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Mediation Model of Factors Affecting Continuous Use of M-government Services of Abu Dhabi Smart City

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Abstract: This paper presents a development of mediation model using SEM-AMOS software. The model hypothesized that the direct relationship is between the quality and public value constructs with continuous intention to use M-government services. While, the mediator constructs to the direct relationship are trust and satisfaction constructs. The data used to develop and testing this model was gathered through questionnaire survey from 231 valid responses from Abu Dhabi smart city residents using the police department M-services. The development of the model was conducted in two stages where at first stage it involved confirmatory factor analysis and the second stage involved path analysis. The analysis on the model found that quality construct has significant direct relationship with trust and user satisfaction constructs, but it does not have significant direct relationship with continuous to use construct. Similarly, the public value construct has significant direct relationship with trust and user satisfaction constructs, but it does not have significant direct relationship with continuous intention to use construct. Thus, both the user satisfaction and trust constructs have a full mediation effect with the direct relationship of public value and quality construct with continuous intention to use construct of M-government services. Thus, it can be concluded that the relationship of public value and quality constructs with continuous to use construct is fully mediated by both trust and satisfaction constructs in M-government services. The findings from this study assists the government for continuous usage of M-government services that contributes to the sustainability of smart city.

Keywords: M-government services, SEM mediation model

1. Introduction

Mobile technologies that facilitate the provision of M-government services are the key factor for the implementation of smart cities. In line with the prevalent use of mobile technologies among its users, M-government has emerged as an important initiative for implementing smart cities. M-government has been recognized to have the potential to contribute to sustainable development for citizens, governments and businesses. In relation to this, governments worldwide have invested huge capital on the adoption of M-government to improve internal efficiency and provide better and quality services to their citizens. According to Weerakkody et al. (2009), sustainable

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development can only be achieved when M-government services are consistently used. Despite the wide spread of mobile government services, the uptake is still low especially in developing countries (Sultan et al., 2016) and their users are heterogeneous and diverse (Wu et al., 2009). Hence, for governments to realize the potential of M-government, they must ensure that users continuously use M-government (Alshammari, Messom and Yen, 2021).

Although many governments have claimed that they adopt M-government, its contributions and effects on the government's efficiency are still questionable. Successful adoption of M-government is challenging as there are many challenges namely abroad digital gap, insufficient resources, and a shortage of expertise and competencies for architecture, deployment, usage, and management of M-government programmes (Heeks, 2003; Mutula, 2008; Shin, 2008; Nabafu and Maiga, 2012; Islam, Jasimuddin and Hassan, 2015; Twizeyimana, 2017). Failure of M-government causes a great deal of pain, including the waste of time and resources, a lack of goodwill among interested actors, and, last but not least, a rise in potential costs. Although there are variety of factors that affect the success implementation of M-government, investigating the factors that contribute to the continuous usage of M-government service may contribute to the success implementation of M-government. In this case, the poor quality of M-government services is one of the reasons that for the lack of continuous use of M-government. Therefore, the quality of M-government services could be enhanced to promote the continuous use of M-government service for smart cities.

Extensive research related to the adoption of e-government and M-government (Azam et al., 2013; Alryalat et al., 2013; Khalil and Nasrallah, 2014; Taiwo, 2014; Gupta, Singh and Bhaskar, 2016; Shahzad et al., 2019; Alshammari, Messom and Yen, 2021), have been framed within established theories, such as the Technology Acceptance Model (TAM) (Davis, 1989), Theory of Innovation Diffusion (Rogers, 1975), Unified Theory of Acceptance and Usage of Technology (UTAUT) (Venkatesh et al., 2003). This research tends to consider satisfaction and trust as the mediators that influence the use of M-government.

Thus far, there has been very limited research that consider these factors as the mediating factors that influence the relationship between quality system factors and public value on continuous to use M-government. Therefore, this is the gap that this research intends to address this relationship as the conceptual model of figure 1.

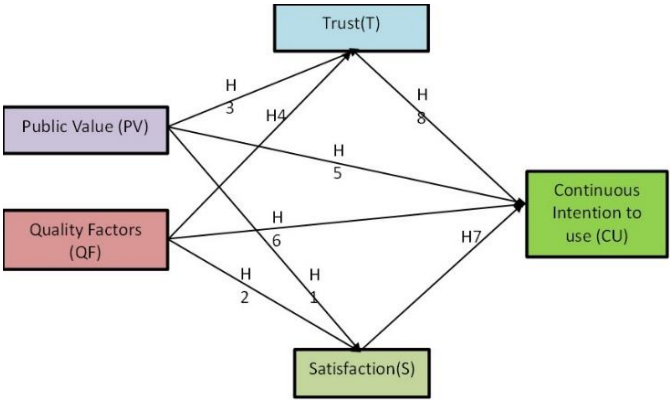


Fig. 1: Conceptual Model

Based on figure 1, the hypotheses that can be derived from the relationships are grouped as direct effect and indirect/mediation effects as table 1

