Journal of Economics and Business

Abu Bakar, N., Uzaki, K., Mohamed Naim, A., and Abd Manaf, N. A. (2020), Intention to Implement 5S Management Among Students in Higher Education Institutions. In: *Journal of Economics and Business*, Vol.3, No.4, 1290-1303.

ISSN 2615-3726

DOI: 10.31014/aior.1992.03.04.281

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The Asian Institute of Research
Journal of Economics and Business
Vol.3, No.4, 2020: 1290-1303
ISSN 2615-3726

DOI: 10.31014/aior.1992.03.04.281

Intention to Implement 5S Management Among Students in Higher Education Institutions

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Abstract
The aim of this research paper is to analyze intention for implementing 5S management among students in higher education institutions. The quality management method using 5S approach is function to standardized process to properly implemented creates and maintains an organized, safe, clean and efficient workplace. In this study. The 5S method was implemented to create conducive and efficient place for student activities related to academic. This study implemented quantitative method using survey development with application Technology Acceptance Model, in analyzing student intention of implementing quality management for study workspace and living space. The sampling procedure using stratified random sampling method for students that have intention and experience in implementing quality management in their daily life. The number of respondents is 120 students that studying in higher education institutions. This study developed confirmatory factor analysis for measurement model. The absolute fit index, incremental fit index and parsimonious fit index is meet the requirement level to prove measurement model is robust, reliable and represented the actual data. The structural model in this study analyzed using maximum likelihood estimator. This study indicates all of the exogenous variable have significant and positive effect to the endogenous latent construct. The Perceived Usefulness (PU) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.507 with probability value is less than 0.001. Next, the Perceived Ease of Use (PE) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.433 with probability value is less than 0. 001. Then, the Religiosity (R) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.348 with probability value is less than 0.001. The finding of this study contributes to the body of knowledge in 5S quality management and it helps policy makers in university to develop conducive environment for students.

Keywords: Technology Acceptance Model, 5S Quality Management, Structural Equation Modelling, Confirmatory Factor Analysis

1. Introduction

The 5S quality management was generalized by Toyota Production System in Japan. The main objective of 5S is to helps a workplace remove items that are not needed (sort), organize the items (straighten), clean (shine), label the items (standardize) and always organized workplace over the long term (sustain). Toyota Production System was introduced this system in year 1980 and applied in others industry in year 1990.

In current economic condition the high cost in operation management, unprecedented overflow of high-quality products contributed to continuous improvement for customers satisfaction. Besides that, organization was continuously improved the quality of products and services for sustain their position and reputation. By improvement the quality of products and services, organization can adopt the 5S practices. The Japanese manufacturing industries such as Honda, Toyota and Mitsubishi come in the list of top positions worldwide. It is a notable thing that Japanese not only achieve high level of productivity and profitability at home, but also gain success in the company's operating overseas (Randhawa and Ahuja, 2017; Hitomi, 2004).

Therefore, companies in Malaysia was encouraged to apply the 5S practices for improving the organization's productivity and profitability. 5S practices was applied in organization in order to improve the workplace environment by systematically and effectively plan, implement and monitor. Even there are many organizations apply the concept of 5S practice, but the most important is either there are really aware the important of application 5S concept in their workplace environment or not. This is because 5S practice is the hard practice to implement because of the organization are very busy and they believe that 5S is only a clean-up process. However, many successful organizations were applied the concept of 5S in their workplace and shows the excellent achievement. Thus, this study tries to explore a new insight of 5S practices in the higher education organization by investigate the awareness of 5S practice.

2. Literature review

Takasi Osada was the first person who developed the framework of 5S based on five pillars in Japanese acronym for Seiri (organization), Setion (neatness), Sesio (cleaning), Seiketsu (standardization) and Shitsuke (discipline) (Randhawa and Ahuja, 2017a). 5S framework give a good workplace environment to employees and give a good impact on the quality of their work. According to Gapp, et al., (2008) a primary objective of practicing 5S is to maximize the level of workplace health and safety in conjunction with increased productivity. It can be proved that most of the companies applies the 5S practices are satisfy and recommend this approach. For example, Sphoorti Machine Tools Pvt. Ltd. was successfully applied the 5S practices in productivity and hence profit levels. Besides that, 5S practices was increase the enthusiasm and punctuality among the workers and safer working conditions (Purohit and Shantha, 2015).

5S practices is very important because it can help organizations to reduce costs by maximizing process efficiency, effectiveness and performance through the establishment and maintenance of a high-quality, clean working environment (Suárez-Barraza and Ramis-Pujol, 2012; Hirano, 1995; Ho, 1999; Liker, 2004; Liker and Hoseus, 2008). Therefore, study by Srinivasan, et al. (2016) show that two important aspects of safety climate (management commitment and involvement) can be significantly, positively influenced by successful 5S events, which may translate to improved safety overall. Gupta and Chandna (2020) analyze the implementation of 5S in a scientific equipment manufacturing company and found that the organization become progressively beneficial and increasingly productive.

The practice of 5S has turned out to be a significant contributor in the strengthening the performance of manufacturing organizations from their earlier not so encouraging and unimpressive performance levels (Randhawa and Ahuja, (2017b). Thus, 5S implement in organizations can be defined as a methodology that results the workplace become clean, uncluttered, safe, and well organized to help reduce waste and optimize productivity. 5S practice also was designed to help build a quality work environment, both physically and mentally (Abu Bakar, et al., 2019). Therefore, the function of 5S practices is to improve process of efficiency and safety, reduces waste, prevents errors and defects in organizations.

This study was adopted the Technology Acceptance Model Theory (Davis, 1989) with two primary factors influencing an individual's intention to use new technology: perceived ease of use and perceived usefulness. Various study used theory acceptance model in their researches. For example, Kuciapski (2017) used the theory of acceptance and use of technology to explain the determinants that affect employees' intention to use mobile devices and software for knowledge transfer during the process of knowledge management. Lindsay (2011) adapted technology acceptance model for mobile policing. Then, Gamal Aboelmaged (2010) used technology acceptance model to predict e-procurement.

