

Impact of Human Capital (Teamwork, Reward Systems, and Planning) on Organizational Innovation

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Abstract

In case of innovation, it is defined as anything new with respect to processes, methods, products and services. Innovation is important for the fulfilling of the needs of individuals in a specific market. These needs are addressed by means of improvement of the present technologies and methodologies. Increasing globalization along with rapidly changing technology and the continuous customer demand for better services and products further demonstrates the urgent need for innovation. The main objective of this study is to examine the impact of human capital in term of teamwork, reward system, and planning on the organizational innovation within the public sector in the United Arab Emirates. This study has adopted questionnaires to collect data. PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilizing the software SmartPLS 3.0. Results reveals that human capital have a significant impact on the organizational innovation. Variance explained by this study was 34%. The results of the current study have the potential to give further insights into innovation of organizations strategies.

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I. INTRODUCTION

In case of innovation, it is defined as anything new with respect to processes, methods, products and services (Huizingh, 2011). Innovation is important for the fulfilling of the needs of individuals in a specific market. These needs are addressed by means of improvement of the present technologies and methodologies. Increasing globalization along with rapidly changing technology and the continuous customer demand for better services and products further demonstrates the urgent need for innovation (Kuhn, Dubra, & Sumilo, 2012). The efficiency and effectiveness of an entity is greatly enhanced by means of innovation. In a society or a nation, it is associated with originality and breakthroughs. When an invention is successfully marketed it becomes an innovation. In a market, it not only has to be successful but must also gain money out of it (Kuhn et al., 2012).

Financial support is one of the most important components of innovation. Such financial support is required to convert an idea into action (Laursen & Salter, 2006). Various global indicators have created a clear image that help in understanding the position of country level according to a set of measures that are recognized internationally. (Waleed Al-Ali, Ameen, Issac, Nusari, & Ibrahim Alrajawi, 2018; Al-Obthani, Ameen, Nusari, & Alrajawy, 2018; AlShamsi, Ameen, Isaac, Al-Shibami, & Sayed Khalifa, 2018; Haddad, Ameen, & Mukred, 2018).

Possessing the necessary skills is important for the implementation of ideas. This is where innovation plays an important role.

While the need for creativity and innovation is undisputed, there are many challenges in their implementation. These challenges can be broadly classified into human resources, culture and environment

and finance and infrastructure. In order to implement any innovation, there needs to be an open-minded attitude (Tidd & Bessant, 2014). It cannot be forced upon the public. For any innovation to take shape, citizens need to be readied. A lot of patience and vigilance is required to make the most of the situation (Eberl & Puma, 2007; Waleed Al-Ali, Ameen, Isaac, Nusari, & Ibrahim Alrajawi, 2018; Ameen, Almari, & Isaac, 2019; Baharuden, Isaac, & Ameen, 2019; Sudhana, Ameen, Isaac, & Nusari, 2019). Furthermore, there needs to be curiosity as well as openness to change amongst the public. These cultural and environmental challenges need to be overcome by the government for successful implementation of innovation.

The literature present on human capital relates it to innovation. There are several researchers such (Hsu & Fang, 2009; Leitner, 2011; Wu, Lin, & Hsu, 2007; Youndt, Subramaniam, & Snell, 2004) who have shown the connection between intellectual capital and innovation. It is clear that the UAE is trying to become a leading technology centre based on the innovation strategy of the 4th Industrial Revolution (W. Al-Ali, Ameen, Isaac, Khalifa, & Hamoud, 2019; Alkhateri, Asma S; Abuelhassan, Abuelhassan E; Khalifa, Gamal S A; Nusari, Mohammed; Ameen, 2018; Ameen, Almari, & Isaac, 2019).

The vast amount of research that is present on this relationship makes it very stale as no further research is required, however there is another relationship that needs to be explored and that relationship is between human capital and innovation. The creativity and innovation are necessary for sustainability; however, the company needs to gain knowledge of its surroundings. The relationship between human capital and innovation can help the organization to implement innovation in workplace without any consequences. The very idea of innovation is novelty and originality and therefore the organization needs to venture into new waters which may be untested, although it is necessary to do so in order to gain a competitive edge.

