

# ASSESSING MEASUREMENT MODEL OF MALAYSIAN VOLUNTARY SAVING DECISION FOR FUTURE RETIREMENT USING CONFIRMATORY FACTOR ANALYSIS

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**Abstract:** *Advancement in healthcare and improvement in quality of life has significantly increase longevity of Malaysians. Unfortunately, Malaysian generally does not financially prepare for their future retirement. Insufficient saving for retirement among Malaysian to sustain retirement life becomes huge concern nowadays. Fewer past studies had been done to access voluntary saving decision among Malaysian working adult as this study aims to provide insight of factual findings for decision making and policy implementation. In order to solve the problem, we need to identify the indicators in order to measure voluntary saving behaviour and acting further steps to be taken to improve the behavior. This study was conducted to develop a scale to measure voluntary saving decision and testing the validation of the measurement using Confirmatory Factor Analysis (CFA). This study need to validate the measurement model of voluntary saving decision for its unidimensionality, validity, reliability and fitness indexes for model fitness. The result reveals that the measurement model of voluntary saving decision had achieved the requirement for construct validity and successfully developed which suitable to be used in future of research.*

**Keywords:** *Retirement Saving, Confirmatory Factor Analysis, Measurement Model, Malaysia*

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## Introduction

Advancement in healthcare and improvement in quality of life has significantly increase longevity of Malaysians. Malaysia is expected to experience the ageing population by 2050, which is a cause for concern as Malaysians commonly do not practice retirement savings behavior (Nga and Yeoh, 2018). Most Malaysian exhaust their retirement life savings within five years of retiring (Chin, 2015). In fact, 9 out of every 10 Malaysian households have no emergency savings besides having significant debts of their own (Ngu, 2016). Due to these issues, retirement savings is becoming increasingly relevant among Malaysia adults as part of their overall lifelong financial planning for retirement preparedness.

In terms of academic research, there are not much is known about retirement saving behavior particularly focusing on voluntary saving decision of Malaysians. Past empirical studies have mainly focus on more immediate relevant in the lives of young Malaysian adults such as credit card and internet banking. According to Asian Institute of Finance (2015), young Malaysian possessing poor financial knowledge and heavily financial indebted (Murugiah, 2016). Despite the increasing media and government initiatives to highlight the current acute shortfall in retirement savings amassed by most Malaysians, the fact remains that almost 70% of Malaysians have less than RM50,000 saved up for retirement over the course of their working lives (EPF, 2017; Chin, 2015).

Therefore, Malaysian generally does not financially prepare for their future retirement. Insufficient saving for retirement among Malaysian to sustain retirement life becomes huge concern nowadays. Fewer past studies had been done to access voluntary saving decision among Malaysian working adult as this study aims to provide insight of factual findings for decision making and policy implementation. In order to solve the problem, we need to identify the indicators in order to measure voluntary saving behavior and acting further steps to be taken to improve the behavior.

## Research Objective

The aim of this paper it to validate the measurement model of latent construct measuring voluntary saving decision for future retirement among Malaysian. This study would generate items to measure the construct in this study using an appropriate quantitative approach.

## Literature Review

Confirmatory Factor Analysis CFA is used for substantiating the factor loading and measurement involved in this study. CFA approach is a concern at two folds namely factor loadings and fitness indexes. In other words, the high factor loading is insufficient to be accepted as long as the fitness index fails to meet the requirement.

The assessment of fitness index comprised of three categories namely parsimonious fit, absolute fit and incremental fit. Although AMOS package serves numerous fitness but the researcher deserves to choose any fitness as long as the fitness chosen represent each category. This is in agreement with Afthanorhan (2013), the use of at least one fitness index from each category model fit. According to Awang et al. (2015), the particular latent construct is considered valid if its fitness indexes achieved the three Model Fit categories namely Absolute Fit ( $RMSEA < 0.08$ , Incremental Fit (CFI and TLI  $> 0.9$ ) and Parsimonious Fit ( $Chisq/df < 3.0$ ).

The measurement model of latent constructs needs to pass three types of validity namely Construct Validity, Convergent Validity, and Discriminant Validity (Mohamad et al., 2018). The Construct Validity is assessed through the Fitness Indexes of the Measurement Model, the Convergent Validity is assessed through computing the Average Variance Extracted (AVE), and Discriminant Validity is assessed through developing the Discriminant Validity Index Summary.

**Table 1: Types of Validity and its threshold**

Validity		Name of Category	Threshold	Sources
Construct Validity	Fitness Indexes	Absolute Fit Incremental Fit Parsimonious Fit	RMSEA <0.08 CFI & TLI>0.9 Chisq/df<3.0	Awang et al. 2015
Convergent Validity	Average Variance Extracted (AVE)		>0.5	Afthanorhan et al., 2018, 2019
Discriminant Validity	Discriminant Validity Index Summary			
Composite Reliability	CR		>0.6	Awang 2014, 2015

### Methodology

This study was applied a quantitative approach using cross sectional design. Research respondents were school teachers that located in the state of Kelantan, Malaysia. The sample was selected using simple random sampling while the sample size of 384 was determined by Hair et al. (2008) formula. Data was collected using ten responses interval scales questionnaires with 17 items to measure the main constructs named voluntary saving decision. The data was analyzed using structural equation modeling (SEM) approach by AMOS 22 software.

