

---

## **Modelling organisational innovation in UAE: investigating the love triangle involving leadership, organisational culture and innovation**

---

**Sanjai K. Parahoo\***

Hamdan Bin Mohammed Smart University,  
Dubai International Academic City,  
Dubai  
Email: s.parahoo@hbmsu.ac.ae  
Email: s.parahoo@gmail.com  
\*Corresponding author

**Sabiha Mumtaz**

University of Wollongong,  
Block 15, Knowledge Park, Dubai  
Email: SabihaMumtaz@uowdubai.ac.ae  
Email: sabiha\_mum@hotmail.com

**Shaikha Salem**

Hamdan Bin Mohammed Smart University,  
Dubai International Academic City,  
Dubai  
Email: 200009618@hbmsu.ac.ae.

**Abstract:** This study uses a mixed method approach, comprising in-depth expert interviews and an intensive literature review to develop a conceptual study model of organisational innovation in the UAE. While leadership and culture are enacted differently in different contexts, very few of the rich existing related studies have been undertaken in the Middle East. Using data from an online survey of 370 employees, confirmatory factor analysis and structural equation modelling are used to test the study hypotheses. The findings demonstrate that organisational culture fully mediates the effect of leadership on innovation. This finding stands in sharp contrast with the current literature originating from other geographical contexts that demonstrated a positive direct effect of leadership on innovation. The reasons for this situation are discussed.

**Keywords:** culture; innovation; leadership; United Arab Emirates; UAE; innovation model; employee involvement; transformational leadership; organisational culture; UAE; mediating effect.

**Reference** to this paper should be made as follows: Parahoo, S.K., Mumtaz, S. and Salem, S. (2017) 'Modelling organisational innovation in UAE: investigating the love triangle involving leadership, organisational culture and innovation', *Int. J. Knowledge Management in Tourism and Hospitality*, Vol. 1, No. 1, pp.110–126.

**Biographical notes:** Sanjai K. Parahoo is the Departmental Chair for Management and Marketing at the Business School at Hamdan Bin Mohammed Smart University, Dubai. He has extensive innovation management and contract research experience in various African countries.

Sabiha Mumtaz has three years industry experience in the banking sector in India and has worked for six years as registrar at a university in Dubai, before joining University of Wollongong in Dubai as faculty member in organisational behavior (OB) and HRM. Her research interests are in the area of OB and HRM in educational and industry settings.

Shaikha Salem is employed in the public sector in Dubai, UAE. She holds a Master's of Science in Innovation and Change Management from Hamdan Bin Mohammed Smart University and a Bachelor of Applied Science in Information Management from the Higher Colleges of Technology (Dubai Women's College).

This paper is a revised and expanded version of a paper entitled 'Organizational innovation in UAE: investigating leadership and organizational culture as determinants', presented at Innovation Arabia 10 Conference, Dubai, 6 March 2017.

---

## 1 Introduction

The view that innovations by individual employees help to attain organisational success is widely supported (Anderson et al., 2014; Hogan and Coote, 2014; Unsworth and Parker, 2003). Researchers have emphasised on the role of leaders for continuous organisational innovation arguing that they exert a powerful and positive influence on employees' work behaviours (Noruzy et al., 2013; Yukl, 2012), enabling employees to be both willing and able to innovate (De Jong and Den Hartog, 2007). This calls for organisations to be more flexible, adaptive, entrepreneurial, and innovative to effectively meet the changing demands of today's market environment (Naranjo Valencia et al., 2010).

In fact, much of behavioural literature postulates that organisational culture and transformational leadership significantly influence the level of innovation in the organisations leading to improved performance (Bharadwaj and Menon, 2000; Jung et al., 2003; Samad, 2012). Transformational leadership in particular has been emphasised upon as a positive link towards innovation (García-Morales et al., 2012; Jung et al., 2008; Gumusluoglu and Ilsev, 2009; Noruzy et al., 2013), while organisational culture was studied as one of the major factors supporting innovation in organisations (Büschgens et al., 2013; Škerlavaj et al., 2010).

Although substantial research has focused on the interrelationships between leadership, innovation and organisational culture, most of the studies have been conducted in western countries, primarily in the USA, Canada, and Western Europe (Yukl, 2012), while the Middle East and specifically the United Arab Emirates (UAE) has rarely featured as empirical context in the related studies. To the best of our knowledge, there is no related in-depth study conducted in the Middle East (ME) region.

This raises the issue as to whether the leadership-innovation relationship is influenced by the cultural context.

Some authors have argued that transactional-transformational leadership was a universal concept e.g., (Bass, 1997), while Den Hartog et al. (1999) hypothesised that “attributes associated with charismatic/transformational leadership would be universally endorsed as contributing to outstanding leadership”. In their study of 62 cultures including the ME represented by Kuwait and Qatar, Den Hartog et al. (1999) determined that specific aspects of charismatic/transformational leadership were strongly and universally endorsed across cultures, these characteristics being: “integrity, excellence oriented, decisive, intelligent and win-win problem solver”.

However, the universality of the effect of culture on leadership has been debated by many researchers. Blunt and Jones (1997) argue about prescriptiveness and, in many cases, dysfunctionality of western views when applied uncritically in developing countries. Similarly, Ergeneli et al. (2007) analysed the link between transformational leadership aspects and Hofstede’s values and found that some aspects of leadership were culture-specific. In the same context, House et al. (2004) talk about the North American character of almost all current theories of leadership and their empirical evidence, while the North American culture is individualistic rather than collectivistic.

In contrast, an analysis of national cultural dimensions by Hofstede showed that the UAE rated quite differently from USA in 2016, with UAE vs. USA indices being respectively: power distance 90 vs. 40, individualism-collectivism 25 vs. 91, masculinity-femininity 50 vs. 62, uncertainty avoidance 80 vs. 46 (<https://geert-hofstede.com/arab-emirates.html>). Since these cultural traits could logically be expected to affect the way leaders and employees interact and work together to achieve organisational innovation goals, it is reasonable to question whether much of the Leadership and Innovation literature developed in western contexts would indeed be relevant to the ME. In this regard, the Middle East (ME) region, symbolised for example by the UAE, has emerged as a major economic development hub over the past two decades.