II. LITERATURE REVIEW

A. Human Capital (HC)

Human capital term is the shorthand name given by the economists and social scientists to the knowledge, skills and Attitude of the workforce of the organizations, or the population of a country, which enables them to innovate and create value (Baron, 2011; Blair, 2011). It was defined by many social scientists and economists and refers to the individuals' knowledge, skills and attitude of the workforce, representing the critical resources to the organizations (Barney, 1991; OECD, 2004; S. Becker, 1993; Schultz, 1971) There has been a sharing of many

concepts by studies on innovation and human capital. Human capital as described by the scholars is a set of knowledge, skill set as well as abilities that are present in an individual and can be used for creating the value (Munyon, Summers, Thompson, & Ferris, 2013; Ployhart & Moliterno, 2011; Subramony, 2009).. In most contemporary organizations, adopting technology is not only uses ICT to fill up some forms and records but rather it is also a tool that performs the process of identification, accumulation, analysis, measurement, preparation, interpretation and communication of the information used by management to plan (Ameen & Ahmad, 2011, 2013b, 2014; Ameen et al., 2019). It is used in evaluating and controlling within an organization and to assure appropriate use and accountability for their resources (Ameen & Ahmad, 2011, 2012, 2013a).

Perdomo, Benito, & Galende (2009) have emphasized teamwork to be in association with human resource management TQM practices that can promote innovation performance. The study suggests that enterprises should focus on problem-solving techniques especially in work teams, as well as design some incentives for the teams that are formed; incorporate practices such as the quality circle or the creation of virtual communities; making teamwork a necessity for the criteria required for being hired as well as have framework designed where delegation of work is based on the level of teamwork. It is also suggested that cross-functional teams can be important for making important creativity and innovation procedures (Kanter, 1984; Lau & Ngo, 2004, Aldholay, Abdullah, Ramayah, Isaac, & Mutahar, 2018; Isaac, Abdullah, Ramayah, & Mutahar, 2017; Isaac, Aldholay, Abdullah, & Ramayah, 2019; Isaac, Abdullah, Ramayah, & Mutahar, 2018). Team development is important for a culture of innovation at the workplace (Lau & Ngo, 2004). Where the challenge lies in, is creating a team out of different individuals, according to Isaksen & Tidd (2006).

Moreover, a reward system in place goes beyond the traditional compensation systems that are usually employed. In order to improve innovation methods, it is important risk-taking be an important factor that stimulates knowledge exchange as well as sharing of information among the team, as mentioned by Pérez López, Manuel Montes Peón, & José Vazquez Ordás (2006). Rewards can be both financial and non-financial such as freedom as well as autonomy (Gupta & Singhal, 1993). Rewards and remuneration have also been proven to offer creative freedom, financial rewards, promotions as well as recognition (Gupta & Singhal, 1993). Apart from individual rewards, team-based rewards are also important as it provides a mutual benefit (Pérez López et al., 2006). The management needs to strike a fine balance between individual and group rewards. Scholars suggest that "workers' performance is substantially better under incentive pay plans that are coupled with supporting

innovative work practices” (Shaw, Ichniowski, & Prennushi, 1997).

Furthermore, Practices that boost the employee productivity are strongly encouraged in enterprises. Practices that include mentoring and coaching as well as career management (Bornay- Barrachina, la Rosa- Navarro, López- Cabrales, & Valle- Cabrera, 2012) are a few that can be implemented. It is also suggested that various avenues be open for the employees towards a career path that provide different job opportunities that lie outside of the initial job description (Kang, Morris, & Snell, 2007). It is the practices that employ career-based incentives, provide a better mode for the contribution of innovation and knowledge management (Mumford, 2000). In addition, “there is clear evidence that training is positively associated with job satisfaction” (Jones, Jones, Latreille, & Sloane, 2009). Innovation also correlates to the training acquired on the job (Zeytinoglu & Cooke, 2009). The sole training, however, is not as effective as group training that can also lead towards more effective innovation goals.