### Result and Discussion

Table 2 show the test to see the fitness of the model and also shows all the index categories which are construct validity.

**Table 2: Construct validity**

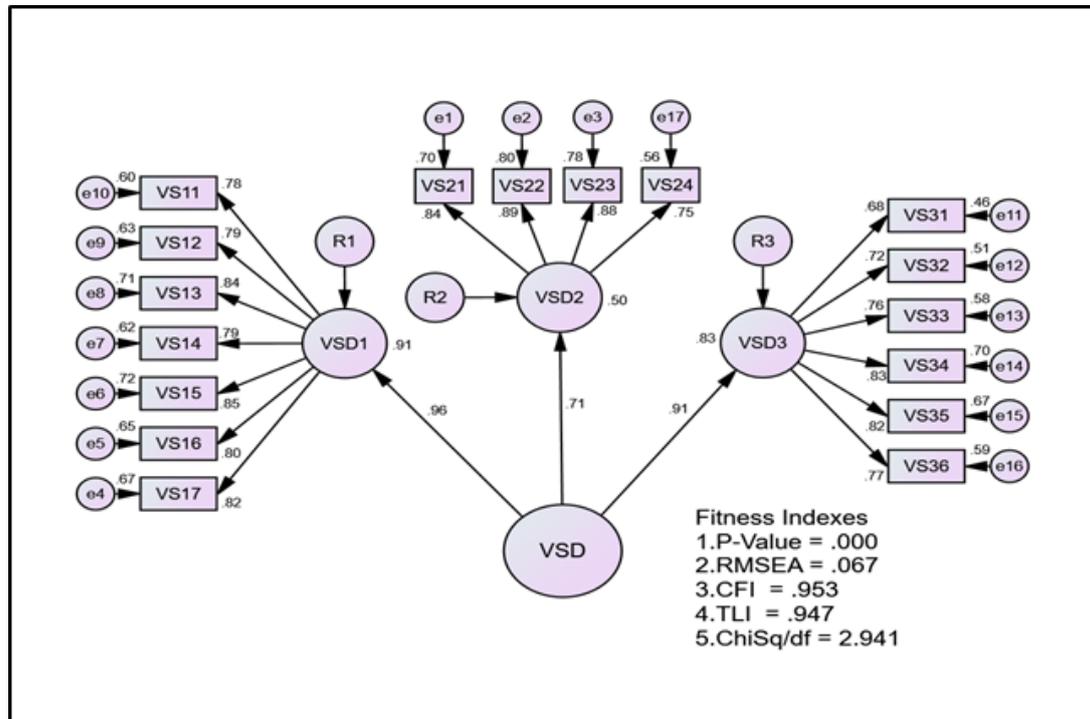
Construct Validity	Name of Category	Name of Index	Level of acceptance	Index Value	Comment
	Absolute Fit	RMSEA	< 0.08	0.067	Achieved
	Incremental Fit	CFI	>0.9	0.953	Achieved
	Parsimonious Fit	Chisq/df	< 3.0	2.941	Closed to 3.0
Thus, the measurement model of voluntary saving decision has achieved the requirement for Construct Validity					

The fit indexes shown the model was fit. Thus, the measurement model of Voluntary Saving Decision has achieved the requirement for Construct Validity.

**Table 3. Composite Reliability, convergent validity and discriminant validity**

Construct	Item	Factor Loading	CR (above 0.6)	AVE (above 0.5)	$\sqrt{\text{AVE}}$	Convergent Validity CR > AVE AVE > 0.5
VSD	VSD1	0.96	0.899	0.751	0.867	YES
	VSD2	0.71				
	VSD3	0.91				
VSD1	VS11	0.78	0.930	0.657	0.810	YES
	VS12	0.79				
	VS13	0.84				
	VS14	0.79				
	VS15	0.85				
	VS16	0.80				
	VS17	0.82				
VSD2	VS21	0.84	0.906	0.709	0.842	YES
	VS22	0.89				
	VS23	0.88				
	VS24	0.75				
VSD3	VS31	0.68	.894	0.585	0.765	YES
	VS32	0.72				
	VS33	0.76				
	VS34	0.83				
	VS35	0.82				
	VS36	0.77				

Table 3 is the result of the reliability and validity test for evaluating of the measurement mode. This table is performed well after meeting all the requirement of measurement model using CFA approach. The study shows that the reliability of CR meets the requirement, convergent validity as well as the discriminant validity.



**Figure 1: Final Model**

Figure 1 shows the final model summarize the arrangement of the items, factor loading and fitness index of voluntary saving decision construct. This measurement model can be proceeded for the structural model in the future research. The purpose of this paper is to develop a measurement model using confirmatory factor analysis (CFA).

### Conclusion

Overall, this study tries to explore the factor related to voluntary saving decision that contributes to equipping the Malaysian people willingness to save for a sustainable future retirement. Using CFA in SEM, we achieved the necessary fitness and the reliability and validity test to confirm our theory. This measurement model can be assessed for the future research so that the next study would be included in this model.

### Contribution of study

The paper also concludes the future research so that it can help the manager make a decision based on the findings. Besides, this paper is one of the most current researches suggesting validating the measurement item on voluntary saving decision in Malaysia. This latest research would be a key element driving potential researchers to attempt the voluntary saving decision research for the future research; in short, it can be a reliable source of information for researchers and practitioners.

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