



Association between Transformational Leadership and Smart Government among Employees in UAE Public Organizations

Fahad Al-Obthani and Ali Ameen
Lincoln University College, Malaysia

(Corresponding author: Fahad Al-Obthani)

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ABSTRACT: Now-a-days, the governmental institutions of UAE are devising new ways with an intention to provide better service to its citizens, which are easily accessible, accurate, timely, high in quality, and full of information with the use of smart devices like high-speed wireless Internet connections. The aim of the present study is to evaluate the impact of the transformational leadership upon the idea of smart government among the public sector employees in UAE. Survey questionnaire was found as the most suitable tool as smart government are directly operated through ICT and artificial platforms where the internet tool is necessary for both service provider and users. Random sampling method was adopted to select the employees who use smart government services. Only 260 respondents were achieved a response rate of 60.0%, which is considered as a healthier survey response rate. PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilising the software SmartPLS 3.0. The study findings concluded that the transformational leadership based on varied parameters like idealized influence, inspirational motivation, intellectual stimulation, individualized consideration did not exhibit any form of significant influence on the actual implementation of the smart government system. The results of the current study have the potential to give further insights into smart government actual usage and the role of transformational leadership.

Keywords: Transformational Leadership; Smart Government; UAE.

I. INTRODUCTION

The present smart computerized era, the governmental and other institutions across the universe are devising new ways with an intention to provide better service to its citizens, which are easily accessible, accurate, timely, high in quality, and full of information with the use of smart devices like high-speed wireless Internet connections[1]. The smart governance has been described as the subset of a smart city domain, wherein an open dialogue is ensued between the citizens and the city officials, through the Information and Communication Technology (ICT) platform. Furthermore, the smart governance consists of all "aspects of political participation and services for the citizens along with the administrations' functioning" [2]. Based on these definitions, in this study, the researchers have defined the smart government as a government which promotes the implementation of smart city initiatives which can help all the people and the public administration/ management.

For determining the important factors which affect the performance of a smart application[3,4] specially government, the researchers investigated many research articles. The literature review showed that many studies investigated the positive and negative factors which could affect the smart governments and e-government [3-11]. Thus, the following factors were seen to be critical factors which affected the performance of the smart government in Dubai [9,12-16].

Integration of the ICT with many developmental projects can alter the city's urban landscape and offer several opportunities, thereby improving the functioning and management of the city [17]. Elkadi [7] stated that the Information System (IS) factors directly affect the

success or the failure of any e-government. Researchers have observed that the positive factors causing the success of an information system include the quality of the system, services and information [6]. Governments, organizations, and Individuals should pay the greatest attention to the planning and implementation of information technology in all its aspects of business, especially in the age of digitalization. In the age of digitalization or Industry 4.0 / Fourth industrial revolution, the current automation trends and data exchange occurs mostly in the manufacturing related technologies [18,19].

Also, despite the fact that many smart government initiatives have been implemented in different governmental departments, these initiatives would fail if there was a weak relationship between the beneficiaries and the governmental departments. Al-Shafi & Weerakkody [3] observed that a weak trust-based relationship between the public agencies and people could lead to the failure of many smart government activities in Qatar, which was in the neighbourhood of UAE. It is clear that the UAE is trying to become a leading technology centre based on the innovation strategy of the 4th Industrial Revolution [19, 20]. Thus, it could be noted that the strong trust-based relationship between the government and the people, governmental departments and public agencies could positively affect the performance of a smart government. Varied indicators on global basis will aid in apprehension of the UAE stature in formulating measures that are internationally acknowledged [21,22].

In this study, the researchers have tried to evaluate the impact of the transformational leadership on the actual benefits of the smart government in the UAE public sectors.