To surmise, increasing the capacity for innovation and creativity for the employees requires a strong commitment in order to take on the bundle of practices (Collins & Smith, 2006) that can facilitate employee cooperation as well as involvement (Cabrera, Collins, & Salgado, 2006). It also puts into priority the activity of valuing and supporting the employees (Kanter, 1984), that leads to a more individually capable entrepreneurial and innovative culture (Lau & Ngo, 2004). A hypothesis is therefore suggested:

H1: Human capital has a positive effect on organizational innovation.

B. Organizational Innovation (OI)

Crossan & Apaydin (2010) defined innovation as the product of a deliberate and successful realization of a new idea that provides advantages to the firm. Moreover, it has A procedure from innovation as a result and recognize three categorizations: process vs. product, radical vs. incremental, and technical vs. managerial

Numerous scholars and practitioners from varied fields have been showing increased interest in the innovation in the public sector (Borins, 2014; Brown & Osborne, 2013; Damanpour, Walker, & Avellaneda, 2009; Hartley, Sørensen, & Torfing, 2013; Osborne & Brown, 2011; Walker, 2014). There is growing endorsement in the belief that innovation can play a significant contributing role in improving the value of public services alongside also enhancing the problem-solving prowess of governmental outlets to tackle societal obstacles (Damanpour et al., 2009; Walker, Damanpour, & A. Devece, 2010). In many scenarios, public sector innovation has been lauded for spearheading reform movements like New Public Management (Hood, 1991; Llewellyn, 2009; Pollitt &

Bouckaert, 2011), e-governance (Bekkers & Homburg, 2005), the makeover-shift from government towards governance (Rhodes, 1996), and, presently, talks pertaining to the (minimizing) participation of government in a ‘Big Society’ (Lowndes & Pratchett, 2012) .

There are also a lot of factors which prove to be a hindrance to public sector innovations. Chief among them is the lack of adequate financial motivation and the other is the lack of genuine competitors. Probably the most important of the lot is the lack and deficiency of adequate resources. This includes not just financial investment but also the lack in proficient and skilful workers and human resources. Innovation requires adequate personnel to being about the necessary changes. There is also a lack of the opportunity to make use of supporting services (Bloch, 2011).

III. RESEARCH METHOD

A. Overview of the Proposed Conceptual Framework

According to the stimulus capital performance theory developed by Prajogo & Ahmed (2006), human capital and technological capital are what stimulates and develops the innovation capacity. This essentially highlights the importance of the learning process as being part of innovation (Lichtenthaler, 2013). In figure 1, the conceptual framework is depicting the relations suggested by this study based on the literature review.

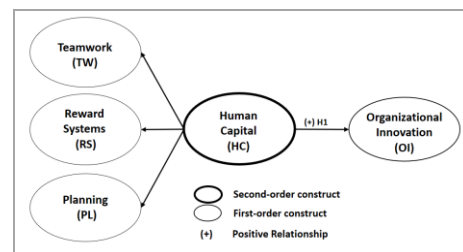


Fig. 1. The conceptual framework

B. Development of Instrument and Data collection

This study has adopted questionnaires to collect data. It was divided into two sections, the first measuring six core constructs using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (please refer to Appendix A for the instruments). Variables were measured using a Likert Scale which recommended in the previous studies (Isaac, Aldholay, Abdullah, & Ramayah, 2019; Isaac, Abdullah, Ramayah, Mutahar, & Alrajawy, 2018; Isaac, Abdullah, Ramayah, & Mutahar, 2018). The second covered the demographic profile of respondents, measured using a nominal or ordinal scale. PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilizing the software SmartPLS 3.0.

IV. DATA ANALYSIS AND RESULTS

PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilizing the software SmartPLS 3.0 (Ringle, Wende, & Becker, 2015). Analyzing Data through the second-generation multivariate data analysis technique which is SEM offers a simultaneous analysis which leads to more accurate estimates (Osama Isaac, Abdullah, Ramayah, Mutahar, &

Alrajawy, 2018; Osama Isaac, Abdullah, Ramayah, & Mutahar, 2018).

A. Measurement Model Assessment

The individual Cronbach's alpha, the composite reliability (CR), The average variance extracted (AVE), and the factor loadings exceeded the suggested value (Kline, 2010; Hair, Black, Babin, & Anderson, 2010) as illustrated in Table 1.

