

Study of the Transformational Leadership and Organizational Culture as Predictors of Employee Creativity and Innovation in the Iraq Oil and Gas Service Industry

Firas Salman Khudhair

Al-Mustaqbal University College
Firas1990salman@gmail.com

Rafiduraida Abdul Rahman

University Pendidikan Sultan Idris (Upsi), Perak Darulridzuan, Malaysia
Rafiduraida@fpe.upsi.edu.my

Ahmad Amri Bin Zainal Adnan

University Pendidikan Sultan Idris (Upsi), Perak Darulridzuan, Malaysia
a.amri@upsi.edu.my

Dr. Anmar Adnan Khudhair

Council of Mibisters, Border Ports Authority, Iraq
Anmar.adan@mustaqbal-college.edu.iq

Abstract: The 21st century global market demands highly skilled workforce who are intellectually active, creative, innovative and capable of critical thinking. Therefore, this study examines the factors determining employee creative and innovative undertakings at work in the oil and gas industry in Iraq with a focus on transformational leadership and organizational culture. The study adopted survey design and simple and moderated regression analyses to test seven hypotheses. Data were collected from 414 (270 males and 144 females) randomly selected employees of four oil and gas service companies in Lagos aged between 19 and 61 years ($x=32.4$). Employees completed questionnaires consisting of validated scales of employee creativity and innovation, transformational leadership and organizational culture in the study. Cronbach alpha of the scales ranged from 0.86 to 0.96. Results showed that transformational leadership has significant impact on employee creativity ($R^2=.42$, $p<.001$) and employee innovation ($R^2=.42$, $p<.001$); organizational culture has significant impact on employee creativity ($R^2=.26$, $p<.001$) and employee innovation ($R^2=.14$, $p<.001$); and transformational leadership and organizational culture significantly interacted to impact employee creativity ($\Delta R^2=.13$, $p<.001$) and employee innovation ($\Delta R^2=.14$, $p<.001$). It was concluded that transformational leadership and appropriate organizational culture are important factors in facilitating employee creativity and innovation in the oil and gas service industry in Iraq. It was recommended that oil and gas service companies can facilitate employee creativity and innovation by promoting and investing in transformational leadership training of their managerial staff as well as instituting enabling innovative organisational culture.

Keywords: Employee creativity, innovation, transformational leadership and organisational culture

1- Introduction

The business environment is becoming increasingly characterized by rapid technological change, shortening product life cycles, dynamic services and globalization. Employees' creativity and innovation are therefore being considered crucial factors in increasing organisational performance and the core competency organisations must develop (Nussbaum, 2005; Alsop, 2003) to survive, grow and gain competitive edge in today's turbulent business environment. Through their creative and innovative efforts, employees in organisations attempt to change certain aspects of their work or their work products in order to gain some benefits they value for themselves or for the organisation. Some of these benefits are improvement in the employees' work performance, higher productivity, improvement in products, production routines and services' delivery and development of new markets to meet organisational objectives and competitive advantage (Odetunde, 2012).

Crucial to facilitating employee innovative efforts and organizational innovation are organizational

leadership quality and the inherent culture. Urbancová (2013) opined that creative and innovative organizations do not emerge by accident; rather, leaders drive and control deliberate changes in structure, culture, and process in order to transform such organisations into creative, effective, and productive ones. Kotter (1998) observed that through leadership organizations can truly develop and nurture culture that is adaptive to change. Facilitating organizational innovation, therefore, calls to attention the important role of leadership quality of managers and supervisors. The importance of managers' leadership behaviour has been identified by many researchers as being one important facilitator of organisational innovation (Jung, 2001; Mumford, Scott, Gaddis, & Strange, 2002). Cummings and O'Connell (1978) suggested that leadership is among the most important factors affecting innovation. This might be through leaders' effect on organizational characteristics such as culture (Woodman, Sawyer, and Griffin, 1993), or through a direct effect of their behaviour on employees' creativity (Oldham and Cummings, 1996), and motivation (Tierney, Farmer, and Graen, 1999). Leaders can help their followers to exhibit higher levels of creativity at work (Shin and Zhou, 2003), can establish a work environment supportive of creativity (Amabile, Schatzel, Moneta, & Kramer, 2004; Amabile, Conti, Coon, Lazenby, & Herron, 1996), can create an organizational climate and culture serving as a guiding principle for more creative work processes (Scott and Bruce, 1994), and can develop and maintain a system that rewards creative performance through compensation and other human resource-related policies (Jung, Chow, and Wu, 2003). In particular, transformational leadership has been held to be more effective in enhancing organizational innovation (Gardner & Avolio, 1998; Howell & Avolio, 1993).

Organizational culture, defined as the organizational norms and expectations regarding how people behave and how things are done in an organization (Glisson & James, 2002) has been considered to have a significant influence on innovation in organisation (Carmeli, 2005). Since it influences employee behaviour, it may lead them to accept innovation as a fundamental value of the organization and to feel more involved in the business (Hartmann, 2006). Consequently, the literature considers organizational culture to be one of the factors that can stimulate the most an innovative behaviour among the members of the organization (Martins & Terblanche, 2003; McLean, 2005; Mumford, 2000). The capability to inculcate a culture of creativity and innovation is, therefore, a vital ingredient in the organizational innovation process (Okibo & Shikanda, 2011).