Table 1 hypothesis of the model

Hypothesis	Direct effect
H_1	Public Value has significant relationship with User satisfaction
H_2	Quality of M-government has significant relationship with User satisfaction
H_3	Public Value has significant relationship with Trust
H_4	Quality of M-government has significant relationship with Trust
H_5	Public Value has significant relationship with Continuous Intention To Use
H_6	Quality of M-government has significant relationship with Continuous Intention to Use
H_7	User satisfaction has significant relationship with Continuous Intention to Use
H_8	Trust has significant relationship with Continuous Intention to Use
Hypothesis	**Indirect/mediation effect**
H_9	Satisfaction mediates the relationship between public value and continuous to use M-government.
H_{10}	Satisfaction mediates the relationship between quality factors and continuous to use M-government.
H_{11}	Trust mediates the relationship between public value and continuous to use M-government.
H_{12}	Trust mediates the relationship between quality factors and continuous to use M-government.

2. Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis is a more accurate form of factor analysis that looks at whether the measures of a construct match the researcher's perception of the construct's existence (Awang, 2014). According to Awang (2015) the CFA protocol replaced older approaches such as EFA for determining the construction's validity. The proposed effects of public value, quality on users' continuance intention to use M-government through mediating effect of trust and satisfaction in the UAE police department were based on the review of past literature on these topics, which then underwent analysis of empirical data that was collected through a survey questionnaire. Confirmatory Factor Analysis (CFA) is a true accident-avoidance technique aimed at improving the principles of e-government systems in the Abu Dhabi region of the UAE. It is intended to validate the results between public value, quality and users' continuance intention to use M-government through mediating effect of trust and satisfaction in the M-government that is provided by Abu Dhabi police. CFA is often used to assess the relationship between the measured factors and each hypothesized construct in order to quantitatively determine the accuracy of the component structure and provide additional proof of the current measurement's construct validity.

The use of SEM and CFA in this study follows the basic measures suggested by leading scholars Hooper et al. (2008); Hair et al. (2011); Awang (2015) which include (1) model specification, (2) model recognition, (3) parameter estimation, (4) goodness-of-fit calculation, and (5) model re-specification. In this research review phase, the preliminary step is to assess the feasibility of the calculation model before considering the structural model. As a result, both calculation and structural models were tested using Maximum Likelihood estimation (ML). The goodness-of-fit indices and degree of approval used to evaluate the fitness of construct and structural equation models are stated in Table 2.

Table 2: Goodness-of-fit index and level of acceptance

Name of category	Goodness-of-fit indices	Acceptance level	Comments	Literature support
Absolute fit	Chisq	P > 0.05	Sensitive to sample size greater than 200	Wheaton et al. (1977)
Absolute fit	RMSEA	RMSEA < 0.08	Range 0.05 to 1.00 is acceptable	Tanaka and Huba (1985
Absolute fit	GFI	GFI > 0.80	The value should be more than 0.8	Baumgartner and Homburg (1995); Doll, Xia and Torkzadeh (1998)
Incremental fit	AGFI	AGFI > 0.90	AGFI = 0.95 Is a good fit	Awang (2014)
Incremental fit	CFI	CFI > 0.90	CFI = 0.95 Is a good fit	Bentler (1990)
Parsimonious fit	Chisq/df	Chisq/df < 5.0	The value should be less than 5.0	Awang (2012)

In this study, re-specified models were checked before being used for further analysis, and Modification Indices (MI) were used as a reference for identifying specification errors during the model re-specification phase.

