. Reduce Blame Culture

Closely allied to the necessity to promote greater careful risk-taking, is the need to encourage a culture where mistakes can be made, employees feel safe to experiment and leaders are careful not to single out individuals or teams in the event of an 'intelligent' failure. The road to innovation is seldom without obstacles. Leaders who are quick to blame, rapidly create a culture where colleagues are reluctant to make suggestions or try out new things. Creativity training for leaders should equip them with the skills to be able to make direct, but supportive feedback to develop colleagues and create a trusting, open environment.

6. Encourage a culture of implementation

To improve the effectiveness of efforts to innovate within the Dubai Government, it may be necessary to ensure a greater focus on seeing new ideas and initiatives through to implementation and completion. This challenge may be even greater when government entities enter into partnerships with private organisations. Our results suggest that the development of creative ideas and the initiation of new projects is a minimal issue, while seeing these projects through to the finish may be more problematic. This suggestion clearly demonstrates the tensions that exist between creating a culture of 'intelligent risk-taking' and the encouragement of staff to take part in creative endeavours, with a focus on implementation and return on investment.

7. Encourage greater diversity

Diverse groups have consistently been found to be more creative and innovative than homogenous groups.

The Dubai Emirate has a natural advantage over many other countries insofar as the working population is one of the most diverse globally (Sheik Mohammad Centre for Cultural Understanding, 2014). Leaders should harness diversity from within and outside the government to include a wide variety of opinions, backgrounds and experiences to enrich creative problem solving. A significant part of this effort should focus on even greater opportunities to include women in line with the 'Gender Balance in Governments' Laboratory. However, it is also important to be highly inclusive with people across age, nationality and hierarchy.

8. Encourage internal and external collaboration

Given the aforementioned importance of diversity, it is also imperative for leaders to foster internal and external collaborations. Employees should be encouraged to collaborate on opportunities and challenges with a wide variety of colleagues from within the Dubai Government, as well as to interact with experts from outside the government and in partnership with private organisations.

A range of interwoven initiatives will yield the greatest gains, as there is no single 'quick fix'.

9. Creativity and Innovation Training for Leaders

The deliberate training for creativity and innovation skills in Dubai Government leaders is vital to ensure the appropriate behaviours, attitudes and competencies. The content of the training courses and degree programmes such as the Masters of Innovation Management (MIM) should cover the elements reported above as well as awareness of the importance of the supporting practices listed below.

Together these nine recommendations under the theme of Culture and Leadership will help to create a thriving culture via leadership behaviours that clearly value creativity and innovation. In addition, it will also be important to ensure there are supporting practices in place.

Policy Implications for Supporting Practices

10. Creativity and Innovation Training for all employees

Creativity and innovation training for Dubai Government employees should focus on how to improve creative confidence (e.g. better brainstorming techniques) as well as key behaviours that will support innovation implementation. Further, the training should reinforce how to be a supportive colleague and the mechanisms by which their innovative suggestions can be shared (c.f. Idea Management Systems below)

11. Talent Attraction

The road to innovation is seldom without obstacles. Leaders who are quick to blame, rapidly create a culture where colleagues are reluctant to make suggestions or try out new things

The Dubai Government should ensure that in the process of attracting candidates for job roles, the importance of new recruits providing their creative and innovative skills is made clear. Further, job advertisements should highlight how the Dubai Government is committed to creating a culture where creativity and innovation is valued in order to attract highly creative colleagues.

12. Recruitment

The recruitment process for new employees should actively seek to identify people with the intellectual, personality and motivational orientations for individual creativity and innovation (c.f. the earlier section regarding Individual Creativity and Innovation). In addition, previous experiences of engaging in creative and innovative behaviours should be assessed (Batey, Furnham & Rawles, 2009).

13. Induction

Following attraction and recruitment, the induction of new employees should make clear the behaviours that are expected with regards to how they contribute to a culture that values creativity and innovation. New recruits should also be made conversant with the procedures for how creative ideas are to be shared (c.f. Idea Management Systems below). When entering into Public Private Partnerships this approach to induction can be extended to private company employees too.

14. Performance management

When receiving feedback on their performance, colleagues should receive input into how their behaviours help to pursue greater levels of creativity and innovation. For leaders, this may require the development of a Creativity and Innovation competency for use in managerial appraisals.