Therefore, the main objective of this study is to examine the intention of 5S practice in the daily life among students in higher education. Students are encouraged to explore the information regarding the 5S practice using internet. This study used the questionnaire method to explore the awareness of 5S practice in higher education. This questionnaire is focused on the intention of students use internet in gather information regarding 5S practice. This study was introduced a new variable known as religiosity as addition variables. This is because in the religious of Islam, the factor of cleanliness is very important and compulsory to perform.

2. Research methodology

This main objective of this study is to evaluate the intention to implement 5S quality management among students in higher education institution. This study implemented Technology Acceptance Model as framework for analysis. The determinant factors that involved in this study are Perceived Usefulness (PU), Perceived Ease of Use (PE) and Religiosity (R).

2.1 Participant Characteristics and Sampling Procedure

The participants in this study are students that have experienced and knowledge in practicing quality management in their life including study workspace and daily life activities. This study using stratified random sampling method. This study prepared 140 surveys are submitted and 120 surveys are returned back. The percentage of survey response rate is 85.7 percentages. The demographic characteristics for gender respondents are 80 female students and 60 male students. Each respondent was given time to answered the survey in their preferred time using online platform. Each of the construct have six items that composed 24 items in this study to evaluate intention among students in implementing 5S quality management in their life and environment. This study using ten-points of measurement scale to make sure all data is interval that valid parametric analysis in statistic of structural equation modelling.

2.2 Theoretical Framework and variables selection

This study used Technology Acceptance Model (Davis, et al., 1989). This theory assumes that perceived usefulness and perceived ease of use are always the primary determinants of technology adoption in organizations (Lu, et al., 2003). Therefore, this study choose three variables in measuring the intention of implementation 5S among higher education students. The variables are perceived ease of used (Adams, et al., 1992), perceived usefulness (Chau, 1996) and religiosity (Bukhari, et al., 2019). The main function of this variables is to identify the intention of students in implement 5S practice in their life in higher education institution.

2.3 Confirmatory factor analysis

In this study, the measurement model was analyzed to developed reliable findings that fit with actual data from real questionnaire. This study implemented confirmatory factor analysis (CFA) in developing measurement model that meet requirement for model fit indexes. The confirmatory factor analysis involved with unidimensional checking, factor loading checking, modification checking, outlier detections.

For measurement model, this study performed validity test for convergent, construct and discriminant validity. The convergent validity is function to show that measures that should be related are in reality related. In this study, the convergent validity assessed using Average Variance Extracted (AVE) as shown in Equation (1).

$$AVE = \frac{\sum_{i=1}^{n} \lambda_i}{n} \quad \ldots\ldots (1)$$

Where,

λ_i: Standardized factor loading for item *i*.

n: Number of items that measure a latent construct.

In developing a construct that meet convergent validity, the value of AVE should be greater or equal to 0.5.

Next, this study developed construct validity using three types of model fit indexes namely absolute fit index, incremental fit index and parsimonious fit index. The absolute fit index was measured using Root Mean Square Error of Approximation (RMSEA). The RMSEA avoids issues of sample size by analyzing the discrepancy between the hypothesized model, with optimally chosen parameter estimates, and the population covariance matrix. RMSEA is an absolute fit index, which evaluates how far a hypothesized model is from a perfect model. The calculation for RMSEA is shown in Equation (2).

$$RMSEA = \sqrt{Max\left(\left[\left(\left(\frac{\chi^2}{df}\right)-1\right)/(n-1)\right],0\right)} \quad \ldots\ldots (2)$$

Where,

χ^2: Chi-square value.

df : Degree of freedom.

n: Sample size.

In attaining reliable measurement model, the value of RMSEA should be lower than 0.08. RMSEA is the fit index of the difference between observed and hypothesized covariance matrix.

Next, this study also checked the construct reliability (CR) to measure reliability and internal consistency of the measured variables representing a latent construct. The value of CR should be larger than 0.6 to prove a construct is reliable. The value of CR derived using Equation (3).

$$CR = \frac{\left(\sum_{i=1}^{n} \lambda_i\right)^2}{\left(\sum_{i=1}^{n} \lambda_i\right)^2 + \left(\sum_{i=1}^{n} \left(1-\lambda_i^2\right)\right)} \quad \ldots\ldots (3)$$

Where,

λ_i: Standardized factor loading for item *i*.

n: Number of items that measure a latent construct.

4. Results and discussion

This study evaluated the relationship between three exogenous constructs (perceived usefulness, perceived ease of use and religiosity) with an endogenous construct (Intention to implement 5s management). The sample size is 120 students of higher education institutions in Malaysia. This study implemented structural equation modelling to analyzed the correlation and path analysis. The confirmatory factor analysis was performed to developed measurement model that has better fit indexes between actual data and proposed model.

4.1 First stage of confirmatory factor analysis

Confirmatory factor analysis (CFA) is functions to performs the assessment of fit between observed data and an a priori conceptualized, theoretically grounded model that specifies the hypothesized causal relations between latent factors and their observed indicator variables. The process of CFA evaluating three main components namely unidimensional characteristic, validity and reliability for all latent constructs. Figure 1 shows the first stage of confirmatory factor analysis for measurement model for assessing intention in implementing 5S management.

Unidimensional characteristic is achieved when the measuring items have acceptable factor loadings for the respective latent construct. Unidimensional characteristic indicates that is the items in a questionnaire measure only a single construct. Figure 1 shows factor loading for items for each construct are higher than 0.6. Therefore, measurement model in Figure 1 achieved unidimensional characteristic.