UAE would thus represent an ideal empirical context to investigate the leadership-innovation relationship and determine the role, if any, of organisational culture in the equation. This research context is further supported by UAE Vision 2021, which actively establishes the current strategic focus of the UAE “to transform its economy into a model where growth is driven by knowledge and innovation” (<https://www.vision2021.ae/en/our-vision>).

The study objective is therefore to develop and empirically validate an organisational innovation model in the context of the UAE depicting three variables of interest: transformational leadership, organisational culture and innovation, while further investigating whether culture has a mediating effect on the leadership-innovation relationship.

## **2 Theoretical background**

### *2.1 Organisational innovation*

While researchers define organisational innovation in various ways, we adopt a broad definition proposed by Lumpkin and Dess (1996), i.e., “innovativeness reflects a firm’s

tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes". This definition is in line with current conceptualisation of the construct linking innovation with the introduction of valuable and useful new products/services by an organisation e.g., (Denti and Hemlin, 2012; Gumusluoglu and Ilsev, 2009; Sarros et al., 2008). Bharadwaj and Menon (2000) propose that innovation is driven by both the individual efforts as well as organisational interventions, so that the presence of a knowledge sharing culture in an organisation leads to improved operational performance (Wang and Wang, 2012). Innovation at an organisational level has therefore become imperative for the organisations to gain and sustain competitive advantage and for its long term survival (Urbancová, 2013; Anderson et al., 2014).

A bulk of research in western contexts supports positive linkage between leadership and organisational innovation e.g., (Aarons and Sommerfeld, 2012) using data from the USA and Canada; Paulsen et al. (2013) using Australian sample. In Europe, Matzler et al. (2008) using a sample of 300 innovative SMEs from Austria; Elenkov and Manev (2005) using data from 12 European countries established that leadership factors had strong effects on the innovation influence of top-management.

Similar results have been reported in Asia. In Iraq, Al-Husseini and Elbeltagi (2016) identified a pivotal role of transformational leadership in enhancing product and process innovation which is supported by Gumusluoglu and Ilsev (2009) findings in Turkey determining a significant positive relationship between transformational leadership and creativity; in Taiwan, Jung et al. (2003) found that leadership had a direct effect on innovation while Noruzy et al. (2013) using a sample of Iranian companies found that transformational leadership positively and indirectly influenced organisational innovation through organisational learning and knowledge management.

Conversely, in a few limited instances, empirical findings were in stark contrast, with organisational culture determined to fully mediate the effect of leadership on innovation. In Australia, Sarros et al. (2008) found that a competitive, performance-oriented organisational culture was strongly related to climate for organisational innovation and fully mediated the relationship between two of their transformational leadership factors (articulates vision and provides individual support) and climate for organisational innovation. In Taiwan, Weng et al. (2015) found that patient safety climate and innovation climate exerted full mediating effect on the relationship between transformational leadership and innovation behaviour.

To conclude this section, it is pertinent to outline the ecosystem supporting innovation in the UAE. An exploration of various policies shows that UAE has adopted a well-laid out and multi-faceted strategy charting its path towards higher national innovativeness. These strategies/initiatives may be described at three levels of analysis. At the national level, the UAE launched a National Innovation Strategy on October 2014 with the objective of guiding the UAE among the most innovative nations in the world within seven years ([goo.gl/HZKjwH](http://goo.gl/HZKjwH)). This strategy is supplemented by complementary initiatives such as:

- innovation events such as Innovation week and awards
- Mohammed Bin Rashid Centre for Government Innovation which aims to enrich the culture of innovation within the public sector ([goo.gl/gb5OXS](http://goo.gl/gb5OXS))

- Dubai SME, which incorporates a wide range of support initiatives for entrepreneurs as well as incubation facilities ([goo.gl/g238la](https://goo.gl/g238la))
- training in innovation: short courses for employees; and an undergraduate course introduced in all public universities from August 2016.

At the corporate level, many UAE organisations have developed policies to promote organisational innovation, and leading examples could include the Innovation lab at Road and Traffic Authority (see <https://goo.gl/EHudNT>), and employees' ideas portal at Dubai Electricity and Water Authority (see <https://goo.gl/Yo9t3X>). At the micro level, individual inventors may use the support services and incubation facilities of various support intuitions such as Dubai SME, and seek mentoring and funding support from the Khalifa Fund for Enterprise Development ([goo.gl/gXbFPB](https://goo.gl/gXbFPB)) or Mohammed Bin Rashid Innovation Fund (<https://goo.gl/c2twsg>).

## 2.2 *Transformational leadership*

Burns (1978) introduced the concept of transformational leadership defining it as a process where “leaders and their followers raise one another to higher levels of morality and motivation”. Avolio et al. (1991) explored the concept further and discussed four distinct characteristics, the four I's, associated with transformational leadership: idealised influence; inspirational motivation; intellectual stimulation; and individualised consideration. Later the dimension of idealised influence was split into two dimensions (Elenkov and Manev, 2005): idealised influence (attributed) and idealised influence (behaviour). More recently, Mokhber et al. (2015) have expanded upon the understanding of the relationship between transformational leadership and organisational innovation. Their results revealed that among five components of transformational leadership (i.e., idealised influence, attributive charisma, inspirational motivation, intellectual stimulation, and individualised consideration), three (attributive charisma, inspirational motivation, and intellectual stimulation) were positively related to organisational innovation; while Al-Husseini et al. (2013) also reported positive influence of individualised consideration and inspirational motivation in increasing the product and process innovation in organisations.

## 2.3 *Organisational culture*

Organisational culture is an important concept to researchers and managers alike, as it is strongly linked to innovation and has been defined as “the deeply seated (often unconscious) values and beliefs shared by personnel in an organization” (Martins and Terblanche, 2003). It may hence be foreseen to have an effect on the behaviour of the employees, making it an important variable to be considered in a model of organisational innovation (Naranjo Valencia et al., 2010).

