

Reliability and Validity of Instruments Measuring Individual Lifestyle Scale



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Abstract: *This paper aims to identify the individual lifestyle measurement (validity and reliability) based on three types of online shoppers' lifestyle factors; time-oriented lifestyle, price oriented lifestyle and net oriented lifestyle. The selected respondents of this study are online shoppers who have purchased products and services at online shopping website. The data was carried out via mall intercept technique. Result of the study shows that 15 items of online shoppers' lifestyle scales were grouped into three distinct constructs. This constructs represented three types of online shopper's lifestyle. Findings of this study will benefit to online sellers in order to develop marketing strategy regarding individuals' lifestyle factors, especially to those who focusing on the online shopping context.*

Keywords: *Individuals' Lifestyles, Online Shopping.*

I. INTRODUCTION

The development of Internet technology has changed an important aspect of networked life variously called online, virtual or digital communities to express people's experiences, thoughts and ideas (McKenna & Vodanovich, 2016) and to explore online activities such as communication, building economic and social exchange and sharing online communities (Lissitsa & Chachashvili-Bolotin, 2016). In addition, the internet has become a pervasive domain that become an ever increasing part people lifestyle. This statement is supported by Ahmad (2014) who stated that the Internet significantly impacted changing in people lifestyle regarding their work, live and learn. Among the critical change in individual lifestyle is related to their online purchasing behaviours. Since 1990s, most of the people trapped in electronic commerce Gim (2014), it provided broader selection of opportunities, greater access of information and 7/24 online store accessing (Ozen & Engizek, 2014). Due to these kind of benefits, people lifestyle has change, particularly for consumers. Moreover, there are some of the consumers seeking for online purchasing due to the cheaper price Saidi (2016), internet skill Ong, Chong, and Tham (2014) and time saving (Fong, 2013). Hence, there are many researchers has given their intention to study consumers' lifestyle that related to many important issues.

Previous consumers' lifestyle studies mostly concentrated to behaviours in decision making process (Atcharyachanvanich & Hitoshi, 2007; D. J. Kim, B. Cho, & H. R. Rao, 2000), purchasing intention (Y. C. Cho & Sagynov, 2015; Yeo, Goh, & Rezaei, 2017), repurchase intention (Ahmad, 2014; Mohamed, Hussein, Hidayah Ahmad Zamzuri, & Haghshenas, 2014) and loyalty (Pandey & Chawla, 2016). However, there are limited studies validate the lifestyle measurement, especially, those related to consumers' lifestyle (Ahmad, 2014).

Previous scholars have developed few measurement of lifestyle. For instance, W.D. Wells and Tigert (1971) measured lifestyle through consumers' activities, interest and opinion, while, Veal (1993) classifies lifestyle as an individual pattern of personal and social behaviour characteristic. However, previous researchers have argued that existing lifestyle measurements is general to the concept of individual living pattern and only connected to the various social classes with environment (Bei, 2000), and not specific to the current changing in time oriented and technology oriented (Swinyard & Smith, 2003) especially, for the online market. In facts, some of the previous scholars asserted that people lifestyle has change to the wired lifestyle as they are spend more money online (Swaminathan, Lepkowska-White, & Rao, 1999), engaged to the latest communication technology and spend many hours online (Lin, 2007).

Therefore, considering to the gaps mentioned above, this paper aim to access the validity and reliability of the individuals' lifestyle measurement, with regard to the specific individuals' lifestyle which is online shoppers' lifestyle measurement. Accordingly, the following section presents the review of the literature on consumer lifestyles followed by the methodology employed. The findings are discussed next followed by the summary and conclusions of the findings.

II. LITERATURE REVIEW

Individual Lifestyle

The emergence of the Internet and Internet technology development has change the consumer purchasing behaviours and their lifestyle respectively. As the consequences, many scholars have begun their research to examine the effect of consumer lifestyle towards online shoppers' purchasing behaviours. For example, Mowen (1988) observed consumers' decision making by exploring consumers' lifestyle as the way people live, spend money and allocate time. Similarly, Bellman, Lohse, and Johnson

Revised Manuscript Received on October 30, 2019.

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(1999) examined factors that affected online purchasing behaviours and found that consumers who spend more money online has a weird lifestyle and has high tendency to purchase online more, due to the time constrains. Moreover, D. J. Kim et al. (2000) investigated the effect of consumer's lifestyle on online purchasing behaviour. The authors found that, lifestyle has a significant relationship with online purchasing behaviour. In a more recent study, Ahmad, Omar, and Ramayah (2010) and Mohamed et al. (2014) has extended their study to explore the effect of lifestyle towards post purchase behaviours. Both study found direct and indirect relationship between consumers' lifestyle and repurchase intention behaviour.