II. LITERATURE REVIEW

A. Transformational Leadership (TL)

In previous studies, varied research works have highlighted about the importance of TL in the success of an information system or technological adaption like the smart government. Bass [23] stated that the TL occurred when the leaders improved the interests of the employees by creating awareness and acceptance of a specific purpose, and also motivating them to set high goals for fulfilling their needs [24]. Thus, TL was defined using 4 basic elements, i.e., individual consideration, charisma, inspirational motivation and intellectual stimulation [24, 25]. Since TL was generally used at the organisational level [24, 26], it was seen to be a technique which helped in developing a clear vision, increasing awareness regarding the problems and motivating followers to develop novel methods for improving their existing performance [27].

Additionally, TL could be described as the concept wherein the leaders used charisma, intellectual stimulation, inspiration, and individualised consideration for mobilising their followers so that they developed beyond their immediate goals to a maturity level which helped in self-actualisation, achievement, and well-being of the organisation, other people, even the society [28]. In most contemporary organizations, adopting technology does not only denote to implementing ICT, but also using it an instrument to identify, accumulate, analyze, measure, prepare, interpret, and communicate the data that is used to manage and execute the plan [29-31]. It is further utilized to assess and control an institution along with assuring proper usage and accountability of their resources [29, 32, 33].

Use of a smart government in any public sector can significantly increase the confidence level of the employees and the people as it offered better facilities, support and training to the employees, which could improve the usage of this smart government.

Many researchers have determined the effect of the TL in various IS fields, wherein it was seen to be positively related to the IS success based on user satisfaction [34] and the adaption of IT services [35-37]. In their study, Ghazali *et al.* [38] stated that for improving the generalisation of this parameter, additional studies have to investigate the correlation between the TL and the IS success in other countries, cultures and the strategic information systems [39]. Hofstede & Minkov [40] noted that in Arabic society, the power distance was high, i.e., the Arabic society was centralised. Hence, leadership was seen to be an important parameter which could inspire and manage the UAE employees. Thus, the researchers have proposed the following hypotheses in this study:

H1: Idealised influence positively affected the actual usage of a smart government.

H2: Inspirational motivation positively affected the actual usage of a smart government.

H3: Intellectual stimulation positively affected the actual usage of a smart government.

H4: Individualised consideration positively affected the actual usage of a smart government.

B. Actual Usage of Smart Government (USE)

Actual usage can be described as the manner and the degree to which the users use the capabilities of the information system. This includes the frequency, amount, nature, appropriateness, extent and the purpose of this use. Kim *et al.* [41] stated that this parameter reflected the frequency of the usage of any

technology and the usage time. Actual use was defined as consumption of any IS or its output with regards to its self-reported or actual usage [42]. Here, the researchers described this factor as the degree to which the employees used the capabilities of any smart government.

Many researchers regarded actual usage as an important component of the IS field. Several studies used the actual usage in various contexts and applications since this was seen to be the final objective or aim of any technology. Abrego-Almazán *et al.* [43] studied the IS in Mexico and noted that the usage factor showed a positive correlation with many organisational results. Kim *et al.* [44] noted that usage could significantly affect personal performance. The actual usage was seen to significantly affect user satisfaction and performance [45]. Stefanovic *et al.* [46] investigated the e-government system in Serbia and noted that usage could influence the Net benefits.

III. RESEARCH METHODOLOGY

A. Conceptual Framework

The model proposed in the current study describes the hypothesised relationships between the proposed extensions of the UTAUT. Figure 1 presents the research conceptual framework, which was based on the UTAUT that was a very popular theory used in any IS [47]. Furthermore, TL was used in many other models [38,39].

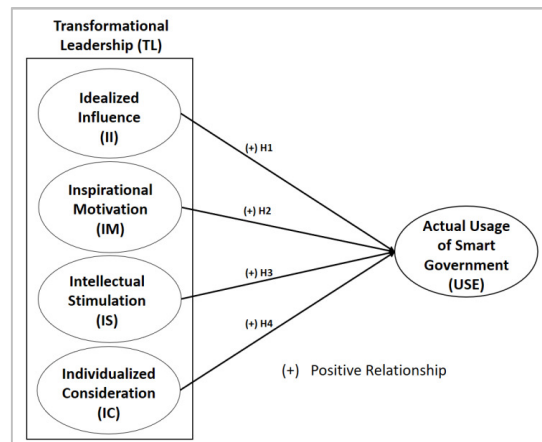


Fig. 1. The proposed conceptual framework.