The Iraq oil and gas service industry is one of the most competitive in the country with many companies offering similar services. Though, the industry is competitive, it has been bedevilled by failure or poor performance despite aggressive strategic marketing behaviour (Bolaji, 2003) such that there is still low awareness of oil and gas services to clients and other interested public (Akinyele, 2011). For firms operating within the oil and gas services industry, possessing an innovation culture is not simply an aid, it is a necessity. Companies that conduct business in the oil and gas service industry must therefore innovate or die and innovativeness in the sector serves as a critical success factor. As Birasnav, Rangnekar and Dalpati (2011) maintained, the success of an organization depends upon its ability to create innovative ideas, new information, business models and new ways of conducting business. Important determinants of this are the organizational leadership and culture. Therefore, the aim of this study is to examine the effects of transformational leadership and organisational culture on employee creativity and innovation in the Iraq's oil and gas service industry.

2- Literature and Hypotheses

2.1 The Employee Innovation Process

Though intimately correlated and often used interchangeably, many authors have shown that creativity and innovation individually refer to two distinct activities. For example, many researchers conceptualize innovation as two distinct processes of generation of new ideas and the implementation of these ideas. Creativity is defined as the development of novel (i.e., original, unexpected) and useful ideas, products or problem solutions (Amabile, Barsade, Mueller, & Staw, 2005; Feist, 1999; Madjar, Oldham, & Pratt, 2002; West, 2002), while innovation is the translating of creative ideas into relevant and workable solutions or fill to identified problems or gap. As a process, innovation is the implementing of a new idea and bringing of any new problem solving idea into use (Van de Ven & Angle, 1989). Amabile (1988) defines it as the successful implementation of creative ideas and West and Farr (1990) define it as the intentional

introduction and application within a role, group or organisation of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organisation or wider society. According to Akinboye (2000), innovation is the application of new ideas, concepts and designs to create wealth. Thus, innovation is restricted to intentional attempts to introduce changes and bring about benefits from new changes.

Thus, creativity as a part of the innovation process, is particularly relevant at the fuzzy front-end of the innovation process, that is, in the idea generation phase and as such a prerequisite for innovation (Alves, Marques, Saur, & Marques, 2005; Stenmark, 2005) and a necessary starting point - but an insufficient condition – for innovation (Amabile, 1997). Creativity without innovation is of significantly diminished value. The reverse is also true that: without creative ideas to feed the innovation pipeline so they may be promoted and developed, innovation is an engine without fuel (McLean, 2005). To Amabile, Conti, Coon, Lazenby and Herron (1996) all innovation begins with creative ideas. Amabile (2004) further states that no innovation is possible without the creative processes that mark the beginning stage of the process: identifying important problems and opportunities, gathering information, generating new ideas and exploring the validity of those ideas.

Therefore, the individual is the ultimate source of any new idea (Redmond et al., 1993) and provides the foundation for individual and organizational innovation (Shalley and Gilson, 2004). Hence, theoretically, the creative performance of employees provides the raw material needed for organizational innovation (Oldham and Cummings, 1996). Creative employees are those who tend to identify opportunities for new products. They may find new uses for existing methods or equipment, or generate novel but operable work-related ideas. These people not only are more likely to come up with creative solutions to problems and champion ideas to others, but also develop adequate plans for the implementation of new ideas. As Shalley and Gilson (2004) suggest, creative employees produce novel and useful ideas about organizational products, practices, or procedures. Besides, these people might create a spill-over effect by serving as role models to the rest of the organization. Shalley and Gilson (2004) further state that creative employees' new ideas are transferable to other employees in the organization for their own use and development. Consequently, such creativity at the individual level, through idea generation and implementation, is likely to lead to the development of innovative products at the organizational level.

2.2 Transformational Leadership, Employee Creativity and Innovation

Over the last two decades, many management scholars and practitioners have called for more adaptive leadership by top business executives in responding to the rapid changes confronting today's organizations (Bass, Avolio, Jung, & Berson, 2003). Such top

business executives are opined to need to possess certain skills to induce innovative behaviours in their staff (Mumford, Scott, Gaddis, & Strange, 2002). Transformational leadership has been recognised as fulfilling this need. Reviewing the literature on leadership and innovation reveals that the most significant style of leadership influencing creativity is transformational leadership (Sosik, Kahai, and Avolio, 1999).