This research analyses the manifestation of cultural norms through observable behaviour and the nature of its relationship with leadership because as Schein (2006) says “only thing of real importance that leaders do is create and manage culture”. More recently, Hogan and Coote (2014) reason that Schein's model offers a tractable explanation of cultural processes that support organisational innovation.

### **3 Proposal of conceptual model and study hypotheses**

In the following sub-sections, evidence from the extant literature is used to design a conceptual model for the present study.

#### *3.1 Transformational leadership and innovation*

A positive relationship between transformational leadership and innovation has been established in the extant literature (Jung et al., 2003; Khalili, 2016; Noruzy et al., 2013; Wilson-Evered et al., 2001). Such a finding is supported by the fact that transformational leaders encourage creativity by stimulating followers to view issues in new perspectives (De Jong and Den Hartog, 2007). In the business world, the turnaround of Apple under Steve Jobs is an illustration of transformational leadership driving innovation (Bryant, 2003), while Jack Welch (General Electric) and Lou Gerstner (IBM) are similarly cited as leaders who transformed their organisation through innovations (Gardner and Avolio, 1998).

This leads to the first hypothesis:

H1 Transformational leadership is positively related to innovation.

#### *3.2 Transformational leadership and culture*

Transformational leadership drives organisational culture, primarily through the processes of articulating a vision, the setting of high performance expectations, and providing personalised support to workers (Sarros et al., 2008). Scott and Bruce (1994) argue that transformational leaders enhance the motivational level and state of mind of their followers towards being more innovative by establishing a supportive organisational culture. Similarly, Yukl (2012) posits that leaders can create and sustain an innovation culture that encourages followers to take risks and that rewards innovative efforts, while Wilson-Evered et al. (2001) found that transformational leadership positively influences innovation by promoting higher levels of employee morale. Jung et al. (2008) provided further empirical support demonstrating that transformational leadership was positively associated with innovation culture. Thus:

H2 Transformational leadership is positively related to organisational culture.

#### *3.3 Culture and innovation*

The importance of relationship of organisational culture in influencing innovation is illustrated by extensive related research over the past decades (Büschgens et al., 2013). In their meta-analysis, Hartnell et al. (2011) found that organisational culture was significantly related to organisational innovation. Similarly, various other researchers found wide support for organisation culture as a key driver of innovation (e.g., Škerlavaj et al., 2010; Uz Kurt et al., 2013; Zhu and Engels, 2014). This led Howell and Avolio (1993) to propose that an organisational culture promoting innovation in conjunction with a leader who stimulates innovation ensures better chances for improving organisational performance. This leads to the third hypothesis:

H3 Organisational culture is positively related to innovation in organisations.

Based on the preceding discussion, the study conceptual model may schematically be proposed as below.

## **4 Methodology**

### *4.1 Questionnaire items*

The study used a mixed method approach involving a combination of both qualitative and quantitative phases. This enabled both breadth and depth in understanding the constructs under study, while offsetting the weaknesses associated with each approach, when used in isolation. The initial qualitative phase comprised of six in-depth interviews with experts from industry to develop an in-depth understanding of the issues affecting innovation in the cultural context of UAE. This phase was complemented with an intensive review of the extant literature to develop measures for the study constructs. Whenever possible, the use of existing measures validated in preceding empirical studies was privileged and adapted to fit the present study context. For example, the organisational innovation scale items were sourced primarily from Scott and Bruce (1994); the transformational leadership items from Podsakoff et al. (1990); while the organisational culture scale were from (Dobni, 2008).

The survey was to be administered online to busy professionals in their work settings. In this regard, to improve response rate, it was required to opt for a shorter questionnaire rather than exhaustive measures reflecting the various dimensions of the study constructs. The study instrument thus consisted of 11 items representing the three key constructs and an additional seven demographic questions. In order to delineate the domain of the study constructs adequately, each one was measured by three to four items, thereby satisfying the criterion for measurement models (Hair et al., 2010). Each item was scaled on five-point scale ranging from strongly disagree (= 1) to strongly agree (= 5) with no labels for intermediate scale points.

First draft of the questionnaire was piloted with a sample of 12 employees from the public and private sectors in Dubai. This stage led to the minor refinement of some questionnaire items to fit the cultural context. Since some respondents were more familiar with Arabic than English, the questionnaire was next translated to Arabic using back translation (e.g., Brislin, 1970), and a similar piloting process was undertaken with Arabic speakers. The outcome was the bilingual (English and Arabic) study questionnaire, which was ready for administration to the study sample.

### *4.2 Sampling and collection of data*

Labour statistics reveal that Emiratis take up employment primarily in the public sector as compared to the private sector [Sinclair, (2014), 7 January]. In line with the study objectives, a purposive sampling frame was designed. Key informants working in administrative positions, in organisations primarily associated with the areas of culture and tourism were identified in 75 public sector and 30 private sector organisations/departments/units. Each contact was requested to electronically distribute the study cover letter (bilingual in English and Arabic) including a link to the online survey among about ten respondents within their organisations. Given the high internet penetration in UAE with 93.2% of the population connected to the internet

(<http://www.internetworldstats.com/me/ae.htm>), an online questionnaire administration was deemed to be both convenient and appropriate. The letter sought the participation of the respondents in the academic study, ensured them of confidentiality and anonymity, clarified that the purpose of the study was to analyse innovation at national level. This statement was expected to reassure respondents that they were not being specifically assessed on innovation in their own organisations, making them more likely to be honest in their self-reporting of organisational innovation. The questionnaire administration process was effective, resulting in a total of 370 usable responses out of 990 respondents approached, representing an estimated 37.4% response rate, which may be considered a good response rate for an online survey.