Then, this study evaluated the fitness of the measurement model using absolute fit index, incremental fit index and parsimonious fit index. Table 1 shows the fit indexes of measurement model in first stage of confirmatory factor analysis.

The absolute fit index determines how well the hypothesized theoretical model fits the sample real data and demonstrates which proposed model has the most superior fit. This measure provides the most fundamental indication of how well the proposed theory fits with the real data.

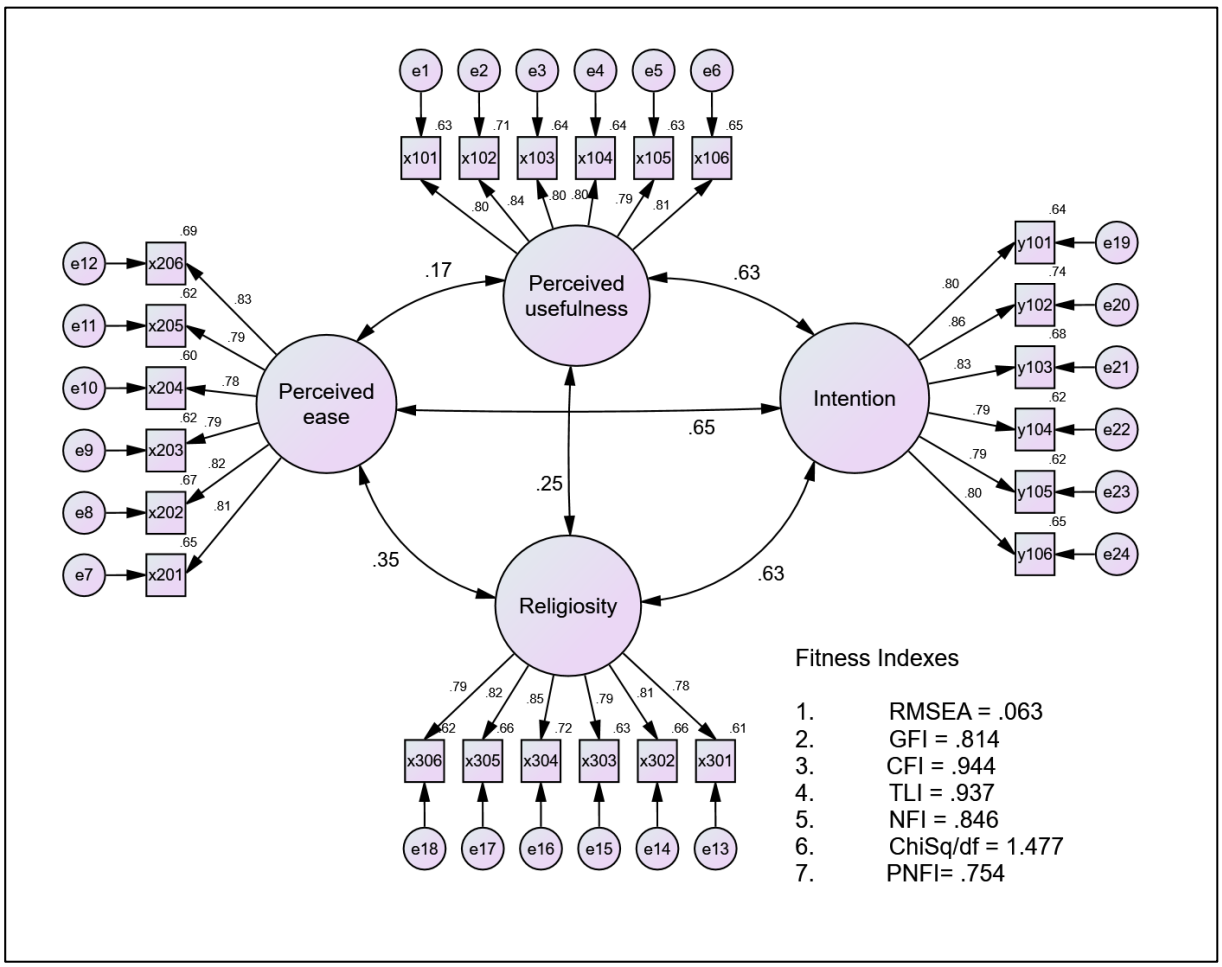

Figure 1. First stage of confirmatory factor analysis

In this study, the absolute fit is tested using Root Mean Square Error of Approximation (RMSEA) and Goodness of Fit Index (GFI). The RMSEA value for measurement model in this study is smaller than acceptable value 0.08. Therefore, according to RMSEA the measurement model shows good fit between proposed model and actual data.

However, the value of second index, GFI is 0.814 which is smaller than requirement level. Therefore, the measurement level need some modification to increase the GFI value.

The second group of model fit is incremental fit which measured using Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Normed Fit Index (NFI). The incremental fit is comparing how well the proposed model fit with an alternative baseline model which is null model. In most cases, the null model is a single construct model with all indicators perfectly measuring the construct. In this study, value of CFI and TLI are larger than 0.90. Therefore, the proposed of measurement model is fits well with baseline model. However, the value of NFI is still lower than required level of 0.90. The value of NFI concluded that measurement model need some modification to achieve higher value.

Next, the third group of model fit index is parsimonious fit which evaluates the model fit of competing models by comparing the degree of model complexity and either improves it to become a better fit or produces a simpler model. The parsimonious fit was measured using two indexes namely Chi Square/ Degrees of freedom (ChiSq/df) and Parsimony Normed Fit Index (PNFI). The value of ChiSq/df is 1.477 that meet requirement level for indicating the measurement model in this study is parsimonious models which have relatively few parameters to estimate. The value PNFI is 0.754 that is larger than requirement. Therefore, measurement model in this study is parsimonious model which is simple hypothesized model is favorable than complex model.