Table 1: Measurement model assessment

Constructs	Item	Loading (> 0.7)	M	SD	α (> 0.7)	CR (> 0.7)	AVE (> 0.5)
Teamwork (TW)	TW1	0.876	3.76 3	0.93 3	0.93 6	0.797	0.936
	TW2	0.904					
	TW3	0.904					
	TW4	0.865					
	TW5	0.914					
Reward Systems (RS)	RS1	0.929	4.03 2	0.92 5	0.94 7	0.862	0.947
	RS2	0.926					
	RS3	0.922					
	RS4	0.937					
	RS5	Deleted					
Planning (PL)	PL1	0.929	3.84 1	0.99 0	0.95 3	0.877	0.953
	PL2	0.932					
	PL3	0.952					
	PL4	Deleted					
	PL5	0.933					
Organizational Innovation (OI)	OI1	0.830	3.57 6	0.89 0	0.88 8	0.688	0.888
	OI2	0.855					
	OI3	0.860					
	OI4	0.860					
	OI5	0.736					
Constructs	Item	Loading (> 0.7)	M	SD	α (> 0.7)	CR (> 0.7)	AVE (> 0.5)
Pay Satisfaction (JSP)	JSP1	0.925	3.914	0.965	0.92 4	0.946	0.81 6
	JSP2	0.902					
	JSP3	0.914					
	JSP4	0.871					
Supervisor satisfaction (JSS)	JSS1	0.922	3.985	0.938	0.94 6	0.961	0.86 0
	JSS2	0.932					
	JSS3	0.919					
	JSS4	0.937					
Co-worker satisfaction (JSC)	JSC1	0.931	3.780	0.975	0.95 1	0.964	0.87 1
	JSC2	0.931					
	JSC3	0.949					
	JSC4	0.922					
Promotion satisfaction (JSM)	JSM1	0.891	3.703	0.970	0.91 2	0.938	0.79 2
	JSM2	0.823					
	JSM3	0.921					
	JSM4	0.923					
Job Performance (JP)	JP1	0.872	3.731	1.046	0.96 8	0.973	0.81 6
	JP2	0.908					
	JP3	0.911					
	JP4	0.923					

JP5	0.911
JP6	0.917
JP7	0.903
JP8	0.881

Note: M=Mean; SD=Standard Deviation, α = Cronbach’s alpha; CR = Composite Reliability, AVE = Average Variance Extracted.

Key: TW: Teamwork, RS: Reward Systems, PL: Planning, OI: Organizational Innovation.

The degree to which the articles distinguish among concepts or measure different constructs is demonstrated by discriminant validity. Fornell-Larcker was employed to analyse the measurement model’s discriminant validity. Table 2 shows the outcomes for discriminant validity by employing the Fornell-Larcker condition. It was discovered that the AVEs’ square root on the diagonals (displayed in bold) is bigger than the correlations among constructs (corresponding row as well as column values),

suggesting a strong association between the concepts and their respective markers in comparison to the other concepts in the model (Fornell & Larcker, 1981; Chin, 1998). According to Hair et al. (2017), this indicates good discriminant validity. Furthermore, exogenous constructs have a correlation of less than 0.85 (Awang, 2014). Therefore, all constructs had their discriminant validity fulfilled satisfactorily.

Table 2: Fornell-Larcker criterion

	<i>OI</i>	<i>PL</i>	<i>RS</i>	<i>TW</i>
<i>OI</i>	0.830			
<i>PL</i>	0.570	0.937		
<i>RS</i>	0.520	0.84	0.928	
<i>TW</i>	0.517	0.739	0.715	0.893