#### 4.3 Finalisation of measurement models and testing of study hypotheses

The data pertaining to 370 respondents was subjected to a *confirmatory factor analysis* (CFA) using LISREL 8 to test the validity of the measurement models reflecting the conceptual model (Figure 1). Composite reliability (CR) was assessed to determine the internal consistency of the various study scales (Hair et al., 2015). Face, convergent and discriminant validity were also assessed. At the end of the scale construction stage, the study hypotheses were tested by structural equation modelling (SEM) using LISREL.

**Figure 1** Proposed conceptual model (model 1)



## 5 Data analysis

### 5.1 Demographics

The demographic profile of the respondents represented 147 (39.7%) males and 223 (60.3%) female employees, the majority of whom (70%) were Emiratis, other Arabs (20%, Arabs from regional countries) and the rest represented various other nationalities (10%), the majority of whom were from Asia (Indian, Pakistanis, and Bangladeshis). The respondents worked primarily in the public sector (71.6%), as compared to the private sector (28.4%), which is characteristic of the target population.

About 12% of respondents were new employees who recently joined their organisations (< one year), while 30.8% and 35.7% held two to five years and six to ten years' work experience respectively, and 21.6% had over ten years' experience at their organisations. Such a profile would ensure that the respondents had adequate work experience and would hence be able to record their perceptions of the study constructs in a reliable way.

Finally, 7.3% of respondents were from top management category, while middle and supervisory managers constituted 30.5% and 43.8% of employee responses, and 18.4% were in the other category (professionals, consultants, service employees, etc.).

### 5.2 Scale construction: uni-dimensionality, reliability, and validity tests

One important characteristic of a good scale is its uni-dimensionality that is the different items comprising the study scale should represent a single construct. To establish uni-dimensionality in the scales, the items of each of the 3 study scales were subjected to a test for uni-dimensionality using CFA (Hair et al., 2015). The results showed that the fit indices for the overall model that allowed for covariance between the study constructs was good (chi-square/degrees of freedom ratio =  $119.26/41 = 2.91$ ; SRMR = 0.027; CFI = 0.99), while the different paths from each latent variable to its measures were all significant at  $p < 0.01$ . These indices and statistics confirmed that each measurement model was indeed uni-dimensional.

**Table 1** Summary statistics for scale items

<i>Item description</i>	<i># items</i>	<i>CR</i>	<i>1</i>	<i>2</i>	<i>3</i>
1 Organisational innovation	<b>3</b>	<b>0.91</b>	<b>0.76</b>		
2 Transformational leadership	<b>4</b>	<b>0.93</b>	0.69	<b>0.77</b>	
3 Organisational culture	<b>4</b>	<b>0.84</b>	0.66	0.48	<b>0.67</b>

Note: AVE values on diagonal, squared correlations below diagonal.

As illustrated in Table 1, the CR for each of the three scales was excellent being well above the threshold of 0.70 recommended by Hair et al. (2015). Face validity was established by selecting validated measures from literature. Convergent validity was established through the high value of CR, and by examining the path loadings, which were all high, in the range 0.80–0.91 (Hair et al., 2015). Further, the average variance extracted (AVE) exceeded 0.5 for all constructs (see Table 1). Discriminant validities between a pair of latent variables were confirmed by comparing the AVE values of the two variables to the square of the correlation estimates between the same two variables. Since the AVE values exceeded the squared correlation estimates, discriminant validity was established.

Having established uni-dimensionality, reliability and validity of the constructs, it was fitting to proceed with the formal testing of the conceptual model and study hypotheses.

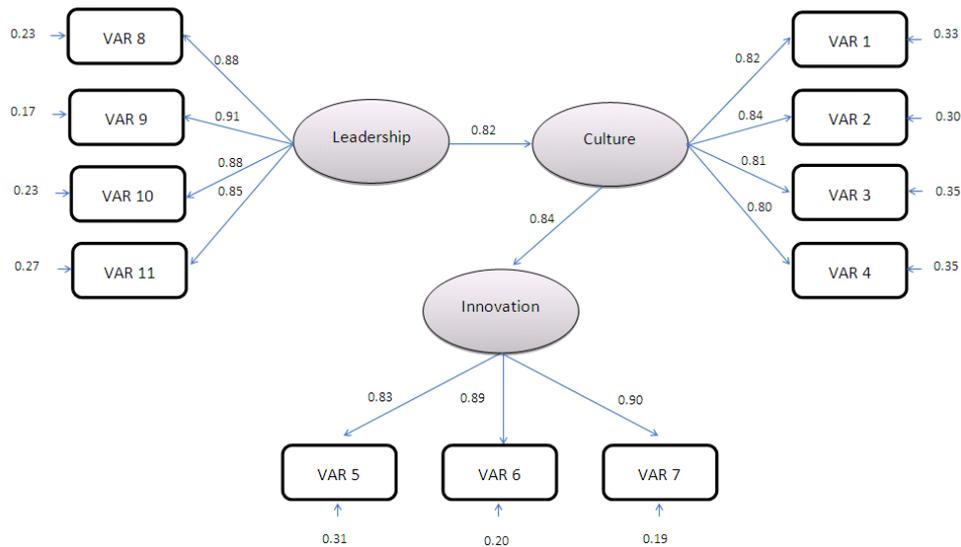
### 5.3 Modelling

The conceptual model (model 1 henceforth) was tested using SEM. It was observed that all paths pertaining to the 11 measurement items were significant at  $p < 0.01$  (see Table 2 below). The model fit was satisfactory, and although the normed chi-square was marginally beyond the threshold of 3.0 (at 3.07, see Table 2), other indices were within the recommended limit (Hair et al., 2015).

**Table 2** Statistics relating to structural paths and model fit

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
<b>Model fit</b>			
Chi-squared	125.7	119.5	30.64
Degrees of freedom	41	42	13
Normed chi-squared	3.07	2.85	2.36
RMSEA	0.07	0.07	0.059
SRMR	0.027	0.027	0.019
CFI	0.99	0.99	0.99
<b>Standardised structural paths</b>			
Leadership-culture	0.82 (t = 15.3)	0.82 (t = 15.0)	Released
Leadership-innovation	0.02 (t = 0.29)	Released	0.69 (t = 13)
Culture-innovation	0.80 (t = 9.5)	0.84 (t = 15.2)	Released

**Figure 2** Standardised path loadings in structural and measurement models for model 2 (see online version for colours)



Note: All paths significant at  $p < 0.01$ .