Table 1. Model fit analysis for measurement model in first stage of confirmatory factor analysis

Name of category for fit index	Name of index	Level of acceptance	Value for measurement model	Status of acceptance
1. Absolute fit	Root Mean Square Error of Approximation (RMSEA)	RMSEA < 0.08	0.063	The required level is achieved
	Goodness of Fit Index (GFI)	GFI > 0.90	0.814	The required level is NOT achieved
2. Incremental fit	Comparative Fit Index (CFI)	CFI > 0.90	0.944	The required level is achieved
	Tucker-Lewis Index (TLI)	TLI > 0.90	0.937	The required level is achieved
	Normed Fit Index (NFI)	NFI > 0.90	0.846	The required level is NOT achieved
3.Parsimonious fit	Chi Square/ Degrees of freedom (ChiSq/df)	ChiSq/df < 5.0	1.477	The required level is achieved
	Parsimony Normed Fit Index (PNFI)	PNFI > 0.50	0.754	The required level is achieved

4.2 Second stage of confirmatory factor analysis

In this study, the measurement model in first stage of confirmatory factor analysis need some modifications to make sure all model fit indexes are achieved the required level. In first stage of confirmatory factor analysis, GFI and NFI still have some problem, therefore measurement model need to adjust according to modification index. This study evaluated the analysis using IBM SPPS Amos to develop more reliable measurement model in analyzing relationship between independent variables and dependent variable.

Figure 2 shows the measurement model for second stage of confirmatory factor analysis. In this figure, items were deleted according to modification index. For each of latent construct, the number of items is four. Uni-dimensional characteristics achieved in this measurement model with all of items achieve higher than 0.6 of factor loading. Therefore, the measurement model is sufficiently accurate representation of the data.

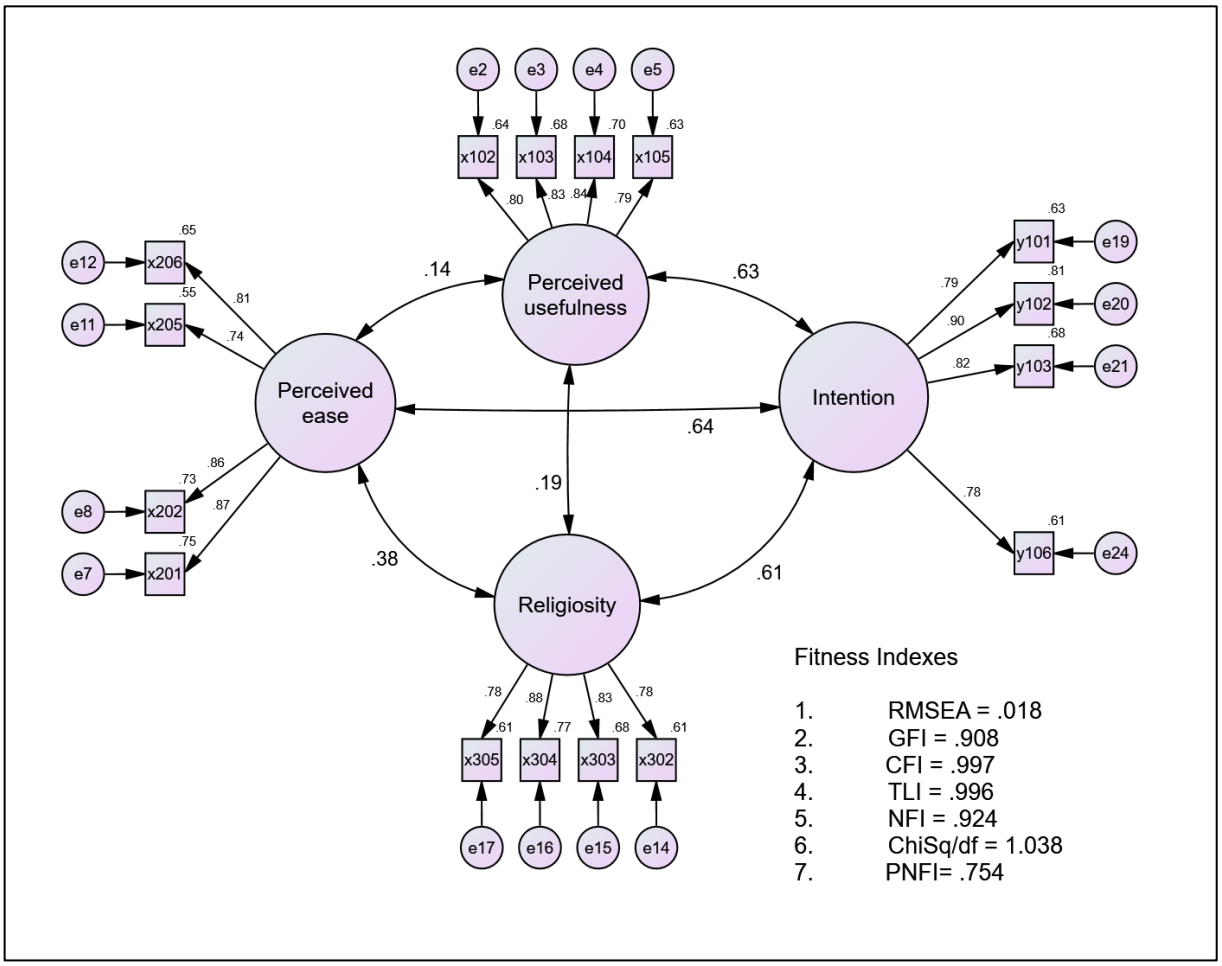

Figure 2. Measurement model for second stage of confirmatory factor analysis

Next, this study validated the model fit for three categories of indexes. The first model fit index is absolute fit indexes measured using two methods namely Root Mean Square Error of Approximation (RMSEA) and Goodness of Fit Index (GFI). After the modification process, measurement model in second stage of confirmatory factor analysis exhibits the value of RMSEA is 0.018 and GFI is 0.908. Both of these indexes show good agreement that measurement model is a priori model that fits the sample data.