Individuals' lifestyle has found as one of the important determinant to predict online purchasing behaviours. This is because lifestyle played an important role to support consumers' demographic in order to explained and differentiated behaviour formation process and lifestyle also have been proved to be one of the strongest predictors in influencing consumers' behaviours (Weiß, 2015), especially for online shopping behaviours (Mohamed et al., 2014). Consumers become more technology savvy due to the advancement of technology and knowledge improvement (Ong et al., 2014), as the result, people surf the Internet in a long period of time, seeking for change and improvement for better service and product (Ahmad, 2014). According to E-commerce Foundation 2016 survey, the Asian Pacific consumers was reported as the highest score for expenses spent for online shopping. This statement is supported by Bain and Company (2017) who stated that online shoppers for Southeast Asia market reported spending an average of \$15 billion. This survey clearly showed that people nowadays have grown a unique way in their lifestyle by making online shopping a daily routine. As mentioned by previous scholars, Mohamed et al. (2014) stated that online shopping present alternative means for consumers. In online shopping context, D. J. Kim et al. (2000) define lifestyle as how people live, spend money in purchasing and allocate time for their purchasing. In addition, it has been asserted by the previous researchers that, different lifestyle created different pattern of online shopping behaviours (Swaminathan et al., 1999). Therefore, online shoppers' lifestyle may be varied according to their daily lived routine, time spending and money allocating for online purchasing.

Measurement of Lifestyles

Previous researchers provided inconsistency findings regarding the measurement of lifestyle (Ahmad, 2014; Mayne, Deborah, & Pieter, 2012; Mohamed et al., 2014; Mowen, 2000; Plummer, 1974; W.D. Wells & Tigert, 1971). Early scholar, Plummer (1974) measured lifestyle with the element of activities, opinions and demographic variables. Meanwhile William D Wells and David (1996) measured people's lifestyle through their activities, interest and opinion, which is developed from an individual culture, values, demographic profile and personality. Moreover, Bei (2000) applied two methods in order to measure lifestyle; general lifestyle and specific lifestyle. The author also mentioned that general lifestyle referred to individual activities, interests and opinions, while specific lifestyle referred to individual response pertaining to a particular

product and services. This study highlighted on the individual lifestyle of online shoppers, therefore, specific lifestyle measurement has been applied where it is compatible with the market segmentation, online shoppers' purchasing behaviors. For purchase decision making where the market segmentation was consumers, Mowen (1988) quoted that consumers lifestyle as the way people live, spend money and allocate time. Moreover, the measurement of individual's lifestyle has been adapted into online shopping context. D. J. Kim et al. (2000) has grouped individuals' lifestyle into oriented style where; price-oriented style referred to the online shoppers who concern with good and service on the internet with cheaper prices; net-oriented style referred to the online shoppers who have been on the internet for years; time-oriented style referred to the time consumed by online shoppers to purchasing online. These measurement has been applied in variety context of the study especially for those who focusing on online consumers purchasing behaviours (Atcharyachanvanich & Hitoshi, 2007; D.-S. Cho, Reid, & Lee, 2017; Mohamed et al., 2014; Yeo et al., 2017). Therefore, it can be concluded that lifestyle is founded from the practicalities of human life, its consistency over time and the monetary leading towards attaining desired goals. Hence, lifestyle can be described as orientation-directed habits. Thus, due to the specific market segmentation which is online shoppers in Malaysia, the authors defines individual lifestyle as how people live, how they allocate their time and how they spend money on online purchasing.

Time-Oriented Lifestyle, Net-Oriented Lifestyle, Price-Oriented Lifestyle

In online shopping context, lifestyle is measure with three style; time-oriented lifestyle, net-oriented lifestyle and price-oriented lifestyle. This measurement was compatible with previous study where lifestyle has been defining as how individual live, spend money and allocate time for purchasing decision (Mowen, 1988). The items for every elements were adapted from previous scholars who has been applied the same concept of lifestyle (Hoa, 2014; D. J. Kim et al., 2000; Usunier & Valette-Florence, 1994). Time oriented lifestyle and net-oriented lifestyle consists of five items measurement respectively, while price-oriented lifestyle consists of six items measurement.