Burns (1978) introduced the transformational leadership theory and was further developed by Bass and Avolio (1995) as involving motivating followers to move beyond their own self-interests for the benefits of the group and the organization and view their task from the new perspectives (McLaurin & Amri, 2008). Transformational leaders are believed to have capacity to raise the performance expectations of their followers (Bass, 1995; Odetunde, 2005) and seek to transform followers' personal values and self-concepts, and move them to higher level of needs and aspiration (Jung, 2001). According to Elkins and Keller (2003), the four characteristic behaviours of transformational leaders closely match the determinants of innovation and creativity at the workplace, some of which are vision, support for innovation, autonomy, encouragement, recognition, and challenge. These leader's behaviours are likely to be the impetus for creativity and innovation-enhancing forces. Using charisma, the leader inspires admiration, respect, and loyalty, and emphasizes the importance of having a collective sense of mission. With this quality, the leader influences focus on values, beliefs, sense of mission. By inspirational motivation, the leader articulates an exciting vision of the future, provides encouragement into the idea generation process and shows the followers how to achieve the goals, and expresses his or her belief that they can do it (Bass & Avolio, 1995). Individualized consideration “serves as a reward” for the followers by providing recognition and

encouragement and by this quality, the leader builds a one-to-one relationship with his or her followers, and understands and considers their differing needs, skills, and aspirations, and broadens and elevates the interests of his or her employees (Bass, 1990), and stimulates followers to think about old problems in new ways (Bass, 1985). Intellectual stimulation enhances exploratory thinking and finding solutions to difficult problems by providing support for innovation, autonomy, and challenge (Avolio, Bass & Jung, 1999). The resulting intrinsic motivation felt by the followers of transformational leaders is, therefore, an important source of creativity and innovation. Furthermore, the emotional relationships a transformational leader builds with his or her followers (Bass, 1990) might be another creativity and innovation enhancing force as emotional attachment is likely to lead to higher levels of creativity (Hunt, Stelluto, & Hooijberg, 2004). That is, employees are more likely to respond to this leader's challenge and support for innovation by exhibiting more creativity in their tasks, given their emotional ties with their leader.

Similarly, other advocates of transformational leadership have maintained that it creates personal and professional commitment from subordinates by raising their self-awareness toward higher-level needs like self-esteem and self-actualization (Bass, 1985). Jung, Chow, and Wu (2003) also opine that transformational leadership enhances creativity by

(a) engaging employees' personal value systems and thereby heightening levels of motivation toward higher levels of performance, and (b) encouraging employees to think creatively. Such leaders have the quality to awaken new ideas in followers and influence them to break-away from the old ways of thinking. Acting as coaches and mentors, such leaders teach and help followers reach their potentials and develop their strengths (Bass, 1985; Bass & Avolio, 1990) and facilitate unconventional and innovative thinking and inspire followers' innovation implementation behaviour (Michaelis, Stegmaier, & Sonntag, 2010). Reuvers, van Engen, Vinkenburg, & Wilson-Evered (2008) also assert that transformational leaders highlight individual qualities of followers, thereby emphasizing the diversity of talent, instigating innovative behaviour. Besides, transformational leaders are concerned with the individual achievement and development of the subordinates, for instance via mentoring programs (Bass & Avolio, 1989). This application leads to new learning opportunities for individuals resulting in new knowledge for idea generation (Gumusluoglu & Ilsev, 2009). Those approaches induce the employees intrinsic motivation causing them to look for novel approaches to problem solving (Zhou, 1998).

In line with these assertions, a number of studies have found that leaders who display transformational behaviours are able to realign their followers' values and norms, promote both personal and organizational changes, and help followers to exceed their initial performance expectations (e.g., Jung & Avolio, 2000). Chartier (1998) reported a significant and positive relationship between top managers' openness to change and organizational innovation. Tierney and Farmer (2004) found transformational leaders increase employee creative self-efficacy, encouraged their followers to think "out of the box" and to adopt generative and exploratory thinking processes that yielded more creative ideas and solutions (Sosik, Avolio, & Kahai, 1997). In addition, Elenkov and Manev (2005) in a study of 270 top managers' drawn from 12 European countries confirmed that transformational top managers positively influence innovation processes in organizations. This finding is consistent with Jung, Chow, and Wu (2003) who studied the effects of transformational leadership, empowerment, and support for innovation on multiple measures of organizational innovation and found that transformational leadership was significantly and positively related to organizational innovation and support for innovation. Shin and Zhou (2003) also investigated the effects of transformational leadership on employees' individual-level creativity in a real business setting using a sample of 260 R&D employees and their supervisors from 46 companies and found that Korean employees exhibit more creativity under transformational leadership. What all this implies, in general, is that transformational leadership has positive effects on employee creativity and innovation and it is expected that this will

apply to the oil and gas services industry of the Iraq economy. Thus, it is hypothesised that:

Hypothesis 1: Transformational leadership will significantly predict employee creativity and innovation in the Iraq oil and gas service industry.

2.3. Organisational Culture, Employee Creativity and Innovation

Organisational culture is an important construct which has been implicated in a number of individual and organisational related processes and outcomes (Yesil & Ahmet, 2012). Organisational culture affect employee behaviour, learning and development (Bollinger & Smith, 2001; Saeed & Hassan, 2000), creativity and innovation (Martins & Terblache, 2003; Mclean, 2005; Vincent, Bharadwaj, & Challagalla, 2004), knowledge management (Tseng, 2010), and performance (Oparanma, 2010; Tseng, 2010; Zain, Ihsak, & Ghani, 2009).