An inspection of the structural model showed that the path linking leadership-innovation had a low standardised coefficient of 0.02 and it was not significant ( $t = 0.29$ ), implying that this path was not supported by the analysis. Therefore, this non-significant path was deleted, and a revised model (henceforth model 2) with leadership deemed to influence culture which in turn influenced innovation was again tested by SEM (leadership  $\rightarrow$  culture  $\rightarrow$  innovation, see Figure 2). As expected, the fit of the model 2 improved and all indices were within the recommended threshold (Hair et al., 2015). Interestingly, despite the model parsimony, the squared multiple correlations for reduced form were 0.67 and

0.47 for culture and innovation respectively, implying that 67% of the variance in culture and 47% in innovation were explained by the model.

In order to test for mediation, it was required to estimate the direct effect of leadership on innovation. Therefore, a new model (henceforth model 3) was constructed that proposed a direct linkage between its two constituent latent variables, i.e., leadership → innovation. The fit of this model was good, and it demonstrated that leadership had a significant effect on innovation (see Table 2, model 3). Therefore, since when the variable culture was introduced, leadership did not have a significant effect on innovation (model 1), while leadership had a significant effect on culture, which in turn had a significant effect on innovation (model 2), it may be concluded based on steps recommended by Baron and Kenny (1986), that culture fully mediates the leadership-culture relationship.

## **6 Discussion and implications**

### *6.1 Implications for theory*

The present study has confirmed hypotheses H2 and H3 while H1 was not supported. Leadership was found to have a standardised direct effect of 0.82 ( $p < 0.01$ ) on culture which in turn exerted a standardised effect of 0.84 ( $p < 0.01$ ) on innovation. Further, it was demonstrated that culture fully mediated the effect of leadership on innovation. In other words, in the UAE, leadership did not have a direct effect on innovation when the variable culture was included in the model. This finding is a major contribution of this study, as it stands in sharp contrast with the findings of various other researchers other that demonstrated a positive direct effect of leadership on innovation (e.g., Aarons and Sommerfeld, 2012; Abdullah et al., 2016; Elenkov and Manev, 2005; Gumusluoglu and Ilsev, 2009; Jung et al., 2003). Instead, the present findings are in line with those of the relatively fewer researchers who established that culture fully mediates the leadership-innovation relationship (Sarros et al., 2008; Weng et al., 2015).

The study findings therefore imply that in UAE organisational culture is the variable of prime interest as regards innovation. However, this should reduce the importance of leadership, which has a direct influence on culture leading to an indirect effect on innovation. It is therefore pertinent to analyse the underlying factors that cause organisational culture to fully mediate the leadership-innovation relationship. To this end, it may be useful to go back to the national cultural dimensions. The UAE has high values for Hofstede's cultural variables such as power distance, collectivism, and uncertainty avoidance. We would like to suggest that these national cultural traits could be likely factors explaining the important role of organisational culture in the UAE.

UAE ranks high on the power distance index (= 90) thus giving an impression that it would be comparatively easier for the leaders to motivate their staff and to facilitate the process of innovation. However, when this is considered in conjunction with the low Individualism index (= 25), it becomes evident that leaders cannot work with staff individually to inspire innovation. Instead the leaders need to work with the employees collectively as part of a homogeneous team. A strong collectivist culture would thus hinder the heroic individual efforts of the maverick employee who is absorbed in devoting time doggedly to solve a problem hoping to invent a new product/service or process. Given the recognition of individual 'heroic efforts' in invention (Smith, 2015),

one could argue that in a collectivist culture, this behaviour would be seen as reaching for personal glory rather than serving the common good of the whole team or organisation. This would explain our findings whereby organisational culture acts as a mediating variable by forming a facilitating backdrop that encourages employees to embrace change without experiencing the feeling of standing out or behaving differently from other colleagues.

Another variable that would support the identified major role of organisational culture is the high uncertainty avoidance index (= 80). Tidd (2001) identified uncertainty as one of the key environmental contingencies that influence management processes for innovation. This provides support to our reasoning that cultures varying on Hofstede's uncertainty avoidance index will approach innovation differently. Organisational innovation is essentially based on employees creatively proposing a better product or service that addresses a customer problem better than the existing solution. This endeavour is known to be fraught with inherent risks and uncertainties (Smith, 2015) so that innovation efforts, however commendable, often do not come to fruition. The innovation process thus requires the stakeholders associated with an innovative idea to intrinsically recognise that the idea they are advocating might incorporate uncertain outcomes. Employees operating in environment of high uncertainty avoidance would tend to avoid risks of failure associated with developing an innovative idea, and instead prefer to tread the known path. Consequently, in order to create a culture of innovation and change, leaders opt to encourage the employees to take a leap of faith within the confines of their comfort zones by creating an innovation-supportive organisational culture.

Another consideration that may partially explain the critical role of organisational culture may be related to the transient nature of expatriate staff in leadership positions. Innovation is a long term continuous process. As UAE is a relatively young nation, its work population has majority of expatriates. It is expected that most of these expatriates will be in the UAE for a short period of time, which does not give them the luxury to lead and impact on the innovation process over an extended time period. These leaders seem therefore to focus on establishing a strong organisational culture that socialises the new entrants through a supportive culture into effectively undertaking innovation.

In conclusion, it can be said that the unique nature of UAE necessitates one to look at the role of leadership in impacting innovation differently. The established Western best practices for fostering innovation may not work effectively in this part of the world due to different national cultural traits and work environment differences, so that the emphasis should instead be on establishing an innovation culture.