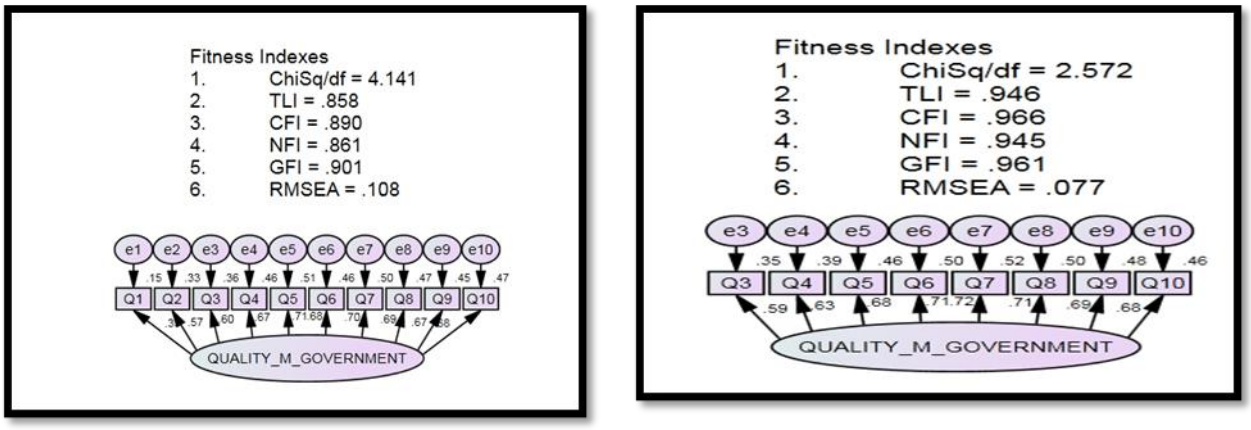
3. Measurement Model Analysis

As a result, the estimation model's confirmatory factor analysis model analysed and described the whole latent structures in the test evaluation context in the following pages. In addition, for and latent variable, initial measurement models, goodness indices, adjustment indices, and final measurement models were presented in order. The aim was for readers to grasp each step in assessing the goodness of each measurement model in the test assessment model.

3.1 Quality of M-government Construct

The quality of M-government calculation model is a graphical representation of the relationship between response objects and their underlying quality of M-government construct, followed by CFA analysis. To prevent the model recognition issue during the research period, Hair et al. (2011) and Awang (2015) advised that the minimum number of items used to calculate a latent construct should not be less than four (4). The AMOS implementation is then used for

the M-government calculation model's consistency build. The consistency of the M-government construct was assessed using factor loading, squared multiple correlations (R^2), and fitness indexes. As a result, Figure 1 shows the AMOS-calculated uniform estimation of factor loading and R^2 value score of the initial and final measurement model of quality M-government construct.



Initial Final

Fig. 2: Measurement model for quality of M-government

There were eight items (Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8,Q9 and Q10) selected in measuring technology collaboration level. The initial model showed a poor fit (CFI = .89, and RMSEA = .108). Due to the fact that the model is invalid and not meeting the cut off values, the strategy of deleting the low factor loading (< 0.5) was conducted and checking the highest modification index (MI). As a result, two factors with low factor loading were identified (Q1 and Q2) and deleted one by one as recommended by the modification index (MI). Then, the model was re-evaluated and the result shows that the model is fit.

3.2 Public Value Construct

Results of the Confirmatory Factor Analysis (CFA) for this model are shown in Figure 3. Factor loading for each item, squared multiple correlations (R2), and fitness indices for each item were all analysed as part of the public value measurement model.

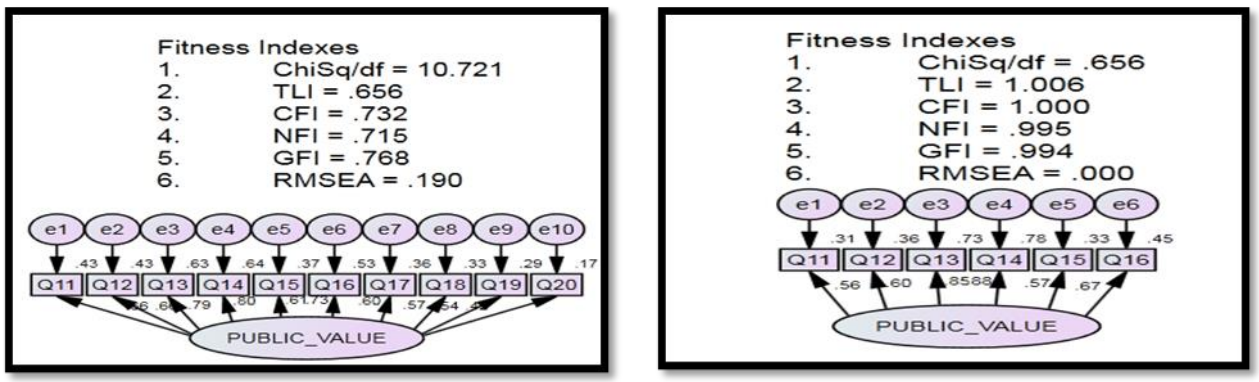


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Fig. 3: Measurement model for public value

As seen in Figure 3, the factor loading for all items is greater than 0.5, and Chisq/df is less than 3.0, indicating that the model meets all fitness requirements. The fitness indices were not achieved, and it was discovered that Q17 to Q20 have low factor loading, which would be removed in the next final calculation model. After removing these two questions the TLI and CFI improved to be 1.006 and 1.000 consequently, which shows that they are more than the minimum accepted model 0.97 as suggested by Hair et al. (2010).