As a complex set of ideologies, traditions, commitments, and values that are shared throughout the organisation, organisation's culture influences how the organisation conducts its whole performance becoming a potential source of innovation, advance and advantage (Poskiene, 2006). An organisation's culture also reflects the things people value, the way people within the organisation generally relate to one another, share ideas and work together on a daily basis to get things done. It includes the shared view of directions and values, priorities, commitments and feelings of loyalty and personal worth within an organisation. A positive organisational culture is therefore essential for an organisation to be successful as it provides personal work satisfaction, supports emotional and physical well-being and generates high morale as well as positive perceptions by others. As explained by Amiri, Qayoumi and Soltani (2014), organizational culture is a group of fundamental dispositions that employees discover and develop to be adapted to the environment and reaching to internal unity which affect all organizational phenomena such as employee behaviour, organization performance, and creativity and innovation.

In today's business world, an organisation's culture must embed elements that facilitate innovativeness. An element of a company's organizational culture is an innovation-oriented culture. According to Szczepańska-Woszczyzna (2014), organisational culture for innovation is a way of thinking and behaving that creates, develops and establishes values and attitudes within a firm, which may in turn raise, accept and support ideas and changes involving an improvement in the functioning and efficiency of the firm, even though such changes may mean a conflict with conventional and traditional behaviour. Szczepańska-Woszczyzna further stated that elements of organisational culture for innovation consist of innovation-oriented motivation, innovative competence, behaviour in innovative situation as well as style and quality of management determining the climate for innovation. According to Chowdhury (2013) aligning the core values of the organisation is an important element in idea generation. Martins and Terblanche (2003), on their part, opine that successful organisations embed some elements of innovation culture in their management processes and overall culture through two primary ways. First, through the socialisation processes present within the organisation whereby individuals learn the existing organizational norms and whether or not innovation serves as one of those norms. Secondly, since an organisation's basic values, assumptions and beliefs are exposed by the structures, policies, and management practices and procedures, they are linked to the levels of creativity and innovation in the workplace.

Several characteristics of culture have been hypothesized to enhance innovative culture in organisations. Gadomska-Lila (2010) listed characteristics of pro-innovation organizational culture to include, creating a climate that would be favourable to organizational changes, developing knowledge and skills and sharing knowledge, tolerance for risk, uncertainty and novelty, implementing democratic principles of decision-making and conflict solving, supporting group activities, building an atmosphere of recognition and respect for innovators, supporting creative thinking and problem solving. Excellence in leading innovation has everything to do with how the leader or management creates a culture where innovation and creativity thrives in every corner. Plesk and Bevan (2003) developed an assessment tool that identifies seven dimensions of organisational culture that affect the speed and frequency of organisational creativity and innovation, namely: risk taking, resources availability, widely shared knowledge, specific goal targets, tool and techniques, reward systems, and rapidly formed relationships. McLean (2005) also added organizational encouragement, supervisory encouragement, work group encouragement, freedom/autonomy, and resources support. Mclean, however, further stated that control reduces creative and innovative ability of the organisations. According to Yesil and Kaya (2012), all these characteristics relate to different dimensions of

organisational culture and in varying degrees may affect innovation capability of organisations.

Cameron and Quinn (1999, 2006) developed the competing values framework model which identified four types organizational cultures as adhocracy, clan, market and hierarchy cultures. Cameron (2004), Cameron and Quinn (2006) and Tseng (2010) view clan culture as a friendly place with an extended family working together. The *clan culture* is characterised by loyalty, morale, commitment, tradition, collaboration, teamwork, participation, and consensus, individual development. *Adhocracy culture* is characterized as a dynamic, entrepreneurial, innovative and creative workplace. It emphasizes new product and service development, growth, change, and experimentation. A *market culture* is regarded as a results-oriented workplace with emphasis on winning, outpacing the competition, escalating share price, and market leadership. A formalized and structured place along with procedures, well-defined processes and a smooth-running

organization are the main characteristics of *hierarchy culture*. The long-term concern of this type of culture is stability, predictability, and efficiency (Cameron, 2004; Tseng, 2010). These characteristics can be argued to influence innovation capability of organisations. This model has been used in many empirical studies on organizational culture (e.g., Stock, Mcfaddena, & Gowen, 2007; Valencia, Valle, & Jiménez, 2010). Valencia et al., (2010) also suggested further studies to explore organisational culture and innovation by using organisational culture model of Cameron and Quinn (1999, 2006). The suggestion is adopted in this study.

Empirical studies have provided evidence of link between organisational culture and innovative capability of organisation. Amiri, Qayoumi and Soltani (2014), for example, found significant positive relationship between organizational culture and creativity. In their words, without an effective organization culture, creative activities cannot be expected. Similarly, Amabile (1988) believed that the existence of a proper culture for creativity can play a key role as a permanent stimulation and also lead employees' behaviour to birth of new ideas. Edwards, Kumar, and Ranjan (2002) reflected that the organisation culture with values, norms and beliefs is an invaluable enabler of innovation. Martins and Terblanche (2003) argued that organisational culture has an influence on the degree to which creativity and innovation are stimulated in an organisation. Vincent, Bharadwaj, and Challagalla (2004) argued that environmental, organizational capabilities, organizational demographics, and organizational structure variables affect innovation in organisations. In particular, organizational capabilities and structure account for the greatest level of unique variance on innovation. Martins and Martins (2002) argued that, as many researchers agree, organisational culture is a contributing factor to the degree to which creative and innovative behaviour is found among employees in an organisation. Ahmed (1998) argued that culture is a primary determinant of innovation and possession of positive cultural characteristics provides the organisation with necessary ingredients to innovate.