15. Reward schemes

The Dubai Government should institute both formal and informal rewards for creativity and innovation. Formal reward schemes could take the form of prizes for good ideas and efforts to be innovative. Informal rewards could take the form of quick flexible 'on the spot prizes' given by managers to colleagues to rapidly reinforce creative and innovative efforts. The key for any reward scheme for creativity and innovation is that rewards should be given for effort, experimentation and engagement – not just for successful initiatives.

16. Succession-planning

A key aspect of encouraging creativity and innovation in the Dubai Government pertains to managing the talent pipeline and actively identifying creative future leaders who will take on key roles and responsibilities in the future.

17. Team resourcing

It is recommended, that when forming new teams or refreshing the membership of existing teams, that new members add to the potential creativity and innovation of the team. A key approach for this would be to ensure that teams are naturally diverse with regards to age, gender, nationality, background and experience. Psychometric assessments of intellect, personality, and motivation can be used for this purpose (Hughes & Batey, 2017; Batey, Walker & Hughes, 2012).

One additional mechanism for this team resourcing approach could be the temporary co-option of colleagues from partnering organisations.

The deliberate training for creativity and innovation skills in Dubai Government leaders is vital to ensure the appropriate behaviours, attitudes and competencies

18. Cross-functional team working

Closely related to the idea of increasing diversity via the resourcing of teams, is to ensure greater cross-functional team working. This approach will ensure a wider variety of team members, greater visibility across departments and functions for projects and help to build a culture of collaboration (c.f. Encourage internal and external collaboration above).

19. Dedicated Creativity Teams & Departments

The use of specialist, dedicated creativity teams and departments could be considered by the Dubai Government. Firstly, highly trained facilitators could be made available to teams across the Dubai Government. Such an initiative could draw upon the creativity and innovation training provided to leaders and all employees to identify those with natural skills in this area. Second, the Government could

also consider the formation of dedicated departments to explore new ideas and technologies and then disseminate the findings more widely.

20. Resources for Creativity and Innovation

In order to facilitate the speed and efficacy of innovation implementation, the Dubai Government should explore the potential for ring-fencing budgets exclusively for the purposes of implementing new innovations.

21. Job and work design

Our results indicated that there is a high degree of Creative Confidence in employees in the Dubai Government. Therefore, the Dubai Government should ensure that the design of jobs and roles is such, that employees have the opportunity, autonomy and freedom to work in creative and innovative ways to match their self-belief.

22. Idea Management systems

The Dubai Government should explore both physical and virtual systems for collecting ideas and suggestions from colleagues. Physical approaches include suggestions boxes and regular informal meetings with colleagues to seek their opinions. Virtual approaches can include online suggestion portals, employee voting systems for ideas or using existing social media platforms such as Twitter and Yammer. Dubai is already a global pioneer in the use of Twitter, with the largest ever brainstorm encouraged by His Highness Sheikh Mohammed Bin Rashid Al Maktoum, UAE Vice President, Prime Minister and Ruler of Dubai (Gulf News, 2013). As the Dubai Government enters into a greater array of Public Private Partnerships, it may be possible to also harness the ideas of collaborators from external organisations.

23. Clear routes to innovation implementation

In addition to the importance of creating a culture of implementation (c.f. point 6 above), there must also be simple and transparent systems for colleagues to understand how best to take their ideas and make them into innovations. This may include, but not be limited to access to internal sponsors, seed funding for new ideas and opportunities to be involved in implementation project teams.

The key for any reward scheme for creativity and innovation is that rewards should be given for effort, experimentation and engagement – not just for successful initiatives.

24. Benchmarking

The Dubai Government should ensure that it is conversant with the latest best practice on encouraging and managing creativity and innovation via efforts to benchmark against other organisations, cities and governments. Although a 'copycat' approach is best-avoided, there may be initiatives from other government that could be adapted to suit the UAE context.

25. Education

Our last policy recommendation concerns the production of a supporting ecosystem for creativity and innovation in the government by ensuring that graduates of the Dubai school and university system are equipped with the mindset and skills to be highly creative and innovative should they go on to take on employment in the government.

It is vital to note, that even though these policy recommendations are presented individually, they must be considered to be activities and initiatives that need to operate in tandem. To truly create a thriving culture of creativity and innovation, a systemic, multilevel approach is required whereby individuals, teams, leaders and the organisational processes and procedures are aligned.

Conclusion

This study sought to support the United Arab Emirates National Innovation Strategy via the detailed exploration of creativity and innovation in the Dubai Government. The study adopted a mixed methods approach. Quantitative data about perceptions of key factors pertaining to creativity and innovation concerning the individual, team, organisation and job-design were collected via a survey. These data were then augmented with the qualitative analysis of responses to the question “What do you think could be done to encourage more creativity and innovation in your organisation?”