B. Formulation of the research Instrument and Data accumulation

In this study, the researchers used a survey questionnaire since the smart government operates through various internet-based artificial platforms and ICT. A random sampling technique was used for selecting the employees that used smart government services. A sample size of 250 employees was selected. Similarly, 400 beneficiaries of the smart government initiatives were also randomly selected using the above-mentioned criteria. Out of the 400 people, 260 individuals responded. This showed a healthy response rate of 60.0%.

IV. ANALYTICAL STUDY OF THE DATA AND STUDY OUTCOMES

PLS SEM-VB was employed to evaluate the suggested research model by implementing SmartPLS 3.0 software [48]. Moreover, a different analytical technique was

implemented that constituted two phases, namely measurement model analysis and structural model analysis [49].

A. Detailed evaluation of the data

The mean and SD of the study variables are presented in Table 1. The measurement were in accordance with Likert's scale with significant variables Actual usage of smart government score the highest with mean 3.574 out of 5.0, with a standard deviation of 1.075.

B. Measurement Model Assessment

The measurement model was examined by implementing the reliability and validity features of the constructs (convergent and discriminant validities). The reliability of each core variable in the measurement model (construct reliability) was evaluated by using the individual Cronbach's alpha coefficients. The Cronbach's alpha coefficient values were recorded in between 0.896 to 0.939. The composite reliability (CR)

values were in between 0.935 to 0.959, which exceeded 0.7 (Table 1) [50].

The factor loadings aided in analysing the Indicator Reliability. When the related indicators are very similar, this is reflected in the construct and signified by the construct's high loadings [51-53]. As per , the exceeding of values beyond 0.70 suggests substantial factor loadings [54, 55]. Table 1 displays that all items in this research had factor loadings greater than the suggested value except for items like IS1 and IC3, which were eliminated from the scale due to low loadings.

AVE was assessed to analyse the Convergent Validity. It is reported that this validity shows a positive correlation with the alternate values of the same variables. The AVE values range within 0.828 and 0.888 that is more than 0.50 [55]. The convergent validity has been achieved by all the construct variables in this study (Table 1).

Table 1: Measurement model assessment.

Constructs	Item	Loading (> 0.7)	M	SD	α (> 0.7)	CR (> 0.7)	AVE (> 0.5)
Idealized Influence (II)	II1	0.933	3.355	1.044	0.938	0.956	0.844
	II2	0.922					
	II3	0.904					
	II4	0.915					
Inspirational Motivation (IM)	IM1	0.918	3.222	1.040	0.939	0.956	0.845
	IM2	0.919					
	IM3	0.926					
	IM4	0.914					
Intellectual Stimulation (IS)	IS1	Deleted	3.211	0.963	0.937	0.959	0.888
	IS2	0.946					
	IS3	0.945					
	IS4	0.935					
Individualized Consideration (IC)	IC1	0.955	3.442	1.001	0.932	0.956	0.880
	IC2	0.950					
	IC3	Deleted					
	IC4	0.908					
Actual Usage of Smart Government (USE)	USE1	0.938	3.574	1.075	0.896	0.935	0.828
	USE2	0.950					
	USE3	0.838					

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

Table 2: Fornell-Larcker criterion.

	IC	II	IM	IS	USE
IC	0.938				
II	0.653	0.919			
IM	0.661	0.661	0.919		
IS	0.667	0.656	0.652	0.942	
USE	0.507	0.507	0.548	0.510	0.910

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

The bold variables in the table denote the square root value of the AVE that is more than the corresponding values, indicating a strong correlation between the variables and their respective indicators (Table 2). The exogenous constructs showed a correlation value <0.85, and thus the better discriminatory validity is satisfied [56-58].

C. Structural Model Assessment

Beta (β), R², and the corresponding t-values were implemented through the bootstrapping mechanism of 5000 resample to evaluate the structural model.