Then, the second category of model fit index namely incremental fit. In this study, three incremental fit are selected namely Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Normed Fit Index (NFI). After the modification in second stage of confirmatory factor analysis, three incremental fit indexes are achieved required level for indicating good fit model. As a conclusion, an incremental fit index is analogous to R^2 and so a value of zero indicates having the worst possible model and a value of one indicates having the best possible. In this study CFI value is 0.997, TLI value is 0.996 and NFI value is 0.924. The measurement model shows good incremental fit. The comparison chi-square for the hypothesized model to one from a null model indicates measurement model in this study exhibits good fit.

Next, the third category of model fit is represented by parsimonious fit. In this study, the parsimonious fit is represented by two indexes namely Chi Square/ Degrees of freedom (ChiSq/df) and Parsimony Normed Fit Index (PNFI). The value ChiSq/df is 1.038 that is meet the requirement value for parsimony model. Value of PNFI is 0.754 which larger than 0.05 to indicates measurement model in this study is parsimonious model for indicating relationship between exogenous latent constructs with endogenous latent construct.

As a conclusion, this study developed measurement model that exhibits absolute fit, incremental fit and parsimonious fit, after second stage the confirmatory factor analysis. In the same time, unidimensional

characteristic is achieved because all of factor loading for items are higher than 0.60. Therefore, this measurement model is valid and reliable for adopt in causal path analysis of structural equation modelling.

Table 2. Model fit analysis for measurement model in second stage of confirmatory factor analysis

Name of category for fit index	Name of index	Level of acceptance	Value for measurement model	Status of acceptance
1. Absolute fit	Root Mean Square Error of Approximation (RMSEA)	RMSEA < 0.08	0.018	The required level is achieved
	Goodness of Fit Index (GFI)	GFI > 0.90	0.908	The required level is achieved
2. Incremental fit	Comparative Fit Index (CFI)	CFI > 0.90	0.997	The required level is achieved
	Tucker-Lewis Index (TLI)	TLI > 0.90	0.996	The required level is achieved
	Normed Fit Index (NFI)	NFI > 0.90	0.924	The required level is NOT achieved
3.Parsimonious fit	Chi Square/ Degrees of freedom (ChiSq/df)	ChiSq/df < 5.0	1.038	The required level is achieved
	Parsimony Normed Fit Index (PNFI)	PNFI>0.50	0.754	The required level is achieved

Table 3. Validity and reliability testing for confirmatory factor analysis

Construct	Item	Factor Loading	Cronbach Alpha (Requirement is above 0.7)	Construct Reliability, CR (Requirement is above 0.6)	Average Variance Extracted, AVE (Requirement is above 0.5)
X1: Perceived Usefulness, (PU)	x102	0.80	0.887	0.665	0.888
	x103	0.83			
	x104	0.84			
	x105	0.79			
X2: Perceived Ease of Use, (PE)	x201	0.87	0.890	0.675	0.892
	x202	0.86			
	x205	0.74			
	x206	0.81			
X3: Religiosity, (R)	x302	0.78	0.888	0.670	0.890
	x303	0.83			
	x304	0.88			
	x305	0.78			
Y1: Intention to implement 5S, (I)	y101	0.79	0.894	0.679	0.894
	y102	0.90			
	y103	0.82			
	y106	0.78			

Table 3 indicates the result of validity and reliability for measurement model after second stage of modification. Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability. The value of Cronbach Alpha for first exogenous latent construct,

X1 is 0.887. Therefore, items that measured X1 show reliability of scale for internal consistency. Next, the Cronbach Alpha for second exogenous latent construct, X2 is 0.890. This value indicates all items that measured X2 are considered as one group to prove internal reliability. Then, the value of Cronbach Alpha for exogenous latent construct, X3 is 0.888. This value shows X3 was measured by the items have shared covariance and probably measure the same underlying concept. The value of Cronbach Alpha for endogenous latent construct, Y1 is 0.894. This value is larger that requirement level. Therefore. All items that measured Y1 are meet with requirement of internal consistency and scale reliability.

Table 3 also indicates the value of Construct Reliability, CR for testing the total amount of true score variance relative to the total scale score variance. In this study, the value of CR for X1 is 0.665 that indicates the measurement model shows construct internal reliability. Next, the value of Cr for X2 is 0.675 that is larger than 0.6. Therefore, X2 is a construct that exhibits reliability with considering the total amount of true score variance relative to the total scale score variance. Next, the value of Cr for X3 is 0.670 that indicates the construct meet the required level of internal reliability. Then, the value of CR for Y1 is 0.679 that proved construct with appropriate internal reliability in measuring intention for implementing 5S quality management.

In addition, Table 3 also describes the analysis value for Average Variance Extracted, AVE. The requirement level for AVE is above 0.5. The Average Variance Extracted (AVE) is a measure of the amount of variance that is captured by a construct in relation to the amount of variance due to measurement error. The Average Variance Extracted (AVE) is a measure to assess convergent validity. The AVE is the average amount of variance in indicator variables that a construct is managed to explain. AVE for each construct can be obtained by sum of squares of completely standardized factor loadings divided by this sum plus total of error variances for indicators.

The value of AVE for first exogenous latent construct, X1 is 0.888. This indicates X1 meet the requirement of construct reliability for convergent validity. Convergent validity involves measuring a construct with independent measurement techniques and demonstrating a high correlation among the measures. Next, the value of AVE for second exogenous latent construct, X2 is 0.892. This value indicates X2 shows reliability characteristic. Next, the value of AVE for third exogenous latent construct, X3 is 0.890. The AVE value for X3 is larger than requirement level to prove that X3 shows the extent to which responses on a test or instrument exhibit a strong relationship with responses on conceptually similar tests or instruments.