Thus, literature has shown that organisational culture is a significant contributor to organisation's innovativeness. As Wycoff (2003) reveals that culture serves as the most common reason for innovation failure and remarks that firms lacking an appropriate corporate culture which encourages new ideas and supports risk taking are likely to suffer difficulty generating and implementing innovative ideas, it is important to determine the extent to which the prevailing culture of the oil and gas service industry in Iraq facilitates employee creativity and innovation. Thus, it is hypothesised that:

Hypothesis 2: Organisational culture will be a significant predictor of employee creativity and innovation in the Iraq oil and gas service industry.

2.3. Transformational Leadership, Organisational Culture, and Employee Creativity and Innovation

While leadership is an embedded element of organizational culture, the former also significantly determines the latter, particularly innovation culture in organisation. This view is supported by Read (2000) who concludes in his literature review that the most important determinant of a beneficial innovation culture is

the management's attitudes towards innovation. Managers who support innovation and an innovative corporate culture build organisations with stronger overall innovation cultures. This view is also supported by Martins and Terblanche (2003). Schein (1992) posits that it is the firm's leadership and their actions which promote an innovation culture. Zairi and Al-Mashari (2005) also maintain that senior managers play a crucial role in building an effective and sustainable innovation culture in organisation.

When employees work with managers who are predisposed to innovate, the collective innovation is increased (Tierney & Graen, 2008). The overall managerial attitude towards change - a pro-innovation attitude - plays a crucial role in the adoption of innovations (Damanpour, 2009). At the executive level, where top managers communicate the organizational climate, transformational leadership by the Chief Executive can have a direct and positive effect on organizational innovation (Jung, Chow & Wu, 2003).

A Chief Executive can create a culture where innovation is accepted and rewarded and mistakes are tolerated. Even more important for firm survival is the external cheer-leading role transformational leaders take with innovations in the marketplace. By championing innovations beyond traditional market boundaries externally, transformational leaders also ensure the market success of the innovations (Gumusluoglu & Ilsev, 2009).

As implied in Chowdhury (2013) cited in Iya (2015), it takes visionary leadership to support and promote "Deviant Citizenship Behaviour" - an endogenous quality that requires an organisation to be risk tolerant, to strategize, and create appropriate organisational support systems for creativity and innovation. Even though companies cannot order their employees to be creative, companies, through the leadership, can encourage innovation by generating creative work culture in which employees notice that creative thoughts and ideas are appreciated and welcomed (Lukić, Džamić, Knežević, Alčaković, & Bošković, 2014).

Thus, with the empirical evidence in support of the individual influence of transformational leadership and organizational culture on creativity and innovation in organisation, and their possible interplay, it is not unexpected that the two factors will

interact to enhance innovative outcomes in organisations. Therefore, it is hypothesized that:

Hypothesis 3: Transformational leadership and organizational culture will have significant interaction effects on employee creativity and innovation in the Iraq oil and gas service industry.

3. Methods

3.1 Research Design

The study adopted a survey method which involves the use of questionnaires to gather data on the variables of study. This method allows information to be collected from a large population once a representative sample has been drawn (Odetunde, 2011). The study involved a major oil and gas service firm based in Lagos, Iraq . The company was chosen because it requires creativity and innovation in its service delivery due to competition. For reasons bothering on ethics the identity of the company could not be revealed as doing so would breach the confidentiality and anonymity agreement reached with the company management.

3.2 Sample and Procedure

Organisations in the oil and gas service industry are many and four firms in the industry were conveniently sampled. The four firms are situated in Lagos where most firms in the industry are located. A total of four hundred and fourteen (414) employees of the four oil and gas firms were randomly selected for the study. Two hundred and seventy (65.2%) were male and one hundred and forty-four (34.8%) female employees. Their ages ranged from 19 to 60 years ($x = 38.4$ years) and their education ranged from National Diploma to post-graduate degree/diploma. Their job experience ranged from 4 to 28 years ($x = 6.48$ and $SD = 1.6$). While adequate sample size is an issue for consideration in survey research, Velicer and Fava (1998) produced evidence indicating that ratio of three participants to an item is adequate for most survey research. The ratio of participant-per-item of 4.6 in this study is considered adequate to satisfy the sample size

criterion. Simple random sampling procedure was conducted on the roll-calls of employees provided by their heads of department, section and unit. Employees corresponding to the numbers picked from a lucky-dip were selected to participate in the study. This method ensured that every employee in the defined population had an equal and independent chance of being selected and this maximized the external validity of the study.

Subsequent to receiving the permission of the management of the various organisations, questionnaires containing the various measuring scales were personally administered to the employees at work. Data collection lasted for two months.

