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Validity and Reliability of On-line Shopping Behaviour Scale: Malaysian Context

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Abstract

The use of online platforms is gaining popularity as a tool for shopping. If this technology is not completely embraced, waste would occur because the government has spent a significant amount of money in completing the online buying technology infrastructure. Therefore, this study aims to identify the validity and reliability of the instrument to measure the acceptance of online platforms for shopping purposes. this study is a quantitative study with 280 data successfully collected. the instrument used is adapted from Theory of planned behavior. The findings of the study indicate that the research instrument has a good level of validity and reliability. The implications of the study findings are also discussed.

Introduction

Today's shopping trend has shifted to online shopping. this situation is exacerbated especially during the covid-19 season. during Covid19 outbreak, the Government enacted laws to ensure the safety of its people through a social imprisonment approach. Although the trend of online shopping is gaining attention, those who do not accept this technology still exist. Therefore, if this technology is not used optimally, then the investment made by the government to provide infrastructure related to online purchases will be in vain. Therefore, this study aims to identify the level of validity and reliability of online purchase acceptance instruments

Literature Review

Online shopping

Using an online shopping platform has a lot of benefits. One of them is that it can speed up, make life simpler, and more crucially, stop the transmission of the COVID-19 virus. Covid-19 transmission can be reduced if humans reduce face-to-face contact. Studies conducted by Chu et al (2020) have proven that social imprisonment is an effective method to reduce the risk of covid-19 virus transmission. Previous studies in the field of online shopping have been conducted in various aspects. A study by Ha & Stoel (2009) reveals that e-shopping quality determines perceptions of usefulness, trust, and enjoyment, which in turn influence consumers' attitudes toward e-shopping. While a longitudinal study by Limayem et al (2000) indicate that subjective norms, attitude, and beliefs concerning the consequences of online

shopping have significant effects on consumers' intentions to buy online. Another study by Forsythe et al (2006) reported the development of scales to measure the perceived benefits and risks associated with online shopping

Methodology

The objective of this study is to determine the level of validity and reliability of online shopping behaviour instrument. This study is a quantitative study and data were collected using non-probability sampling techniques. This technique was used because we were unable to obtain a sampling framework. The instruments used were borrowed from previous researchers to ensure the content validity. The instrument shall be first checked to ensure that any word found therein can be understood by the respondent. A total 280 data have been successfully collected. The data is then analysed using smartPLS software (Ringle et al., 2015).

Data Analysis

In order to measure reliability, we first examined the composite reliability, which is an appropriate measure of consistency in partial least square approach (Hair et al., 2014). We found that the composite reliability values surpassed the suggested 0.7 (Nunnally & Bernstein, 1994), and ranged from 0.81 to 0.95, suggesting that the measurements were sufficiently consistent (Gefen et al., 2003). In terms of construct validity, there are two distinct forms of construct validity which are convergent validity and discriminant validity. Factor loadings values surpassed the specified minimum of 0.5 thus conform the convergent validity (Hulland, 1999). These loadings ranged between 0.60 and 0.94, thus confirming convergent validity. However, 3 items have been eliminated due to low loading and this process is important in order to ensure that all items can be improved. For more evidence of convergent validity, the average variance extracted (AVE) were assessed and all construct met the minimum criterion of 0.5 (Bagozzi & Yi, 1988). To established the discriminant validity, we use the procedure adapted from Fornell & Larcker (1981) which indicates that the square roots of the AVE values of each construct is higher than the correlations between each construct. We thus conclude that, the discriminant validity for all construct was met. (See Table 2)

Table 1
Convergent Validity and Reliability

Construct	Items	Items loadings	AVE	CR
Attitude	Att1	0.73	0.52	0.81
	Att2	0.60		
	Att3	dropped*		
	Att4	0.74		
	Att5	0.80		
Subjective norm	Sn1	0.90	0.76	0.86
	Sn2	0.85		
	Sn3	dropped		
	Sn4	dropped		
Perceived behavioural control	Pbc1	0.67	0.61	0.88
	Pbc2	0.86		
	Pbc3	0.87		
	Pbc4	0.87		
	Pbc5	0.59		
Online shopping adoption	Int1	0.94	0.88	0.95
	Int2	0.93		
	Int3	0.94		

**Items dropped due to low loadings*

Further, it was necessary to assess the discriminant validity of the model to confirm that the constructs under study were distinct from each other. The authors analysed the correlations between the constructs on the one hand and the square roots of the AVE values on the other hand. Clearly, the Fornell and Larcker criterion was met as the square roots of each construct's AVE values were higher than the correlations between each construct and the other, therefore indicating that discriminant validity of the constructs was established.

Table 2
Discriminant validity

	Attitude	Subjective norm	online shopping adoption	perceived behavioural control
Attitude	**0.724**			
Subjective norm	0.439	**0.875**		
online shopping adoption	0.59	0.513	**0.941**	
perceived behavioural control	0.576	0.415	0.586	**0.785**

Discussion

As discussed in the literature review section, there are several previous studies that examine online shopping in various aspects. this study found that the findings of this study have a high level of validity and reliability. This findings are inline with the findings of a previous study. For example, a study conducted by Hsu et al. (2006) in the context of online shopping also found that TPB instrument has a high level of validity and reliability. Apart from these findings, there are several other studies that have tested TPB instruments in various contexts. such as online shopping intention (Delafrooz et al., 2011), online grocery shopping behavior (Brand et al., 2020), consumer online shopping behaviour (Ariff et al., 2014), online purchase intention (Le-Hoang, 2020), mobile online shopping adoption (Zhong, 2013). The findings of this study will help future researchers in building instruments to study the acceptance of technology. TPB instruments have always been tested for their effectiveness. This study indirectly contributes to the proof of validity and reliability of TPB instruments. Finally, a few significant limitations must be taken into account. First the data of this study is only 280 respondents, future studies need to get more data based on the exact effect size. Second, this study only uses the traditional TPB variables, the next study should add some new variables into the TPB model.

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