The structural model in the current research supports all the four proposed hypotheses (Figure 2 and Table 3) for

the factors/constructs (i.e. II, IM, IS, IC, USE). Hence, H1, H2, H3 and H4 are accepted with ($\beta = 0.143, t = 2.101, p < 0.05$), ($\beta = 0.262, t = 3.911, p < 0.001$), ($\beta = 0.155, t = 2.174, p < 0.05$) and ($\beta = 0.137, t = 2.024, p < 0.05$) respectively. Thirty-six

percent of the variance in actual usage of smart government is explained by factors II, IM, IS, and IC. The values of R^2 have an acceptable level of explanatory power, indicating a substantial model [59].

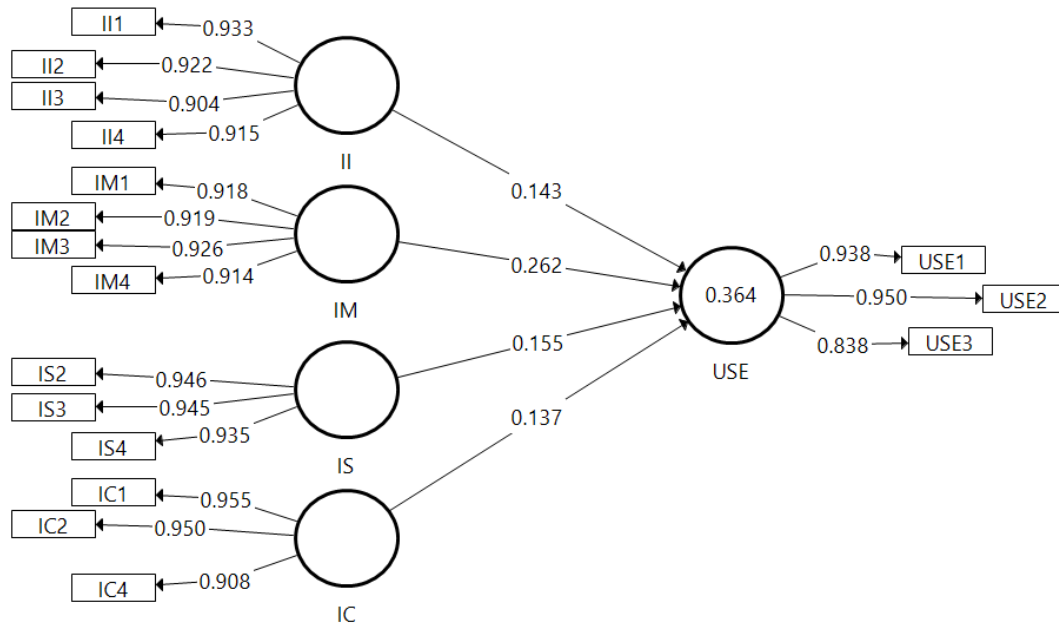


Fig. 2. PLS algorithm results.

V. DISCUSSION

In this study, the researchers aimed to investigate the effect of TL with regards to various aforementioned factors on the actual usage of the smart government activities. The results indicated that all these factors helped in determining the actual usage of the smart government amongst the various employees of the UAE public sector.

Firstly, Idealised Influence was seen to be a positive significant predictor of the usage of the smart government ($\beta = 0.143, t = 2.101, p < 0.05$), which supported the H1. This indicated that the leaders instil pride in the minds of the employees for being in connection with their team leads. Thus, the leaders not only improve the interests of the group, but they also instil a sense of respect amongst the employees, which encourages more employees to use the smart government initiatives.

Secondly, even Inspirational Motivation positively affected the usage of the smart government activities amongst the public sector employees in UAE ($\beta = 0.262, t = 3.311, p < 0.001$), thus, supporting the H2. This indicated that when the leaders were optimistic about the future, they enthusiastically stated what goals had to be accomplished, and were very confident about achieving these goals. Thus, more employees would use smart government initiatives.