3.3. Measures

3.1. Criterion Variables

Employee Creativity and Innovation: Employee creativity and innovation were measured by Borill, Wall, West, Hardy, Shappiro, Haynes, Stride, Woods and Cater's (1998) measures of suggestion making and implementation as modified by Odetunde (2012). The two scales consist of 9 items each tapping information on the extent to which employees propose changes on various aspects of their work and these suggested changes were implemented. The 6 items on the two original scales were modified and 3 new ones were added to tap other work domains not covered in the original scales. The 3 additional items were derived from the literature of creativity and innovation. The modified items on both creativity and innovation scales are: 1) new methods of improving operational efficiency of employee unit; 2) need to improve products/services to better meet customers' needs; and 3) changes to various aspects of work area. Response to scale is 5- point Likert format ranging from 1 (to no extent) to 5 (to a very great extent).

Test of reliability of both creativity and innovation scales using Spearman Brown split- half reliability test yielded reliability coefficient of 0.83 and 0.87 for creativity and innovation respectively. Item-total correlation coefficients used to establish internal consistency of the creativity scale ranged from 0.59 to 0.76 and the innovation scale ranged from 0.63 to 0.81. Howit and Cramer (1997) opined that Spearman Brown split- half reliability coefficient of 0.40 and item-total correlation coefficient of 0.40 are sufficient to establish internal consistency of a scale. Cronbach alphas of 0.90 and 0.93 were reported for creativity and innovation respectively. Varimax rotation revealed one factor for each of the two scales. Construct validity was determined by discriminant and convergence validities which revealed least item loadings of 0.67 and 0.70, and eigenvalues of 8.90 and 8.99 for creativity and innovation respectively. Hinton, Brownlow, McMurray and Cozens (2004) suggested item loading of 0.40 with no cross- loading of items above 0.40 and eigenvalue of 1 as sufficient to establish discriminant and convergence validities of posited constructs.

3.2 Predictor Variables

Transformational Leaderships: Measure of transformational leadership was taken with the Odetunde's (2005) modified and revalidated version of the transformational leadership subscale of MLQ-1 (Bass, 1985) in the Iraq applied settings. Odetunde (2005) identified two factor structures on the revalidated version of MLQ-1 namely, transformational and transactional leaderships with the transformational leadership factor comprising of the facets of *Charismatic Leadership, Individualised Consideration, Intellectual Stimulation* and *Contingent Reward*. Contingent Reward is a transactional leadership factor under the MLQ-1. Odetunde (2005) reported a split-half reliability coefficient of .96, total-item correlation coefficients of .96 Cronbach alpha of 0.98 for the

transformational leadership subscale. Discriminant and convergence validity tests yielded least item loadings of 0.76 and eigenvalue of 8.60 to satisfy conditions for construct validity. Participants rated their managers/supervisors on the revalidated scale on a 5- point Likert response scale ranging from 1 (Not at all) to 5 (Frequently) with higher values indicating a greater perceived amount of the leadership quality.

Organisational Culture: Measures of organisational culture was taken with the 24 item Organizational Culture Assessment Instrument (OCAI) (Cameron & Quinn, 1999; Cameron & Quinn, 2006) as revalidated by Heritage, Pollock, and Roberts (2014). The OCAI provides a diagnostic assessment of four archetypical organisational culture based on an examination of core values, shared assumptions, and common approaches to work. Sample items on the clan dimension of the scale include: 'The organization is a very personal place', 'It is like an extended family', and 'People seem to share a lot of themselves'. Sample items from the Adhocracy scale include: 'The organization is a very dynamic and entrepreneurial place', and 'People are willing to stick their necks out and take risks'. Sample item from the Hierarchy scale include: 'The

organization is a very controlled and structured place’, and ‘Formal procedures generally govern what people do’. Sample item from the Market scale include: ‘The organization is very results-oriented’, ‘A major concern is with getting the job done’, and ‘People are very competitive and achievement-oriented’. Employees indicated the extent to which they agree with each item using a 5 point Likert scale (1 = strongly disagree, 5 = strongly agree). Only the current organisational practises dimension of the scale was used since this dimension measures the actual organisational culture in the organisation as perceived by the employees, rather than what they perceive to be an ideal organisational culture. Composite score on the four dimensions of OCAI scale rather than individual scores on each dimension was used. Cronbach alpha for each of the four archetypal profiles of the original scale range from 0.71 to 0.80 (Cameron & Quinn, 1999, 2006).

4. Results

4.1 Descriptive Statistics

Means, standard deviations, and zero-order correlations of all measured variables are shown in Table 1. Results show positive relationships between transformational leadership and employee creativity ($R = .19, p < .01$) and innovation ($R = .30, p < .001$), and between organizational culture and employee creativity ($R = .11, p > .01$) and innovation ($R = .23, p < .001$). Thus, there are significant positive relationships among all the study variables.