3.3 Trust Construct

Figure 4 presented the result of Confirmatory Factor Analysis (CFA) for the trust measurement model. In the construct of the trust measurement model, factor loading for each item squared multiple correlations (R^2) and fitness indexes for each of the item observed were presented. The essence was to identify whether the level of acceptance for every index is achieved in the trust construct.

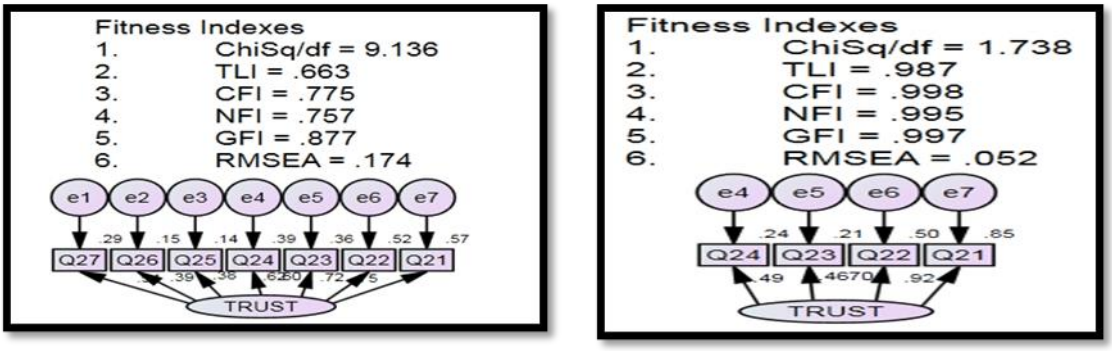

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Fig. Error! No text of specified style in document.**4: Measurement model for trust**

From the measurement model trust, all the factors' loadings appear good as none is below 0.5. However, the Chi/df appears to need modification as it was below the minimum acceptable value of 3. Finally, the trust construct's final measurement model had satisfied all the acceptable cut-off values as recommended in the goodness-of-fitness indexes (Awang, 2014; 2015). The fitness indices not achieved and noticed that Q25 to Q27 have low factor loading, which are deleted in the final measurement model. After removing these factors the TLI and CFI improved to be 0.987 and 0.998 consequently, which shows that they are more than the minimum accepted model 0.97 as suggested by Hair et al. (2010).

3.4 User Satisfaction Construct

In the same order of presentation, Figure 5 presented the CFA result for the user satisfaction measurement model. The factor loading for each item, squared multiple correlation (R^2) and fitness indexes were observed.

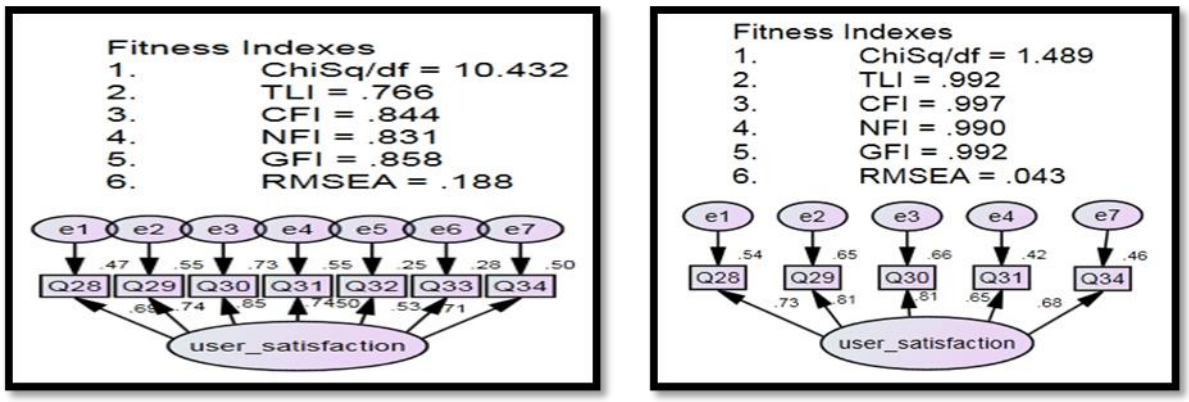

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Fig. 5: Measurement model for user satisfaction

Figure 5 showed that the fitness indices not achieved and noticed that Q32 to Q33 have low factor loading which will be deleted in the next final measurement model, The result showed that all items had a suitable factor loading. In summary, all user satisfaction items construct that satisfied the level of acceptance were used for the structural equation modelling in this research. After removing these two questions improved to be 0.992 and 0.997 consequently, which shows that they are more than the minimum accepted model 0.97 as suggested by Hair et al. (2010).