Then, this study evaluated AVE for endogenous latent construct namely intention to implement 5S quality management among students in higher education institutions. The value of AVE is 0.894 that indicates Y1 is demonstration of substantial and significant correlation between different instruments designed to assess a common construct.

Next, this study developed discriminant validity for measurement model as shown in Table 4. The diagonal values in bold is the square root of AVE, while other values are the correlation between the corresponding latent constructs. The discriminant validity is considered as achieved in condition of a diagonal value in bold is higher than the values in its row and column. Discriminant validity is demonstrated by evidence that measures of constructs that theoretically should not be highly related to each other are, in fact, not found to be highly correlated to each other. The discriminant validity assessment has the goal to ensure that a reflective construct has the strongest relationships with its own indicators. Discriminant Validity determines whether the constructs in the model are highly correlated among them or not. It compares the square root of AVE of a particular construct with the correlation between that construct with other constructs. The value of Square Roof of AVE should be higher that the correlation.

Table 4 shows the diagonal values derived from the square root of AVE are larger than values in its row and column. Therefore, X1, X2, X3 and X4 are the reflective constructs has strongest relationships with its own indicators.

Table 4: Discriminant validity for measurement model

Construct	X1	X2	X3	Y1
X1	**0.942**			
X2	0.141	**0.945**		
X3	0.188	0.375	**0.943**	
Y1	0.628	0.638	0.614	**0.946**

4.3 Causal path analysis using structural equation modelling for standardized regression

This section analyzed the hypothesis testing of path model in structural equation modelling. In the same time, this section describes the relationship between exogeneous latent constructs and endogenous latent construct. Figure 3 shows causal path analysis for structural equation modelling. Figure 3 shows the correlation diagram between exogenous latent constructs for Perceived Usefulness (PU), Perceived Ease of Use (PE) and Religiosity (R). The correlation value between exogenous constructs are lower than 0.85. Therefore, no serious multicollinearity exists in the structural model. Figure 3 indicates all the factor loading of items are higher than 0.6 that indicates the structural model achieved unidimensional characteristic. The structural model also exhibits a reliable model with achieved all requirement for model fit indexes.

Table 5 shows standardized regression weight for structural model. The standardized beta estimates for X1 towards Y1 is 0.500. When Perceived Usefulness, X1 goes up by 1 standard deviation contributes to increment of 0.5 standard deviation in Y1 namely intention to implement 5S quality management. Next, when Perceived Ease of Use, X2 increase by 1 standard deviation creates increment of 0.434 standard deviation in Y1 for intention to implement 5S quality management. Then, one standard deviation in Religiosity, X3 creates increment of one standard deviation in endogenous latent construct namely intention to implement 5S.

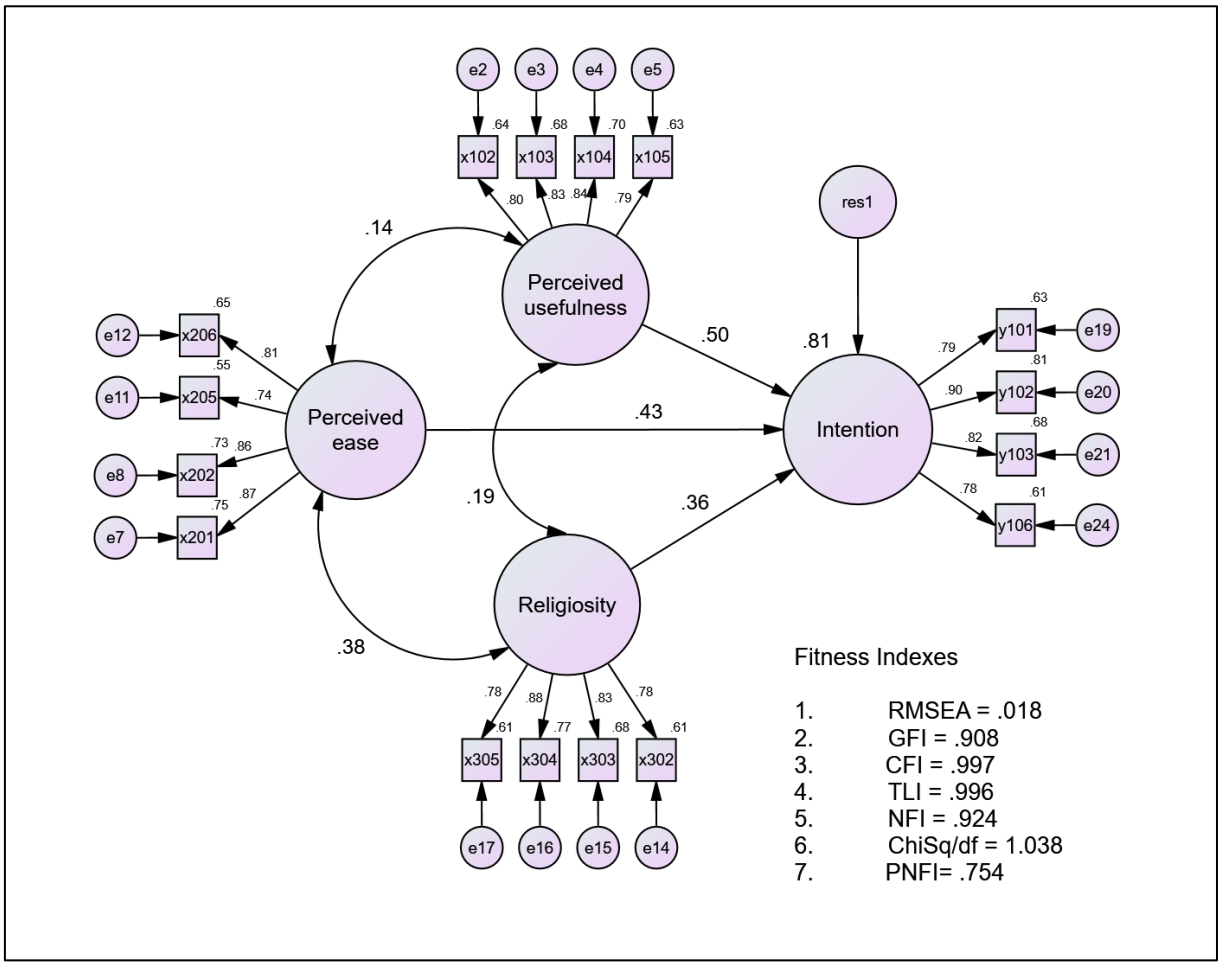

Figure 3. Structural equation modelling for path analysis of standardized regression