Furthermore, Intellectual Stimulation positively affected the usage of the smart government ($\beta = 0.155, t = 2.174, p < 0.05$), which supported H3. This could be explained by the fact that leaders seek various perspectives while solving any problem and ask other people to share their viewpoints regarding the problem. This would help them complete all assignments rapidly and encourage the employees to use the smart government.

Lastly, Individualised Consideration showed a positive impact on the implementation of the smart government ideology ($\beta = 0.137, t = 2.024, p < 0.05$), which supported the H4. This was attributed to the fact that the leaders treated other people as individuals rather than only as group members. They also accepted the fact that every individual possessed different abilities, needs and aspirations. They also sought different perspectives when handling any organisational issue, thereby helping other individuals to develop their strengths and encourage people to use smart government initiatives. Also, TL positively affected the actual usage of the smart government amongst the public sector employees in the UAE. This indicated that many employees used smart government activities when the management stimulated their intelligence and motivated them by assessing their efforts if they used smart government activities. Similar results regarding TL were noted by earlier studies [60].

VI. IMPLICATIONS, LIMITATIONS AND FUTURE DIRECTIONS

Based on an academic perspective, the findings of the current research work can be used as foundation for the future experiments focusing on the role played by the TL and its various aforementioned factors on the actual usage of a smart government amongst the UAE public sector employees.

Investigation of all these parameters would help the senior management and the policymakers identify better strategies which could help the usage of the smart government in the public sector. The significance of these important findings could benefit not only the employees but also the UAE public sector, which, in turn, could benefit the country. Many practical implications were determined from this study, like encouraging the employees to use the smart

government activities in their daily activities, which would lead to the development of their professional and personal lives.

However, some limitations in these types of studies highlighted that biased results were deduced when the researchers used the self-reported measures regarding usage, because they may lead to the bring variations in the measurement values of the actual usage [61]. Furthermore, the researchers measured the general usage of the smart government and did not focus on any service. The various forms of the smart government could display different adoption and usage activities. Furthermore, the present research was not focused on the impact of the demographic parameters. A few of the demographic factors could display a vital explanatory power in the model [62].

In future, the researchers would target the individuals in the public sector. Hence, future researchers must carry out studies in the private sectors or compare the results

between the private and public sectors in the UAE.

VII. CONCLUSIONS

This study aimed to investigate the effect of the TL and all its parameters (i.e. II, IM, IS, IC, USE) on the actual use of the smart government. The model proposed in the study offered a better understanding of the effect of the TL on the use of smart government activities. The descriptive analysis results indicated a positive effect of the TL on USE. The researchers concluded that the public sector in UAE must pay a lot of attention to the TL characteristics of the management, which could help in the usage of the smart governmental systems. This study has presented perspectives of the practitioners and academicians, discussed the limitations and offered a few directions for future research.

APPENDIX

Appendix A
Instrument for variables

Variable	Measure	Source
Idealized Influence (II)	II1: Leaders instill pride in others for being associated with them. II2: Leaders go beyond self-interest for the good of the group. II3: Leaders act in ways that build others' respect for them. II4: Leaders talk about their most important values and beliefs.	[63]
Inspirational Motivation (IM)	IM1: Leaders talk optimistically about the future. IM2: Leaders talk enthusiastically about what needs to be accomplished. IM3: Leaders articulate a compelling vision of the future. IM4: Leaders express confidence that goals will be achieved.	[63]
Intellectual Stimulation (IS)	IS1: Leaders re-examine critical assumptions to question whether they are appropriate. IS2: Leaders seek differing perspectives when solving problems. IS3: Leaders get others to look at problems from many different angles. IS4: Leaders suggest new ways of looking at how to complete assignments.	[63]
Individualized Consideration (IC)	IC1: Leaders treat others as individuals rather than just as a member of a group. IC2: Leaders consider an individual as having different needs, abilities, and aspirations from others. IC3: Leaders seek differing point of view when dealing with organizational issues. IC4: Leaders help others to develop their strengths.	[63]
Actual Usage of Smart Government (USE)	USE1: I regularly use Smart Government. USE2: I prefer to do my job through the Smart Government. USE3: I promote the use of Smart Government to my colleagues.	[47]

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