3.5 Continuous Intention to Use Construct

In the same order of presentation, Figure 4.9 presented the CFA result for the continuous intention to use the measurement model. The factor loading for each item squared multiple correlations (R^2) and fitness indexes were observed.

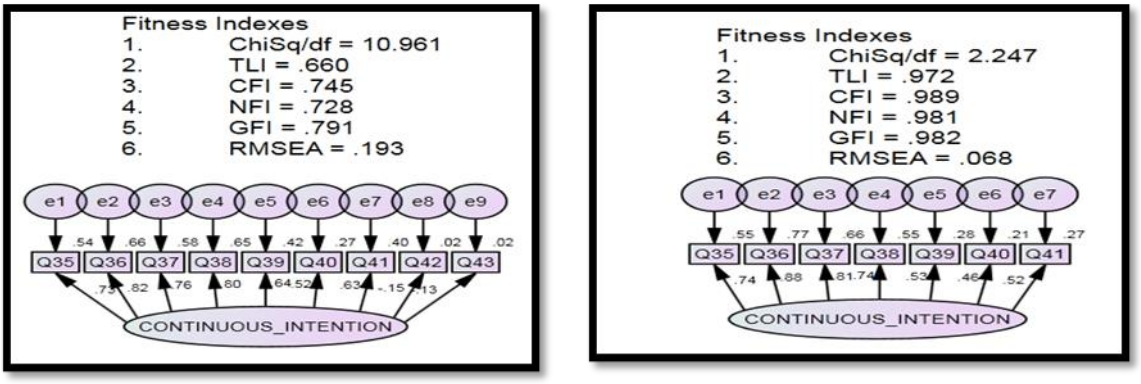

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Fig. Error! No text of specified style in document.**6: Measurement model for continuous intention to use**

Figure 6 showed that the fitness indices not achieved and noticed that Q42 to Q43 have low factor loading, which are deleted in the next final measurement model. In summary, all continuous intention to use items construct that satisfied the acceptance level was used for this research's structural equation modelling. After removing these two questions improved to be 0.972 and 0.989 consequently, which shows that they are more than the minimum accepted model 0.97 as suggested by Hair et al. (2010).

3.6 Assessment of Constructs Reliability

Before the validity analysis, every measurement model construct in the research assessment model is checked for its unidimensionality and statistical reliability. The comparative fit index (CFI) is used to assess all constructs' unidimensionality in this research. A summary of the CFI values for all the constructs in the research assessment model presented in Table 3, the computed values recorded more than 0.9 in every construct.

Table 3: constructs' unidimensionality and reliability scores

No	Research constructs	CFI scores (unidimensionality)
1	Quality of M-government	**0.966**
2	Public Value	**1.000**
3	Trust	**0.998**
4	User Satisfaction	**0.997**
5	Continuous Intention To Use	**0.989**

Essentially, all the values were above the recommended value of 0.90 (Hair et al., 2011; Awang, 2014), which implied that unidimensionality is not violated. Also, Awang (2015) noted that unidimensionality is achieved when the measuring items in every construct of the research have acceptable factor loadings.

3.7 Constructs Validity

The construct validity of the structural model's fitness was investigated in this study by looking at both convergent and discriminant validity. Pallant (2011) claims that construct validity is investigated by looking at how it interacts with other constructs, both related (convergent validity) and unrelated (independent validity) (discriminant validity). Hair et al. (2016) state that the Average Variance Extracted (AVE) should not be less than 0.5 to indicate appropriate convergent validity, and that AVE estimations for two components should offer support for discriminant validity (Hair et al., 2016). If the AVE is greater than the square of the correlation coefficient between the constructs, discriminant validity is established, according to Fornell and Larcker (1981). Internal reliability (Cronbach's alpha), Construct Validity (CR), and Average Variance Extracted are all used to assess the reliability (AVE).

3.8 Convergent Validity

Convergent validity is referred to as the factor loading scores from the measurement scale items in a latent construct that should be correlated and significant. Such items are supposed to measure the same construct and if their factor loading scores are more significant than 0.5, then the convergent requirement sustained (Awang, 2014; 2015). In this research, factor loading for all the items in the final measurement model and the Bentler-Bonett coefficient (NFI) is used to assess the convergent validity (Hair et al., 2011). The final measurement of the constructs in the model and NFI values were above 0.5 and 0.9, respectively as presented earlier. Table 4 provides the summary of the convergent validity for all the constructs in this study. All the constructs have AVE value of more than 0.5; therefore, they fulfil the acceptable requirement.