Table 1: Means standard deviation and correlations among study variables

	Variable	M	SD	1	2	3	4
1	Transformational Leadership	33.72	5.87	1.00			
2	Organisational Culture	22.73	5.07	.32***	1.00		
3	Employee Creativity	30.00	6.32	.20**	.11**	1.00	
4	Employee Innovation	28.18	7.39	.30***	.23***	.64***	1.00

*** $p < .001$, ** $p < .01$, * $p < .05$

To test the three hypotheses in the study, simple and moderated regression analyses were conducted. Hypothesis 1 which stated that transformational leadership will have significant predictive effect on employee creativity and employee innovation was tested with simple regression analysis. Employee creativity and employee innovation were each regressed on transformational leadership. Results of the analyses in Table 2 show that transformational leadership has significant predictive effect on employee creativity ($R^2 = .04, P < .05$) and employee innovation ($R^2 = .09, p < .01$). Thus, the hypothesis is confirmed. It can however be observed that transformational leadership has greater predictive effect on employee innovation than employee creativity.

Table 2: Simple Regression Analysis to test the Effect of Transformational Leadership on Employee Creativity and Innovation in Iraq Oil and Gas Service Sector

Criterion Variables	Predictor Variables	F	R	R ²	Adj-R ²	ΔR ²
Employee Creativity	Transformational Leadership	5.46*	.19**	.03*	.02	.04*
Employee Innovation	Transformational Leadership	14.59*	.30***	.09**	.08	.10**

*** $P < .001$, ** $p < .01$, * $p < .05$, $N = 414$

Field Survey, 2015

Hypothesis 2 which stated that organisational culture will have significant predictive effect on employee creativity and employee innovation was tested with a simple regression analysis. Employee creativity and employee innovation were each regressed on organizational culture. Results of the analyses in Table 3 show

that organizational culture has significant effect on employee creativity ($R^2 = .02, p < .05$) and employee innovation ($R^2 = .05, p < .05$). Hence, hypothesis 2 is also confirmed and it will be observed too that organizational culture has greater predictive effect on employee innovation than employee creativity.

Table 3: Simple Regression Analysis to test the effect of Organisational Culture on Employee Creativity and Innovation in the Iraq Oil and Gas Service Sector

Criterion Variables	Predictor Variables	F	R	R ²	Adj-R ²	ΔR ²
Employee Creativity	Organisational Culture	2.64*	.11**	.02*	.01	.03*
Employee Innovation	Organisational Culture	8.27**	.23**	.05*	.04	.06*

** $P < .01$, * $P < .05$, $N = 414$

Field Survey, 2015

To test hypothesis 3 which stated that transformational leadership and organisational culture will have significant interaction effects on employee creativity and employee innovation, a moderated regression analysis was conducted. To test for the interaction effect, transformational leadership was entered in step 1 of the regression model, organisational culture in step 2 and the interaction term of transformational leadership and organisational culture (TLSxOC) entered in step 3. The same is repeated for employee innovation. Results of the moderated regression analysis in Table 5, show that transformational leadership contributed 4% of the variance in employee creativity ($R^2 = .03, p < .05$) and 10% in employee innovation ($R^2 = .10, p < .01$); organisational culture produced 3% variance in employee creativity ($R^2 = .02, p < .05$) and 6% in employee innovation ($R^2 = .06, p < .05$). The interaction term of transformational leadership and organisational culture increased the variance in employee creativity by 2% ($\Delta R^2 = .02, p < .05$) and employee innovation by 4% ($\Delta R^2 = .04, p < .05$). Thus, the interaction of transformational leadership and organisational culture have significant effects on employee creativity and employee innovation. Therefore, hypothesis 3 is confirmed.

Table 5: Moderated Regression Analysis to test the Interaction Effect of Transformational Leadership and Organisational Culture (TLSxOC) on Employee Creativity and Innovation in the Iraq Oil and Gas Service Sector.

Criterion Variables	Predictor Variables	F	R	R ²	Adj-R ²	ΔR ²
Employee Creativity	Transformational Leadership	5.46*	.20**	.04*	.03	.04*
Employee Creativity	Organisational Culture	2.64*	.11**	.03*	.02	.03*
Employee Creativity	TLSxOC	3.9*	.23**	.04*	.03	.02*
Employee Innovation	Transformational Leadership	13.60**	.30***	.10*	.09	.10**
Employee Innovation	Organisational Culture	8.29**	.23**	.06*	.05	.06*
Employee Innovation	TLSxOC	3.17*	.33***	.14*	.11	.04*

*** $P < .001$, ** $p < .01$, * $p < .05$, $N = 414$

Field Survey, 2015

5. Discussion and Conclusion

This study set out to investigate the predictive effects of transformational leadership and organizational culture on employee creativity and innovation in the oil and gas service sector of the Iraq economy. The findings of this study make a contribution to understanding the effect linkages among these constructs. First, results suggest that transformational leadership has predictive effects on both the employee creativity and innovation. This finding is consistent with literature that transformational leaders provide followers with challenging new ideas and encourage them to break away from the old ways of thinking (Gong, Huang, & Farh, 2009; Obiwuru, Okwu, Akpa, & Nwankwere, 2011). Elenkov and Manev (2005) and Obiwuru *et al.* (2011) have also shown that transformational leaders motivate followers to transcend from the ordinary to the sublime for the sake of the mission and vision of the organization. The finding of this study is valuable as it has provided additional support for the positive proposition and findings in favour of this leadership style. Conclusively, transformational leadership is an important ingredient in employee creativity and innovation. Transformational leadership enhances creativity as followers look up to their inspirational leadership for emotional appeal that is important in stimulating awareness and understanding of mutually desirable goals. The body language of such a leader is enough to spur a compelling vision of organizational change achievable through the untapped inner strengths of the employees. Transformational leaders stir employees to action such that the old order of doing things

and achieving the same result is questioned leading to the institution of new order that guarantee quicker problem-solving and novel ideas that produce massive results. Essentially, what the transformational leader does is to spur employees in questioning assumptions, reframing problems, and approaching old situations in new ways. All of these instigate in the employees the desire to effect innovative improvement in their work and in the organizational processes.