III. RESEARCH METHODOLOGY

The selected respondents of this study is individual online shoppers who shop at the famous marketplace and e-commerce website in Malaysia. This study applied multistage sampling, where the population is derived from the Internet user in Malaysia. The first stage is cluster sampling, where the samples have been clustered into four regions in Malaysia; Northern, Southern, East Coast and Central. The second stage is systematic sampling. In addition, the data were collected by using mall intercept technique via enumerators. A total of 388 out of 576 selected online shoppers has complete the survey, implying



a response rate of 67.36%. For data analysis and hypotheses testing, this study applied Partial Least Square, Structural Equation Model (PLS-SEM). Moreover, the items measurement was altered from the earlier scholars who applied individuals' lifestyle in online purchasing context (Hoa, 2014; D. Kim, B. Cho, & H. R. Rao, 2000; Usunier & Valette-Florence, 1994). The total items are 16 and the questionnaires has five-point Likert scale.

IV. RESULTS AND FINDINGS

Sample Characteristics

Based on the results of the analysis, majority of the respondents were female respondents (72.7 %). Moreover, for the level of education, the highest scores are among respondents' with Bachelor and Diploma's degree, which are 42.8% and 28.4% respectively. With regards to age, respondent among age of 20 to 29 years old and 30 to 39 years old reported as the majority of the respondents, with the total of 49.2% and 27.8% respectively. Another personal information has been examined is the monthly income of the respondents. Based on the result, most of the respondents earning salary in the range of RM2501 and RM5000 (34.3%). In terms of ethnic group, the Malays recorded as the highest ethnic group of respondents with 91.5%. For the division of the respondents, central reported as the highest number of respondent located with 37.4%, followed by northern represent 25.5%, southern with 19.1% and east coast with 18%. This study also found that the majority of the respondents used LAZADA website to shop online (41%). Furthermore, for the Internet usage information, majority of the respondents used the Internet for more than five years and most of them spent time online for five hours per day. Furthermore, there are 35.6% of the respondents' shop online a few times a month and they are surfing the internet for the purpose of information search (58.5%), social communication (55.2%), entertainment (47.2%), working (42.3%), purchasing (38.9%) and studying (21.9%).

Testing the Goodness of Measure for the Lifestyle Construct

In this study, measurement model analysis is performed using PLS Algorithm function in SmartPLS 3.2.8 software (Ringle, Wende, & Becker, 2015) to evaluate construct reliability and validity. From the literature review, all of the constructs in this study applied reflective measurement model. Reflective measurement model analysis includes the assessment; i) composite reliability (CR) to indicate internal consistency, ii) outer loadings to specify individual indicator reliability, iii) average variance extracted (AVE) to accomplish convergent validity, and iv) discriminant validity through cross-loadings, Fornell-Larcker criterion, and Heterotrait-Monotrait (HTMT) ratio.

a. Internal consistency

Table 1 shows that all constructs have passed the internal consistency reliability based on both CA and CR values. CA values of above .70 are considered adequate (Nunnally, 1978) and above .80 are preferable (DeVellis, 2003). Meanwhile, CR values of at least .70 are considered as satisfactory (Hair, Hult, Ringle, & Sarstedt, 2017). All CA

and CR readings in Table 1 have shown values beyond these threshold, hence all constructs have been reliably measured.

b. Factor Loading

Byrne et al. (2016) indicated that the outer loading more than .50 considered adequate for indicator reliability. Majority of items are also exceeding the minimum threshold for factor loading. However, one item for time-oriented lifestyle exhibit values below 0.500, therefore, item LTO4 consider to be deleted.

c. Average Variance Extracted

Table 1 shows that all constructs have passed the convergent validity assessment by demonstrating AVE values ranging from 0.597 to 0.638. The minimum requirement for AVE value is .50 (Fornell & Larcker, 1981b; Gefen, Straub, & Boudreau, 2000).

Table. 1 Summary of internal consistency and convergent validity

CONSTRUCT	ITEMS	LOADING	CA	CR	AVE
TIME ORIENTED	LTO1	0.836			
	LTO2	0.851	0.771	0.854	0.597
	LTO3	0.689			
	LTO5	0.700			
	LTO4	0.485			
NET ORIENTED	LNO6	0.739	0.836	0.884	0.605
	LNO7	0.722			
	LNO8	0.807			
	LNO9	0.847			
	LNO10	0.767			
PRICE ORIENTED	LPO11	0.725			
	LPO12	0.818	0.886	0.914	0.638
	LPO13	0.829			
	LPO14	0.823			
	LPO15	0.844			
	LPO16	0.748			

d. Discriminant validity

The lifestyle construct is further access by the discriminant validity. Three (3) types of test are involved in assessing the discriminant validity namely; i) cross-loadings comparison ii) Fornell and Larcker (1981b) and iii) HTMT ratio. Cross-loadings refer to an indicator's (i.e. item's) correlations with other constructs in the model. Therefore, for cross loading, indicator's (i.e. item's) outer loading on the associated construct must be greater than any of its cross-loadings on other construct (Hair et al., 2017; Hair Jr, Wolfenbarger, Money, Samouel, & Page, 2015).