Table Error! No text of specified style in document.**4: Convergent reliability**

Constructs	Items	Factor loading	CR	AVE
Quality of M-government	Q3	.820	0.943	0.721
	Q4	.790		
	Q5	.792		
	Q6	.547		
	Q7	.663		
	Q8	.743		
	Q9	.876		
	Q10	.693		
Public Value	Q11	.606	0.785	0.646
	Q12	.670		
	Q13	.895		
	Q14	.898		
	Q15	.693		
	Q16	.895		
Trust	Q21	.898	0.954	0.712
	Q22	.924		
	Q23	.883		
	Q24	.862		
User Satisfaction	Q28	.749	0.954	0.834
	Q29	.898		
	Q30	.924		
	Q31	.924		
	Q34	.883		
Continuous Intention To Use	Q35	.643	0.893	0.614
	Q36	.763		
	Q37	.788		
	Q38	.892		
	Q39	.764		
	Q40	.883		
	Q41	.820		

3.9 Discriminant Validity Analysis

According to Awang (2014) discriminant validity is a scientific measurement concept and commonly connotes construct validity. Invariably, the discriminant validity of the constructs is attained when all the redundant items in a construct are removed and the remaining items correlate strongly with the construct. In other words, discriminant validity captures some crucial components of the goodness-of-fit model requirement.

In line with Hair et al. (2011) and Awang (2014) it is important to establish discriminant validity between exogenous variables in the research assessment framework. They also emphasized that the correlation between them should be lower than 0.85, Pallant (2011) recorded that below 0.9 correlation coefficient is acceptable. Table 5 shows the correlations between the constructs in the study is lower than 0.85; hence the result satisfied the acceptable requirement because redundant items were all removed and the correlation between the sub-constructs was lower than the 0.85 score.

Table Error! No text of specified style in document.**5: Discriminant validity**

Constructs	Quality of M-government	Public Value	Trust	User Satisfaction	Continuous Intention To Use
Quality of M-government	**0.734**				
Public Value	0.122	**0.702**			
Trust	0.291	0.295	**0.821**		
User Satisfaction	0.271	0.098	0.218	**0.73**	
Continuous Intention To Use	0.182	0.085	0.154	0.152	**0.812**

In summary, the convergent, construct and discriminant validity requirement are fulfilled in this research. This implies that the entire constructs in this research could be employed to analyse the structural equation modelling.

4. Structural Model Analysis

The next stage of the analysis is to analyse the full constructs into a single structural equation model utilizing Analysis of Moment Structure (AMOS). The purpose of the pull-out is to show the causal relationships between two constructs in accordance with the hypothesis. The research assessment framework's exogenous and endogenous factors were set up. The external variables were introduced first, followed by the intervening variable, and last, the endogenous variable. An arrow pointing in the direction of the hypotheses connects each construct, as seen in Figure 7.

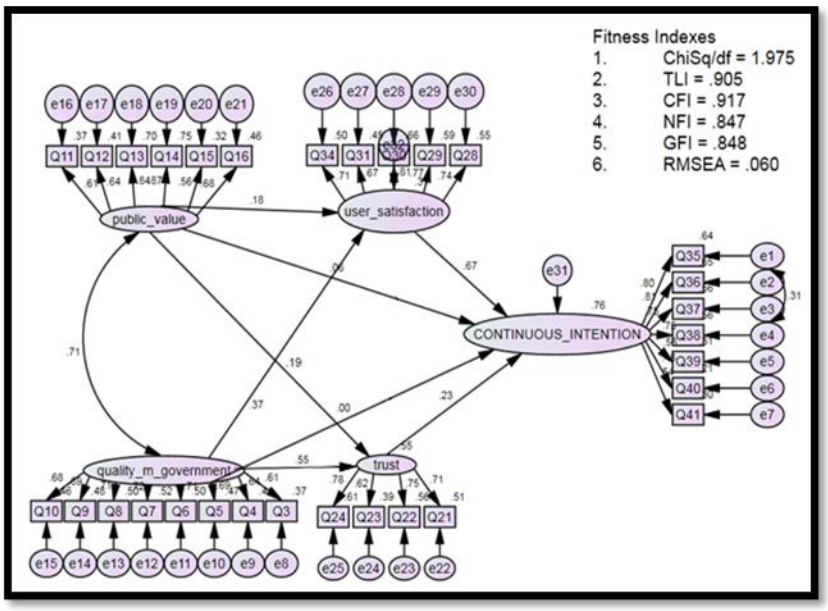

Fig. Error! No text of specified style in document.**7: Final Structural Model**

The model, on the other hand, was employed to examine the multidirectional interactions found throughout the research constructs. Certain fitness indexes for the structural measurement model do not achieve the appropriate and sufficient degree of goodness-of-fitness indexes when the data is analysed by AMOS (Awang, 2014). Although the fitness indexes were below the acceptable level, the observed factor loadings for the complete constructions were above 0.5. As a result, modification indices were used to identify redundant elements and were then correlated to improve the model's goodness-of-fitness indices. Figure 7 depicts the goodness-of-fitness for the two structural measuring models, with the goodness-of-fitness indices gradually improving until they reached an acceptable level.