Findings for the predictive effect of organizational culture on employee creativity and employee innovation are also consistent with the direction of literature that organizational environment and culture play a significant role in creativity and innovation of employees and affect organizational learning and performance, and organization's capabilities for innovation (Škerlavaj, Song & Lee, 2010; Oparanma, 2010; Tseng, 2010; Cameron & Quinn, 2011; Yeşil & Ahmet, 2012; Chowdhury, 2013; Amiri, Qayoumi & Soltani, 2014; Iya, 2015). Organizational culture may therefore be seen as an element favourable to the development of innovative activity. An organisation's ability to produce consistent and beneficial innovations primarily derives from the organisation's culture. In the organization's culture lies the values, beliefs, and work systems that produce desirable organisational behaviours. In essence, as opine by Valencia, Valle, and Jiménez (2010), organisational culture that places great emphasis on entrepreneurial, innovative and creative workplace along new product and service development, growth, change, and experimentation are likely to create work environment where employees make and implement creative ideas. Thus, it can be concluded that one of the most influential factors of developing and facilitating innovativeness of employees in organization is an enabling work environment facilitated by the organizational culture.

Our finding for the interaction effect of transformational leadership and organizational culture on employee creativity and innovation support the wisdom and our proposition that creativity and innovation are associated with strong and visionary leadership and supportive cultures, *ceteris paribus* (e.g., Unsworth, Wall, & Carter, 2005) as reflected in hypothesis 3. Our hypothesis was informed by the consistent demonstration in the literature of the individual effects of the two concepts on creativity and innovation. It was expected therefore that the two will interact to impact on employee creativity and innovation. The implication of the finding is that leadership impacts on organisational culture to effect employee creativity and innovation. Damanpour and Schneider (2006) had asserted that a leader with vision, which is a major component of transformational leadership, creates a culture of change that facilitates the adoption of innovation. Past research has also suggested that transformational leadership has a capacity to influence culture change and to build a climate for innovation (Kavanagh & Ashkanasy, 2006; Strange & Mumford, 2005). According to Bass (1985), transformational leaders do work within the culture as it exists but are primarily concerned with changing organizational culture. Bass proposes that transformational leadership promotes a working environment characterised by the achievement of high goals, self-actualisation, and personal development. Similarly, Bass and Avolio

(1993) suggested that transformational leaders move their organizations in the direction of more transformational qualities in their cultures, namely, accomplishment, intellectual stimulation, and individual consideration, therefore, suggesting that transformational leadership has a direct effect on culture.

Finally, conclusions can be drawn from the study that there are significant individual and joint effects of transformational leadership and organizational culture on employee creativity and innovation. There is no gainsaying that vision is a key component of transformational leadership which in turn creates the enabling culture of creativity and innovation. After all, employee creativity is a direct precursor of employee innovation. Thus, it could be posited that the behaviours of leaders create organizational cultures which shape how employees respond to the need for innovation.

One limitation of this study is that firms used in the study are few and are all located in Lagos, where the cosmopolitan nature of the state with its heavy dynamisms for innovation and excellence may be a factor in facilitating innovativeness of the employees beyond what the leadership style and organisational culture investigated provide. This makes it difficult to conclude and generalise the findings to other oil and gas companies outside Lagos. Further studies may involve more oil and gas companies spanning Lagos and beyond.

6. Recommendations

The practical implication of this study for organisations in the oil and gas service industry in Iraq is that though transformational leadership and organizational culture have individual facilitating effects on employee creativity and innovation, both factors can be used jointly to further enhance employee creativity and innovation. Promoting employee creativity and innovation in the oil and gas service industry of Iraq would therefore require that attention to be focused on organizational leadership with transformational qualities and the organizational culture with innovation facilitating values. To achieve this, the oil and gas service companies need to institute a transformational leadership succession plan which will involve investment in transformational leadership training of the supervisory and managerial staff to continue to oil the supply line of transformational leadership for the organisation.

Since employees are products of the organisation's culture and they have to act in accordance with it, to make employees unleash their creativity and inventiveness, facilitate innovative ventures throughout the organization, and continuously facilitate generation of new business ideas, identification and exploration of business opportunities

and provide business solutions, there is need to institute innovative organisational culture in the oil and gas service companies. This may require designing organizational culture that gives employees the freedom to decide how to carry out their job, allow them some degree of decision making authority, allow and encourage free-flow and sharing of information across the organisation, and the work culture where mistakes are allowed and celebrated and there is management support for employee innovation risk taking (Odetunde, 2012).

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