The results of this study clearly demonstrate that there are areas that the Dubai Government could focus on to encourage even greater levels of creativity and innovation for colleagues.

First, the Dubai Government must further encourage the appropriate leadership behaviours and deliberately create a culture that supports creativity and innovation. In the policy recommendations section a number of potential initiatives to support this endeavour are highlighted. These include encouraging a culture of engagement and support; greater openness to ‘intelligent’ risk-taking; even more maximisation of diversity, more collaboration within and between government departments as well as deliberate creativity training for leaders and colleagues.

Second, aligned with the efforts to create a culture of creativity and innovation there must be investment in a range of supporting practices. In the policy recommendations section a number of potential supporting practices were outlined that included attracting and recruiting highly creative and innovative people; managing performance to reinforce creative and innovative behaviours, reward schemes focussed on encouraging participation in creative activities; resourcing diverse teams; greater cross-functional working and idea management systems.

Taken together, a range of initiatives that span leadership, culture and supporting practices will support the Dubai Government in achieving the United Arab Emirates National Innovation strategy. Whilst it appears simpler and easier to implement only a handful of initiatives, it is only through deliberate attention to the system of leadership, culture and day-to-day supporting practices that we may build a government that will leave a creative legacy long after the individual actors are gone.

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Appendix

SAMPLE CHARACTERISTICS

In total, 1,156 people started the survey. Of these, 979 completed the survey and were included in the analysis. Of 979, there were 578 males and 401 females. The mean (average) age of the sample was 39.2 years with a range from 17 to 70 years old. Concerning educational attainment, 2.7% were educated until 16 years, 9.8% until 18 years, 8% received non-university higher education, 37.6% received undergraduate level university education, and 42% received postgraduate university level education.

The mean number of years worked in the GCC was 9.9 years with a range of 1 to 39 years. Ninety-four per cent of the sample was employed full-time, 2.7% were employed part-time, and the remainder were self-employed or retired. Concerning seniority, 28.9% were professionals/senior managers, 21.8% were junior professional/manager, 18.2% were administrative/secretarial, 12.5% were skilled workers, 12.8% were semi-skilled workers, and 5.9% were service workers. The sample was drawn from organisations ranging in size, 6% worked in companies with less than 50 employees, 14.1% worked in companies with 51-250 employees, 16.3% worked in companies with 251-1,000 employees, 25% worked in companies with 1,000-5,000 employees, and 38.5% worked in companies with more than 5,000 employees.

MEANS AND STANDARD DEVIATIONS FOR EACH VARIABLE USED IN THE STUDY FOR THE WHOLE SAMPLE, MALES AND FEMALES

Table 6

Means (M), standard deviations (sd), and sex differences on all psychometric variables

	Whole Sample		Male (n=578)		Female (n=401)		F	np2
	M	sd	M	sd	M	sd		
Creativity	5.02	.84	5.05	.84	4.97	.85	2.56	.003
Innovation	4.70	.88	4.76	.85	4.66	.92	3.33	.003
DMA	4.31	1.22	4.47	1.16	4.10	1.27	23.19**	.023
Support	3.95	1.30	4.04	1.30	3.80	1.32	8.19*	.008
Engagement	4.63	1.10	4.80	1.10	4.42	1.14	25.10**	.025
Culture	4.14	.94	4.27	.93	3.95	.93	28.63**	.028

Note: F = F-test of group differences; np2 = partial eta squared estimate of effect size; * = $p < .01$; ** = $p < .001$

Creativity = Creative Confidence; Innovation = Innovative Behaviour; DMA = Decision Making Autonomy; Support = Work Support; Engage = Work Engagement; Culture = Creativity and Innovation Culture
N=979

Please note that for the Psychometric Variable Means presented in Figure 2, The low, medium, and high groups were identified as follows: low was 1 SD below M, high was 1 SD above M, and medium was everyone in between.

STRUCTURAL EQUATION MODEL

The final quantitative analysis within this report was a structural equation model, which examined how Creativity and Innovation Culture, Work Engagement, Work Support and Decision Making Autonomy influence Creative Confidence and Innovation Behaviour. The model provided excellent fit to the data ($\chi^2 = 3908$, $df = 547$; $CFI = .960$; $TLI = .957$, $RMSEA = .075$). Overall, the model explained 7% of the variance in Creative Confidence and 13% of the variance of Innovative Behaviour.



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