The final structural measurement model examined the causal effect (impact) of the path diagram's many constructs. First and foremost, the structural model's fitness indices were observed and satisfactory within the specified acceptable degree of goodness of fitness indexes (Hair et al., 2011; Awang, 2015), as shown in Table 6.

Table 6: Fitness Indices of the structural model

Name of Index	Level of Acceptance	Index Value	Comments
Chisq/df	Chisq/df ≤3	1.975	The required level is achieved
TLI	TLI ≥ 0.9 means satisfactory	0.905	The required level is achieved
CFI	CFI ≥ 0.9 means satisfactory fit.	0.917	The required level is achieved
NFI	NFI ≥ 0.80 suggests a good fit	0.847	The required level is achieved
GFI	GFI ≥ 0.80 suggests a good fit.	0.848	The required level is achieved
RMSEA	RMSEA ≤ 0.08 mediocre fit.	0.060	The required level is achieved
Model is accepted			

The standard regression weights indicated the beta coefficient estimate, which measures the primary constructs' impacts, exogenous variables on the intervening and endogenous variables (Continuous Use). The Analysis Moment of Structures (AMOS) used for the structural equation modelling in this research typically produced two types of text outputs: standardized regression weights and unstandardized regression weights for the path analysis. However, the standardized regression weight is adopted to explain the relationship among the entire constructs in the theoretical research framework and subsequently for testing the research hypotheses as it is recommended to be better as it is easier to interpret (Awang, 2015).

4.1 Hypothesis Testing of Direct Effect

The model has 8 direct effect of paths relationships between the exogenous constructs and endogenous constructs and the results of direct effects hypotheses testing are outlined as in Table 7.

Table 7: Hypotheses and Results

	Predictor variables	Criterion variables	Standardized (β)	p-value	Result
H_1	Public Value	User satisfaction	0.18	***	Supported
H_2	Quality of M-government	User satisfaction	0.37	***	Supported
H_3	Public Value	Trust	0.19	***	Supported
H_4	Quality of M-government	Trust	0.55	***	Supported
H_5	Public Value	Continuous Intention to Use	0.06	0.064	**Not supported**
H_6	Quality of M-government	Continuous Intention to Use	0.00	0.082	**Not supported**
H_7	User satisfaction	Continuous Intention to Use	0.67	0.001	Supported
H_8	Trust	Continuous Intention to Use	0.23	0.031	Supported

Key: *** represents p-value is less than 0.05

Based on the Table 7, there are only two out of eight hypotheses were found as not significant. The result for hypotheses 1 and 2 were supported in the relationship between public value and quality of M-government to user satisfaction with a significant p-value of 0.000 and β value of 0.18 and 0.37 respectively. Meanwhile, hypotheses 3 and 4 were also supported which revealed that there is significant relationship and positively related between public value and quality of M-government to user satisfaction ($p = 0.000$, $\beta = 0.19$; 0.55) respectively. However, the results do not support the hypotheses 5 and 6, where public value and quality of M-government are not significantly related to continuous intention to use ($p = 0.064$, $\beta = 0.06$, $p = 0.082$, $\beta = 0.00$). Finally, the hypotheses 7 and 8 were supported, which revealed a significant relationship between user satisfaction and trust to the continuous intention to use with a p-value of 0.001 and 0.0031 as well β value of 0.67 and 0.23 respectively.

4.2 Hypothesis Testing of Mediating effect

There are two types of mediation effects as stated by Awang (2015) which are full mediation and partial mediation. He further stated that there is full mediation when the indirect effect is significant with p-value less than 0.05 and the direct effect is not significant. Meanwhile, there is partial mediation when both indirect and direct effect is significant with p-value less than 0.05 and there is no mediation when one or both indirect effects are not significant p-value more than 0.05. This can be concluding that there is mediation when indirect effect is significance, while the types of mediation are determined by the significance or insignificance of the direct effects. Therefore, hypothesis 9 to 12 of this study could be answered by referring Table 8 below.