Table 5: Standardized regression weigh for structural model

Path (Start)	Direction	Path (End)	Standardized beta estimates
Perceived usefulness (PU), X1	⟶	Intention, Y1	0.500
Perceived Ease of Use (PE), X2	⟶	Intention, Y1	0.434
Religiosity (R), X3	⟶	Intention, Y1	0.357

4.4 Structural model for hypothesis testing using unstandardized estimates

This section describes the hypothesis testing for relationship between exogenous latent constructs and endogenous latent construct. This study shows the R-squared for regression model is 81% that is considered as good model of prediction. The value of R-squared shows 81 percentages of the variance in the dependent variable that is predictable from the independent. R-squared is a statistical measure of how close the data are to the fitted regression line. In this study, 81% of actual data are fitted to predicted regression line. The value of R-squared shows the structural model exhibits good model fit with actual data.

Figure 4 shows the unstandardized estimation of structural model. This study using unstandardized model to evaluate measurement error and hyphotesis testing. Figure 4 shows the measurement errors in this study are less than 0.50. Therefore, measurement error less than 1.0 is considered as reliable model. The all items in this study exhibits low error for reliable model.

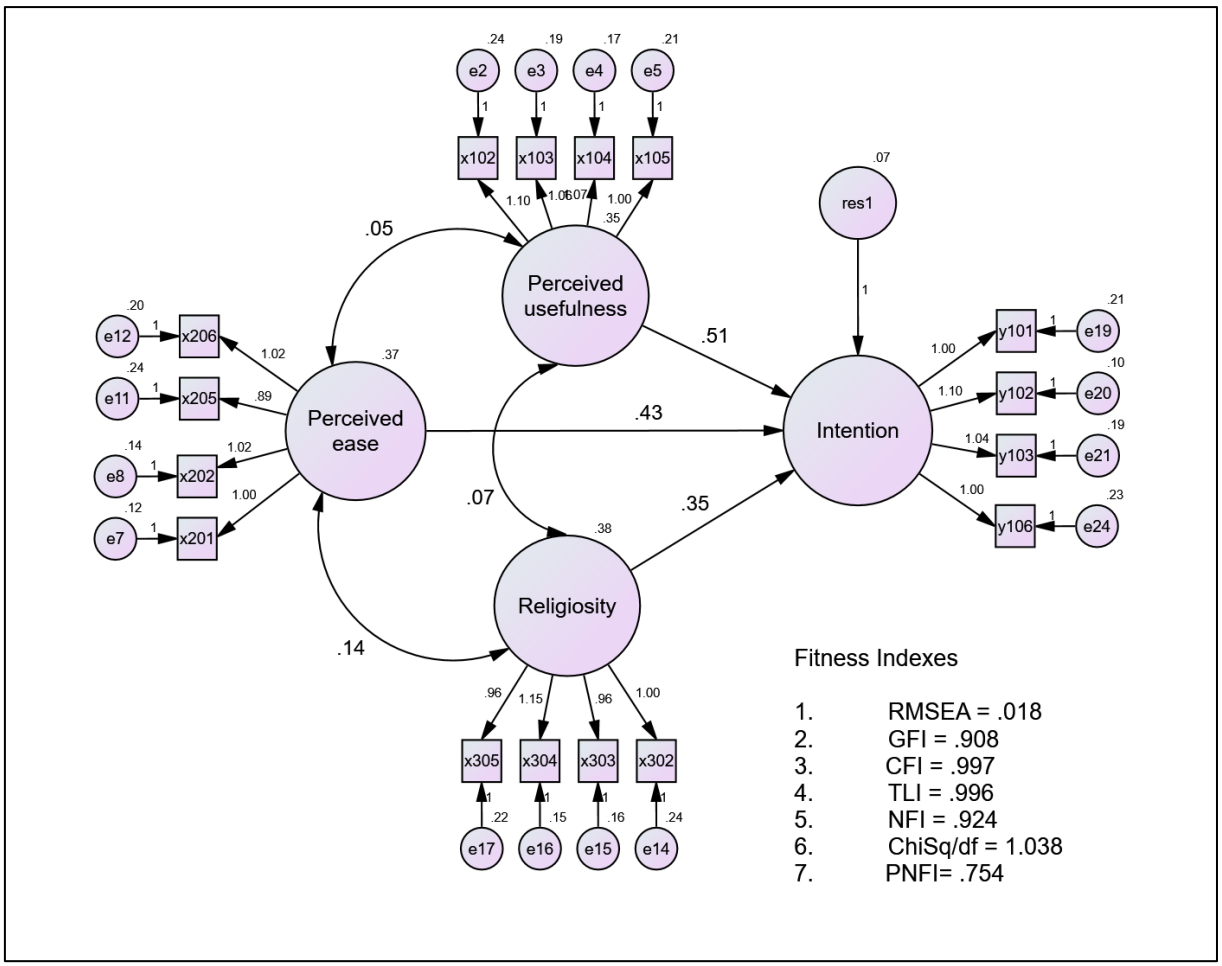

Figure 4. The unstandardized estimation of structural model

Table 6: Significant relationship analysis using unstandardized regression weight