Reliability and Validity of Instruments Measuring Individual Lifestyle Scale

Table. 2 Results of Cross loading test

ITEMS/CONSTRU CT	LTO	LNO	LPO
LTO1	0.836	0.479	0.494
LTO2	0.851	0.537	0.556
LTO3	0.689	0.424	0.438
LTO5	0.700	0.446	0.351
LNO6	0.379	0.739	0.431
LNO7	0.293	0.722	0.383
LNO8	0.520	0.807	0.526
LNO9	0.620	0.847	0.606
LNO10	0.572	0.767	0.611
LPO11	0.510	0.561	0.725
LPO12	0.448	0.489	0.818
LPO13	0.463	0.470	0.829
LPO14	0.483	0.527	0.823
LPO15	0.523	0.612	0.844
LPO16	0.435	0.427	0.748

As can be seen in Table 2, the outer loading values are always exceeding the cross-loading values, thus indicate discriminant validity between all constructs in the model have been established.

Next, the second approach to specify discriminant validity is the Fornell-Larcker criterion (Fornell & Larcker, 1981a). Fornell-Larcker criterion is a measure of discriminant validity that compares the square root of each construct's AVE with its correlations with all other constructs in the model. It means a construct must share more variance with its associated indicators (i.e. items) than with any other construct (Fornell & Larcker, 1981a; Hair Jr, Hult, Ringle, & Sarstedt, 2016). Result from the Table 2 shows that all construct passes the Fornell and Larcker criteria. Thus, it indicates that there is no discriminant validity issue.

Table. 2 Results of Fornell and Larcker test

CONSTRUCT	LNO	LPO	LTO
LNO	0.778		
LPO	0.660	0.799	
LTO	0.618	0.601	0.772

Recent criticism on the cross-loadings approach and Fornell-Larcker criterion to examine a lack of discriminant validity under several circumstances have led to the suggestion of using HTMT ratio to assess discriminant validity (Hair Jr, Hult, Ringle, & Sarstedt, 2017; Henseler, Ringle, & Sarstedt, 2015). HTMT is the ratio of the between-trait correlations to the within-trait correlations. As such, this study also tests discriminant validity using this newly proposed method and the results are shown in Table 3.

Table. 3 Results of HTMT ratio test

CONSTRUCT	LNO	LPO	LTO
LNO			
LPO	0.757		
LTO	0.765	0.718	

HTMT value that is greater than .85 (Kline, 2011) or .90 (Gold, Arvind, & Segars, 2001), indicates a problem of discriminant validity. Table 4.11 shows that majority of the values are below .85, while only satisfaction value is below .90. Hence, it is confirmed that there is no discriminant validity problem between all constructs for individual lifestyle variables.

V. DISCUSSIONS AND CONCLUSION

As a conclusion, examining the validity and reliability of a measurement is crucial for researchers since misinterpretation could cause invalid findings. This study is therefore aims to test individual lifestyle scale in the Malaysian context. The construct was adapted from the previous scholar around the world, hence, the total items adapted are 16 items. The 16 items reflected the three types of online shoppers' lifestyle which are; price-oriented lifestyle, net-oriented lifestyle and time-oriented lifestyle. The constructs are tested with composite reliability, factors loading, AVE, cross-loadings, Fornell-Larcker criterion, and Heterotrait-Monotrait (HTMT) ratio. Based on the results tested, one items for time-oriented lifestyle was excluded (LTO4), which resulted 15 items left. The 15 items are capable for explaining the construct. Preliminary results demonstrated a valid and reliable scales for measuring online shoppers' lifestyle.

There are few limitations occur in the present study. Initially, for the purpose of the sampling technique, the multistage cluster sampling was used. This technique is used to cover the population of online shoppers in Malaysia where the sampling frame is not available (Zainudin, 2012). The cluster sampling is applied as the size of Malaysian online shopper's population during period of research cannot be easily ascertained and the sampling frame is not relevant. Hence, this study only focuses on online shoppers. Future research could select respondents from all demographics' distribution of the Malaysian population to get a better result for individuals' lifestyle factors, especially regarding on its measurement (validity and reliability). Furthermore, most of the previous scholars tend to focusing on the effect of individual' lifestyle on initial use of internet and intention to purchase. However, the study regarding the effect of individuals' lifestyle factors and its relationships on post purchase behaviour are still underestimated. In addition, future research also can develop a study in individual' lifestyle in other online services context, which have been not comprehensively examined. Future research are suggested to test the individual' lifestyle scale to different fields such as e-banking, e-learning, m-shopping.



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