Table 8: Summary of the mediation effects

Types of mediation	Indirect effect		Direct effect
	IV → MV p-value	MV → DV p-value	IV → DV p-value
Full Mediation	Sig	Sig	Not Sig
Partial Mediation	Sig	Sig	Sig
No Mediation	Not Sig*	Not Sig*	-na-

Key: IV = Independent Variable; MV = Mediating Variable; DV = Dependent Variable;
*One or both the paths is/are non-significant

4.2.1 Hypothesis H_9:

In this hypothesis, *user satisfaction* acts as mediator and the hypothesis states that *user satisfaction* mediates the relationship between *public value* and *continuous intention to use*. The results of the hypothesis testing are as in table 9

Table 9: Results of hypothesis H_9

Relationship	Standardized (β)	p-value	Result
Public Value → User Satisfaction (a)	0.18	***	Significant
User Satisfaction → Continuous Intention to Use (b)	0.67	0.001	Significant
Public Value → Continuous Intention to Use (c)	0.06	0.064	Not Significant
Full Mediation since direct effect (c) is not significant			

Based on the Table 9, hypothesis 9 is supported and the type of mediation is Full Mediation since the direct effect is not significant. Therefore, this explained that user satisfaction mediated the relationship between public value and continuous intention to use.

4.2.2 Hypothesis H_{10}:

In this hypothesis, *user satisfaction* acts as mediator and the hypothesis states that *user satisfaction* mediates the relationship between *quality of M-government* and *continuous intention to use*. The results of the hypothesis testing are as in table 10

Table 10: Results of hypothesis H_{10}

Relationship	Standardized (β)	p-value	Result
Quality of M-government → User Satisfaction (a)	0.37	***	Significant
User Satisfaction → Continuous Intention to Use (b)	0.67	0.001	Significant
Quality of M-government → Continuous Intention to Use (c)	0.00	0.082	Not Significant
Full Mediation since direct effect (c) is not significant			

Based on the above Table 10, the hypothesis 10 is supported and the type of mediation is Full Mediation since the direct effect is not significant. Therefore, this explained that user satisfaction mediated the relationship between quality of M-government and continuous intention to use.

4.2.3 Hypothesis H_{11}:

In this hypothesis, trust acts as mediator and the hypothesis states that *trust mediates* the relationship between *public value* and *continuous intention to use*. The results of the hypothesis testing are as in table 11

Table 11: Results of hypothesis H_{11}

Relationship	Standardized (β)	p-value	Result
Public Value → Trust (a)	0.19	***	Significant
Trust → Continuous Intention to Use (b)	0.23	0.031	Significant
Public Value → Continuous Intention to Use (c)	0.06	0.064	Not Significant
Full Mediation since direct effect (c) is not significant			

Based on the above Table 11, the hypothesis 11 is supported and the type of mediation is Full Mediation since the direct effect is not significant. Therefore, this explained that trust mediated the relationship between public value and continuous intention to use.

4.2.4 Hypothesis H_{12}:

In this hypothesis, trust acts as mediator and the hypothesis states that *trust mediates* the relationship between quality of M-government and continuous intention to use. The results of the hypothesis testing are as in table 12

Table12: Results of hypothesis H_{12}

Relationship	Standardized (β)	p-value	Result
Quality of M-government → Trust (a)	0.55	***	Significant
Trust → Continuous Intention to Use (b)	0.23	0.031	Significant
Quality of M-government → Continuous Intention to Use (c)	0.00	0.082	Not Significant
Full Mediation since direct effect (c) is not significant			

Based on the above Table 12, the hypothesis 12 is supported and the type of mediation is Full Mediation since the direct effect is not significant. Therefore, this explained that trust mediated the relationship between quality of M-government and continuous intention to use. In conclusion, based on the overall results above, it revealed that all the hypotheses were supported. Table 13 shows the summary of mediation effect results which represented by four hypotheses namely H_9, H_{10}, H_{11} and H_{12}.

Table 13 Error! No text of specified style in document.**: Summary of mediation effect result**

Predictor variables	Criterion variables	Mediator	Hypothesis	Results
Public Value	Continuous Intention to Use	User satisfaction	H9	Supported
Quality of M-government	Continuous Intention to Use	User satisfaction	H10	Supported
Public Value	Continuous Intention to Use	Trust	H11	Supported
Quality of M-government	Continuous Intention to Use	Trust	H12	Supported

5. Conclusion

This chapter contained the data analysis through empirical findings and discussion about the hypothesis of the present study. this chapter provides the descriptive analysis, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modelling (SEM). The analysis on the model found that quality construct has significant direct relationship with trust and user satisfaction constructs, but it does not have significant direct relationship with continuous to use construct. Similarly, the public value construct has significant direct relationship with trust and user satisfaction constructs, but it does not have significant direct relationship with continuous intention to use construct. Thus, both the user satisfaction and trust constructs have a full mediation effect with the direct relationship of public value and quality construct with continuous intention to use construct of M-government services. Thus, it can be concluded that the relationship of public value and quality constructs with continuous to use construct is fully mediated by both trust and satisfaction constructs in M-government services. The findings from this study assists the government for continuous usage of M-government services that contributes to the sustainability of smart city.

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