Path (Start)	Direction	Path (End)	The actual beta values	Standard error (S.E.)	Critical Ratio (C.R.)	P-value
Perceived Usefulness (PU), X1	⟶	Intention (I), Y1	0.507	0.078	6.495	***
Perceived Ease of Use (PE), X2	⟶	Intention (I), Y1	0.433	0.074	5.890	***
Religiosity (R), X3	⟶	Intention (I), Y1	0.348	0.072	4.851	***

*** less than 0.001

Table 6 shows the significant relationship analysis using unstandardized regression weight. The value of actual beta for Perceived Usefulness (PU), X1 is 0.507. Therefore, when X1 goes up by 1 unit, Y1 goes up by 0.507 unit. The value of p-value is less than 0.001 for relationship between exogenous latent construct, X1 and endogenous latent construct, Y1. Therefore, the regression weight for X1 in the prediction of Y1 is significantly different from zero at the 0.001 level of two-tailed test.

Next, the value of actual beta for Perceived ease of Use (PE), X2 is 0.433. Therefore, when X2 goes up by 1 unit, Y1 goes up by 0.433 unit. The value of p-value is less than 0.001 for relationship between exogenous latent construct, X2 and endogenous latent construct, Y1. Therefore, the regression weight for X2 in the prediction of Y1 is significantly different from zero at the 0.001 level of two-tailed test.

Then, the value of actual beta for Religiosity (R), X3 is 0.348. Therefore, when X3 goes up by 1 unit, Y1 goes up by 0.348 unit. The value of p-value is less than 0.001 for relationship between exogenous latent construct, X3 and endogenous latent construct, Y1. Therefore, the regression weight for X3 in the prediction of Y1 is significantly different from zero at the 0.001 level of two-tailed test.

Table 7: Result of hypothesis testing

Hypothesis	Hypothesis statement	Result	Beta	P-value
H1	The Perceived Usefulness (PU) has positive and significant direct effect on the Intention (I) to implement 5S quality management	Supported	0.507	***
H2	The Perceived Ease of Use (PE) has positive and significant direct effect on the Intention (I) to implement 5S quality management	Supported	0.433	***
H3	The Religiosity (R) has positive and significant direct effect on the Intention (I) to implement 5S quality management	Supported	0.348	***

*** less than 0.001

Table 7 shows the result of hypothesis testing among exogenous latent constructs with endogenous latent construct. The exogenous latent constructs are Perceived Usefulness (Pu), Perceived Ease of use (PE) and Religiosity (R). Meanwhile, endogenous latent construct is Intention (I) to implement 5S quality management among students in higher education institutions. The result of first hypothesis (H1) indicates that the direct effect between Perceived Usefulness (PU) on Intention (I) to implement 5s quality management is supported. The beta value is positive 0.507 with probability value is less than 0.001.

Furthermore, the result of second hypothesis (H2) indicates that the direct effect between Perceived Ease of Use (PE) on Intention (I) to implement 5s quality management is supported. The beta value is positive 0.433 with probability value is less than 0.001.

Next, the result of third hypothesis (H3) indicates that the direct effect between Religiosity (R) on Intention (I) to implement 5s quality management is supported. The beta value is positive 0.348 with probability value is less than 0.001.

This study was supported by previous study (Hubert, et al., 2019; Marakarkandy, et al., 2017; Singh, et al., 2006) that used theory of acceptance model in their research. In addition, perceived ease of use (Rauniar, et al., 2014; Teo et al., 2011; David, 1989) and perceived usefulness (Ben Mansour, 2016; Slatten, 2012; Sheikhshoaei, and Oloumi, 2011) found to statistically significant. Study that used religiosity as one of the variable also found to be statistically significant (Amin, et al., 2014; Mokhlis, 2009; Abdullah and Abd-Majid, 2003).

5. Conclusion

The objective of this study is to evaluate the determinant factors for intention to implement 5S quality management among students in higher education institutions. The determinant factors are Perceived Usefulness (PU), Perceived Ease of Use (PE) and Religiosity (R). The This study using questionnaire development approach for latent constructs. Then, for data collection analysis is performed using structural equation modelling. The sampling procedure is using probability sampling methods namely stratified random sampling. The number of respondents is 120 students. The main findings of this study are:

(i) The measurement model achieved the requirement level for all three types of model fit indexes namely absolute fit, incremental fit and parsimonious fit. The absolute fit was measured using Root Mean Square Error of Approximation (RMSEA). The value of RMSEA is less than 0.08 that indicates measurement model indicates good model fit of the discrepancy between the hypothesized model, with optimally chosen parameter estimates, and the population covariance matrix. The incremental fit was measured using Comparative Fit Index (CFI). The value of CFI is larger than required level of 0.9 that indicates measurement model shows good incremental fit indices that compare the fit of a hypothesized model with that of a baseline model of a model with the worst fit. Next, this study evaluated parsimonious fit using Parsimony Normed Fit Index (PNFI). The value of PNFI is larger than required level of 0.5. Therefore, measurement model proved that simpler theoretical processes are favored over more complex ones.

(ii) The structural path analysis was evaluated using structural equation modelling. The relationship between three exogenous latent constructs with one endogenous latent construct were analyzed with maximum likelihood algorithm. This study indicates all of the exogenous variable have significant and positive effect to the endogenous latent construct. The Perceived Usefulness (PU) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.507 with probability value is less than 0.001. Next, the Perceived Ease of Use (PE) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.433 with probability value is less than 0. 001.Then, the Religiosity (R) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.348 with probability value is less than 0.001.

Acknowledgments

This work was supported by Institute for Management and Business Research (IMBRe) of Universiti Utara Malaysia (UUM) under research grant scheme "Development and Ecosystem Research Grant Scheme" SO code number 14249.

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