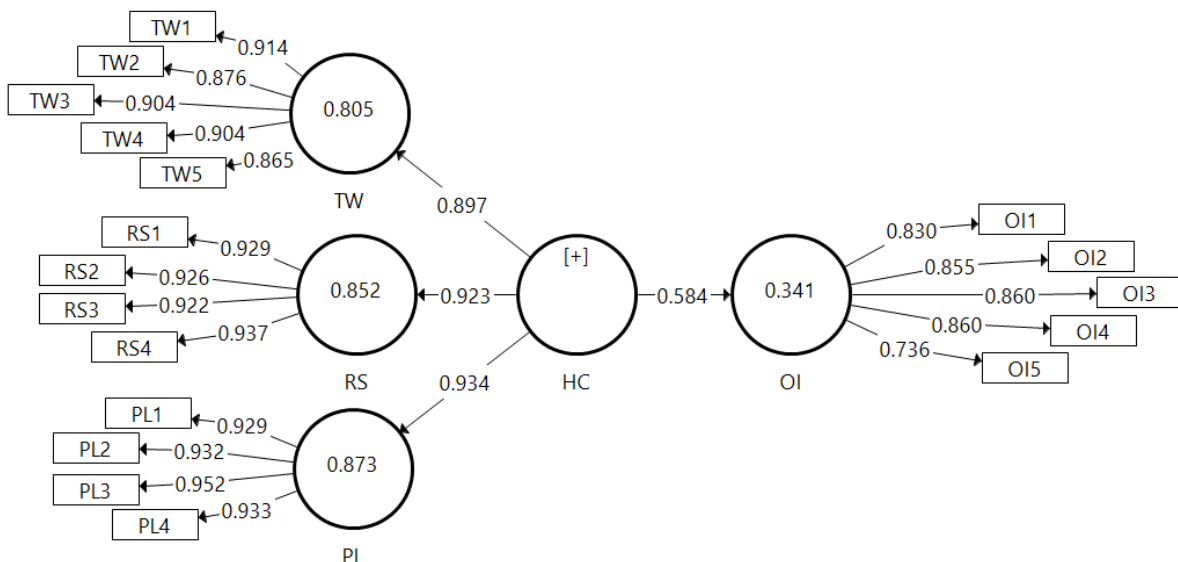
Note: Diagonals represent the square root of the average variance extracted while the other entries represent the correlations.

Key: TW: Teamwork, RS: Reward Systems, PL: Planning, OI: Organizational Innovation.

B. Structural Model Assessment

The structural model can be tested by computing beta (β), R^2 , and the corresponding t-values via a

bootstrapping procedure with a resample of 5,000 (Hair, Hult, Ringle, & Sarstedt, 2017).



Key: Key: OI: HC: Human Capital, TW: Teamwork, RS: Reward Systems, PL: Planning, OI: Organizational Innovation

Fig 2. PLS algorithm results

Figure 2 and Table 3 depict the structural model assessment, showing the results of the hypothesis tests. Human capital positively influences Organizational innovation. Hence, H1 is accepted with ($\beta = 0.584$, $t = 14.896$, $p < 0.001$). Human capital

explains thirty-four percent of the variance in organizational innovation. The values of R^2 have an acceptable level of explanatory power, indicating a substantial model (Cohen, 1988; Chin, 1998).

Table 3: Result of Direct Effect Hypotheses

Hypothesis	Relationship	Std Beta	Std Error	t-value	p-value	Decision	R ²
H1	HC→OI	0.584	0.039	14.896	0.000	Supported	0.34

Key: HC: Human Capital, OI: Organizational Innovation.

V. DISCUSSION

The main objective of the current study is to examine the impact of human capital in term of (teamwork, reward system, and planning) on the organizational innovation within the public sector in the United Arab Emirates. One hypothesis was proposed to be examined.

H1 assumes that there is positive impact of human capital on the organizational innovation. Results revealed through the SEM analysis that human capital has a significant direct positive impact on the organizational innovation with ($\beta = 0.584$, $t = 14.896$, $p < 0.001$). Thus, H1 is achieved. The literature review undertaken by the researcher indicates that training of employees towards increasing their skill set and intellect is nothing but management of human capital. When the human capital is presented with conducive environment and adequate resources, it leads to better innovation attempts. Concerning the management of employees, human capital development revolves around developing a nurturing environment for employees to be motivated to be creative and innovative. It is interlinked with the culture of the organization that promotes the development of human capital to achieve innovative performance (Prajogo & Ahmed, 2006). Human capital that is innovation-oriented leads to empowerment of employees in working towards the organizational innovation and creativity. The findings of the research thus indicated that there is a positive effect of human capital on innovation execution.