## *6.2 Managerial implications*

Mohan et al. (2017) use manager activation theory to argue that the presence of an innovation culture enables a comprehensive exploration of new ideas while reducing the fear of negative evaluation thereby leading to innovation success. The creation and sustenance of an innovation culture is a leader's responsibility. For example, Steiber and Alänge (2013) discuss that employees at Google expected their leaders to facilitate the innovation process; empower, trust and support them in new projects; and decrease any obstacles to innovation. Thus the leadership's creative vision will translate into innovation through the support of an innovation culture. Therefore, organisational leaders

in UAE should focus on creating a conducive organisational culture for innovation to occur.

This suggests that for cultures high on Hofstede dimensions of power distance, collectivism, and uncertainty avoidance, the natural equilibrium for leaders in organisations to pursue innovation is to create a strong organisational culture that empowers employees, motivates them and delegates authority to them to make decisions. It would also explain why leadership, in itself, did not have a direct influence on innovation. Instead, when the leader worked through establishing a conducive organisational culture, then innovation would be achieved. In fact, the findings of this study are consistent with research which indicates that vision is a major facet of transformational leadership and is strongly associated with organisational culture (Sarros et al., 2008).

The leadership facets that emerged in the present study dealt with: charisma, professionalism, and vision of leader; continuous mentoring and clarification of objectives by leader, and appreciation of employees' efforts. Similarly, the items constituting the organisational culture scale included delegation to employees, encouragement of collaboration and teamwork among employees, and motivation of employees.

These findings are widely supported by the literature. For example, to create innovation support culture, various scholars have provided useful suggestions e.g., necessity of rewarding innovative behaviour and communicating this fact to employees (Mumford and Gustafson, 1988), thereby promoting a positive team climate. Similarly, the degree to which organisational members willingly share information is believed to have an effect on innovation, while the structures and processes that help the flow of information can in turn enhance innovation (Carneiro, 2000).

In their review of innovation literature, Folkestad and Gonzalez (2010) identified teamwork as a component of innovation related activities, similarly Shafie et al. (2014) proposed that organisations with characteristics such as trust, information sharing, and working closely with others demonstrate innovative behaviour. In this regard, organisations in UAE may benchmark on successful local initiatives that focus on creating innovation conducive cultures aligned with the national innovation strategy. As an illustration, organisations such as DEWA or RTA, have respectively set up an innovation lab and a portal for employees to submit innovative ideas. These ideas/insights are then collectively leveraged to launch new products/services or processes. These approaches should therefore be maintained and reinforced by organisational leaders and the effect would support enhanced innovation.

Trung et al. (2014) found that companies require leaders owning transformational characteristics, motivation and ability of building organisational culture to generate organisational innovation. This approach is supported by the present findings as well. Therefore, training workshops in leadership as well as team building workshops on the theme of organisational culture is recommended.

## **7 Limitations and future directions**

Although care has been taken to select validated measures from literature that reflect the domain of the study constructs, the current study has, for practical purposes adopted concise scales to measure the different items. It is recognised that this may not quite do

justice to the multi-dimensional structure of the transformational leadership and innovation culture constructs. The study also focused on the UAE, and although Gulf countries share similar national cultural traits, extending the findings to other Gulf countries needs to be undertaken with caution. Hence, it is recommended that qualitative research be undertaken within the Gulf region countries to investigate deeper the facets of organisational culture that would drive innovation, and the unearthed innovation culture dimensions may then be statistically confirmed by a quantitative study.

## References

- Aarons, G.A. and Sommerfeld, D.H. (2012) 'Leadership, innovation climate, and attitudes toward evidence-based practice during a state wide implementation', *Journal of the American Academy of Child & Adolescent Psychiatry*, Vol. 51, No. 4, pp.423–431.
- Abdullah, N.H., Hamid, N.A., Shamsuddin, A. and Wahab, E. (2016) 'Exploring the relationships among transformational leadership, organizational culture, and product innovation using PLS-SEM', *Proceedings of the 1st AAGBS International Conference on Business Management 2014 (AiCoBM 2014)*, Springer, pp.151–160.
- Al-Husseini, S. and Elbeltagi, I. (2016) 'Transformational leadership and innovation: a comparison study between Iraq's public and private higher education', *Studies in Higher Education*, Vol. 41, No. 1, pp.159–181.
- Al-Husseini, S., Elbeltagi, I. and Dosa, T. (2013) 'The effect of transformational leadership on product and process innovation in higher education: an empirical study in Iraq', *Proceedings of the International Conference on Intellectual Capital, Knowledge Management & Organizational Learning*, pp.1–10.
- Anderson, N., Potočnik, K. and Zhou, J. (2014) 'Innovation and creativity in organizations: a state-of-the-science review, prospective commentary, and guiding framework', *Journal of Management*, Vol. 40, No. 5, pp.1297–1333, doi:10.1177/0149206314527128.
- Avolio, B.J., Waldman, D.A. and Yammarino, F.J. (1991) 'Leading in the 1990s: the four I's of transformational leadership', *Journal of European Industrial Training*, Vol. 15, No. 4.
- Baron, R.M. and Kenny, D.A. (1986) 'The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations', *Journal of Personality and Social Psychology*, Vol. 51, p.1173.
- Bass, B.M. (1997) 'Does the transactional–transformational leadership paradigm transcend organizational and national boundaries?', *American Psychologist*, Vol. 52, No. 2, p.130.
- Bharadwaj, S. and Menon, A. (2000) 'Making innovation happen in organizations: individual creativity mechanisms, organizational creativity mechanisms or both?', *Journal of Product Innovation Management*, Vol. 17, No. 6, pp.424–434.
- Blunt, P. and Jones, M.L. (1997.) 'Exploring the limits of Western leadership theory in East Asia and Africa', *Personnel Review*, Vol. 26, Nos. 1/2, pp.6–23.
- Brislin, R.W. (1970) 'Back-translation for cross-cultural research', *Journal of Cross-Cultural Psychology*, Vol. 1, No. 3, pp.185–216.
- Bryant, S.E. (2003) 'The role of transformational and transactional leadership in creating, sharing and exploiting organizational knowledge', *Journal of Leadership & Organizational Studies*, Vol. 9, No. 4, pp.32–44.
- Burns, J.M.G. (1978) *Leadership*, Harper & Row.
- Büschgens, T., Bausch, A. and Balkin, D.B. (2013) 'Organizational culture and innovation: a meta-analytic review', *Journal of Product Innovation Management*, Vol. 30, No. 4, pp.763–781.
- Carneiro, A. (2000) 'How does knowledge management influence innovation and competitiveness?', *Journal of Knowledge Management*, Vol. 4, No. 2, pp.87–98.

- De Jong, J.P. and Den Hartog, D.N. (2007) 'How leaders influence employees' innovative behaviour', *European Journal of Innovation Management*, Vol. 10, No. 1, pp.41–64.
- Den Hartog, D.N., House, R.J., Hanges, P.J., Ruiz-Quintanilla, S.A. and Dorfman, P.W. (1999) 'Culture specific and cross-culturally generalizable implicit leadership theories: are attributes of charismatic/transformational leadership universally endorsed?', *The Leadership Quarterly*, Vol. 10, No. 2, pp.219–256.
- Denti, L. and Hemlin, S. (2012) 'Leadership and innovation in organizations: a systematic review of factors that mediate or moderate the relationship', *International Journal of Innovation Management*, Vol. 16, No. 3, 1240007-1-1240007-20.
- Dobni, C.B. (2008) 'Measuring innovation culture in organizations: the development of a generalized innovation culture construct using exploratory factor analysis', *European Journal of Innovation Management*, Vol. 11, No. 4, pp.539–559.
- Elenkov, D.S. and Manev, I.M. (2005) 'Top management leadership and influence on innovation: the role of sociocultural context', *Journal of Management*, Vol. 31, No. 3, pp.381–402.
- Ergeneli, A., Gohar, R. and Temirbekova, Z. (2007) 'Transformational leadership: its relationship to culture value dimensions', *International Journal of Intercultural Relations*, Vol. 31, No. 6, pp.703–724.
- Folkestad, J. and Gonzalez, R. (2010) 'Teamwork for innovation: a content analysis of the highly read and highly cited literature on innovation', *Advances in Developing Human Resources*, Vol. 12, No. 1, pp.115–136.
- García-Morales, V.J., Jiménez-Barrionuevo, M.M. and Gutiérrez-Gutiérrez, L. (2012) 'Transformational leadership influence on organizational performance through organizational learning and innovation', *Journal of Business Research*, Vol. 65, No. 7, pp.1040–1050.
- Gardner, W.L. and Avolio, B.J. (1998) 'The charismatic relationship: a dramaturgical perspective', *Academy of Management Review*, Vol. 23, No. 1, pp.32–58.
- Gumusluoglu, L. and Ilsev, A. (2009) 'Transformational leadership, creativity, and organizational innovation', *Journal of Business Research*, Vol. 62, No. 4, pp.461–473.
- Hair Jr., J.F., Wolfinbarger, M., Money, A.H., Samouel, P. and Page, M.J. (2015) *Essentials of Business Research Methods*, Routledge.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R. (2010) *Multivariate Data Analysis*, 7th Eds., Pearson, NY.
- Hartnell, C.A., Ou, A.Y. and Kinicki, A. (2011) 'Organizational culture and organizational effectiveness: a meta-analytic investigation of the competing values framework's theoretical suppositions', *Journal of Applied Psychology*, Vol. 96, No. 4, p.677.
- Hogan, S.J. and Coote, L.V. (2014) 'Organizational culture, innovation, and performance: a test of Schein's model', *Journal of Business Research*, Vol. 67, No. 8, pp.1609–1621.
- House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W. and Gupta, V. (2004) *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*, SAGE Publications.
- Howell, J.M. and Avolio, B.J. (1993) 'Transformational leadership, transactional leadership, locus of control, and support for innovation: key predictors of consolidated-business-unit performance', *Journal of Applied Psychology*, Vol. 78, No. 6, p.891.
- Jung, D.D., Wu, A. and Chow, C.W. (2008) 'Towards understanding the direct and indirect effects of CEOs' transformational leadership on firm innovation', *The Leadership Quarterly*, Vol. 19, No. 5, pp.582–594.
- Jung, D.I., Chow, C. and Wu, A. (2003) 'The role of transformational leadership in enhancing organizational innovation: hypotheses and some preliminary findings', *The Leadership Quarterly*, Vol. 14, No. 4, pp.525–544.
- Khalili, A. (2016) 'Linking transformational leadership, creativity, innovation, and innovation-supportive climate', *Management Decision*, Vol. 54, No. 9, pp.2277–2293, doi:10.1108/MD-03-2016-0196.
- Lumpkin, G.T. and DESS, G.G. (1996) 'Clarifying the entrepreneurial orientation construct and linking it to performance', *Academy of Management Review*, Vol. 21, No. 1, pp.135–172.