VI. IMPLICATIONS

This is one of the first researches to investigate the direct relationships between the actors of human capital (teamwork, reward system, and planning) and organizational innovations. Therefore, it contributes to the body of existing literature as follows.

Earlier studies have tested these relationships of human capital to collect knowledge about employees' skills, knowledge, and attitude. In order to enrich this area, the research is considered a natural extension of the previous studies of human capital as it contributes to the theory through examining the components of human capital in

term of teamwork, reward system, and planning. It has further tested these interactions in a knowledge-based context which was the public sector. The research results have demonstrated that these positive cooperative interactions, these actors explained 34% of the variety in organizational innovation; could create a suitable atmosphere to achieving an organization innovation.

Investigating the interactions between innovation types made interesting contributions to innovation research literature. With the exception of Gunday, Ulusoy, Kilic, & Alpkan (2011) which examined these types in the Turkish manufacturing industry, and Elsetouhi (2014) who tested these types in the service sector in Egypt, there was no study tested the relationships between administrative, process and product innovation in the public sector. Hence, this study benefits innovation researchers through providing an inclusive understanding of these relationships in the public sector in the UAE.

VII. CONCLUSION

It has been observed that innovation in governance leads to many positive results. Firstly, it helps in better utilization of resources and capacities and promotes a more open culture in the government which leads to good governance. Secondly, it creates a better image of the government which builds trust amongst its citizens. Another major advantage of innovation is that it has a domino effect wherein a successful innovation in one sector opens the doors for innovation in other sectors. One successful innovation leads to a series of innovations which leads to a favourable environment. For a government to deal effectively with mounting national as well as international challenges, introduction of innovative ideas and practices is imperative. The researcher has reviewed the various factors which have an impact on the innovation execution in the UAE public sector organizations. Upon reviewing the literature, the main factor that was identified by the researcher include Human Capital. The research findings also supported the fact that these factors have a major impact on the innovation execution in any organization. The literature review carried out by the researcher indicates that prior researches have tried to establish the factors which influence any organizations' innovation and creativity.

Many theories have also been developed to study what factors have a profound effect. Furthermore, the literature reviews also helped to identify the barriers and challenges to innovation in an organization. This article has shed some light on the organization innovation in the public

sector in the UAE and the importance of human capital in that regard and proved that Human capital plays a role helping the organizations to improve their innovation and compete to stay alive.

APPENDIX

APPENDIX A

Instrument for Job Satisfaction

Variable	Measure	Source
Teamwork (TW)	TW1: Employees in our organization work in teams. TW2 Every employee in my team have clear accountability and authority TW3: All members in teamwork to achieve a common goal while fulfilling individual goals allocated. TW4: There is effective interaction between employees in a team during shared tasks. TW5: Every team in our organization has a team leader who coordinates tasks and takes responsibility for the team action.	(Hennessey & Amabile, 1998; Kanter, 1984; Perdomo et al., 2009)
Reward Systems (RS)	RS1: Our organization has programs to reward individual creativity. RS2: Our organization recognizes a unique contribution and ideas. RS3: Our organization take a reward system as a priority RS4: My organization has laid down policies for the reward for ideas as well as performance. RS5: My organization rewards for an idea at an individual level.	(Hennessey & Amabile, 1998; Pérez López et al., 2006)
Planning (PL)	PL1: Our organization recruits creative people with an open mindset. PL2: Our organization promotes cross-training so that employees can fill in different roles when needed. PL3: Our organization offers the best remuneration to attract highly skilled and talented people. PL4: All employees in my organization have a clear outlook on our products and services. PL5: The vision, mission, and objectives are integrated and consistent.	(Hennessey & Amabile, 1998; Mumford, 2000)
Organizational Innovation (OI)	OI1: Our organization always try applying a new idea/technology at our organization. OI2: In our organization, new technology is adapted for improving the work processes. OI3: Our organization is quick to respond to the changing needs of its customer. OI4: In our organization, employees are hired on their creativity. OI5: In our organization, we believe in the open communication environment.	(Hennessey & Amabile, 1998; Isaksen & Tidd, 2006)

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