- Martins, E. and Terblanche, F. (2003) 'Building organisational culture that stimulates creativity and innovation', *European Journal of Innovation Management*, Vol. 6, No. 1, pp.64–74.
- Matzler, K., Schwarz, E., Deutinger, N. and Harms, R. (2008) 'The relationship between transformational leadership, product innovation and performance in SMEs', *Journal of Small Business & Entrepreneurship*, Vol. 21, No. 2, pp.139–151.
- Mohan, M., Voss, K.E. and Jiménez, F.R. (2017) 'Managerial disposition and front-end innovation success', *Journal of Business Research*, Vol. 70, pp.193–201.
- Mokhber, M., Wan Ismail, W.K.B. and Vakilbashi, A. (2015) 'Effect of transformational leadership and its components on organizational innovation', *Iranian Journal of Management Studies*, Vol. 8, No. 2, pp.221–241.
- Mumford, M.D. and Gustafson, S.B. (1988) 'Creativity syndrome: integration, application, and innovation. *Psychological Bulletin*, Vol. 103, No. 1, p.27.
- Naranjo Valencia, J.C., Sanz Valle, R. and Jiménez Jiménez, D. (2010) 'Organizational culture as determinant of product innovation', *European Journal of Innovation Management*, Vol. 13, No. 4, pp.466–480.
- Noruzi, A., Dalfard, V.M., Azhdari, B., Nazari-Shirkouhi, S. and Rezazadeh, A. (2013) 'Relations between transformational leadership, organizational learning, knowledge management, organizational innovation, and organizational performance: an empirical investigation of manufacturing firms', *The International Journal of Advanced Manufacturing Technology*, Vol. 64, Nos. 5–8, pp.1073–1085.
- Paulsen, N., Callan, V.J., Ayoko, O. and Saunders, D. (2013) 'Transformational leadership and innovation in an R&D organization experiencing major change', *Journal of Organizational Change Management*, Vol. 26, No. 3, pp.595–610.
- Podsakoff, P.M., Mackenzie, S.B., Moorman, R.H. and Fetter, R. (1990) 'Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors', *The Leadership Quarterly*, Vol. 1, No. 2, pp.107–142.
- Samad, S. (2012) 'The influence of innovation and transformational leadership on organizational performance', *Procedia-Social and Behavioral Sciences*, Vol. 57, pp.486–493.
- Sarros, J.C., Cooper, B.K. and Santora, J.C. (2008) 'Building a climate for innovation through transformational leadership and organizational culture', *Journal of Leadership & Organizational Studies*, Vol. 15, No. 2, pp.145–158, doi:10.1177/1548051808324100.
- Schein, E.H. (2006) *Organizational Culture and Leadership*, Vol. 356, John Wiley & Sons.
- Scott, S.G. and Bruce, R.A. (1994) 'Determinants of innovative behavior: a path model of individual innovation in the workplace', *Academy of Management Journal*, Vol. 37, No. 3, pp.580–607.
- Shafie, S.B., Siti-Nabiha, A.K. and Cheng Ling, T. (2014) 'Organizational culture, transformational leadership and product innovation: a conceptual review', *International Journal of Organizational Innovation*, Vol. 7, pp.30–43.
- Sinclair, K. (2014,) *Emirat's can earn more in the Private Sector, Says UAE Recruitment Expert*, 7 January, The National, UAE [online] <http://www.thenational.ae/uae> (accessed 12 September 2016).
- Škerlavaj, M., Song, J.H. and Lee, Y. (2010) 'Organizational learning culture, innovative culture and innovations in South Korean firms', *Expert Systems with Applications*, Vol. 37, No. 9, pp.6390–6403.
- Smith, D. (2015) *Exploring Innovation*, McGraw-Hill Higher Education.
- Steiber, A. and Alänge, S. (2013) 'A corporate system for continuous innovation: the case of Google Inc', *European Journal of Innovation Management*, Vol. 16, No. 2, pp.243–264.
- Tidd, J. (2001) 'Innovation management in context: environment, organization and performance', *International Journal of Management Reviews*, Vol. 3, No. 3.
- Trung, N.N., Nghi, P.T., Soldier, L.L., Hoi, T.V. and KIM, W.J. (2014) 'Leadership, resource and organisational innovation: findings from state and non-state enterprises', *International Journal of Innovation Management*, Vol. 18, No. 5, pp.1450034–

- Unsworth, K. and Parker, S.K. (2003) 'Promoting a proactive and innovative workforce for the new workplace', in Holman, D., Wall, T.D., Clegg, C.W., Sparrow, P. and Howard, A. (Eds.): *The New Workplace: A Guide To The Human Impact Of Modern Working Practices*, John Wiley & Sons, Chichester.
- Urbancová, H. (2013) 'Competitive advantage achievement through innovation and knowledge', *Journal of Competitiveness*, Vol. 5, No. 1.
- Uzkurt, C., Kumar, R., Semih Kimzan, H. and Eminoğlu, G. (2013) 'Role of innovation in the relationship between organizational culture and firm performance: a study of the banking sector in Turkey', *European Journal of Innovation Management*, Vol. 16, No. 1, pp.92–117.
- Wang, Z. and Wang, N. (2012) 'Knowledge sharing, innovation and firm performance', *Expert Systems with Applications*, Vol. 39, No. 10, pp.8899–8908.
- Weng, R-H., Huang, C-Y., Chen, L-M. and Chang, L-Y. (2015) 'Exploring the impact of transformational leadership on nurse innovation behaviour: a cross-sectional study', *Journal of Nursing Management*, Vol. 23, No. 4, pp.427–439, doi:10.1111/jonm.12149.
- Wilson-Evered, E., Härtel, C.E. and Neale, M. (2001) 'A longitudinal study of work group innovation: the importance of transformational leadership and morale', *Advances in Health Care Management*, Vol. 2, No. 2, pp.315–340.
- Yukl, G. (2012) *Leadership in Organizations*, Pearson.
- Zhu, C. and Engels, N. (2014) 'Organizational culture and instructional innovations in higher education: perceptions and reactions of teachers and students', *Educational Management Administration & Leadership*, Vol. 42, No. 1, pp.136–158.

## Annex

### List of items

- *Organizational culture*
  - 1 Employees in my organization are given personal responsibility to achieve their part of the organization's innovation goals.
  - 2 Employees in my organization are encouraged to cooperate with the people with whom they work to solve problems.
  - 3 I am enthusiastic about the contribution I make to my organization's objectives.
  - 4 I have the authority to make decisions at work.
- *Organizational innovation*
  - 5 My organization can be described as flexible and continually adapting to change.
  - 6 Development of new products and services at my organization is an ongoing process.
  - 7 There are adequate resources devoted to innovation in my organization.
- *Transformational leadership*
  - 8 My manager demonstrates charisma and a sense of professionalism when he/she communicates to me.
  - 9 My manager has a vision that inspires me to do better.
  - 10 My manager is always keen on clarifying what is required from me.
  - 11 My manager expresses appreciation when I do a good job.