Baby Boomers Purchase Intention of Healthcare Products Using Mobile Phone

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Abstract

The use of smartphones or mobile phones allows anyone to do online shopping. In Malaysia, there are many online consumers, and these consumers are from different cohort generations. Consumers from different age groups shop for different products for their daily needs. Extant online literature found that consumers use utilitarian shopping value and electronic word of mouth (eWOM) before purchasing. Furthermore, personal innovativeness contributes to the propensity of consumers to make online purchases. This study used the Stimulus-Organism-Response (S-O-R) framework to test the model. A quantitative approach is applied in this study, using the data of a self-conducted online questionnaire. A total of 198 valid questionnaires were used for analysis. Structural Equation Modelling (SEM) was used to analyse the data. Personal innovativeness was the primary factor influencing online purchase intention of healthcare products followed by electronic word of mouth and utilitarian shopping value.

Keywords: baby boomers, electronic word of mouth, Malaysia, online purchase intention, personal innovativeness, utilitarian shopping value

1.0   Introduction

Today, there are many changes in the retail experience of consumers. One of the changes impacting online purchases is mobile shopping. By using mobile shopping, consumers can shop at any time or day using their smartphones (Ghazali, Mutum, Chong, & Nguyen, 2018). Online shopping provides a seamless interaction channel. The use of online shopping does not define the time, location of the users, and the people. Thus, mobile shopping offers many benefits to

consumers. The benefits of using online shopping include more convenience and faster access to information. In addition, the customers can quickly make a comparison between different products.

Today, Malaysia's global internet growth usage is rising, and many Malaysians prefer to use a smartphone. Currently, Malaysia has a 93.1% smartphone penetration of the internet market. The percentage of online shopping in Malaysia rose from 48.8% in 2016 to 53.3% in 2018. Similarly, the internet users aged 50 years old and above rose from 8.4% in 2016 to 18.1% in 2018 (MCMC, 2018). Smartphones or mobile phones are the most common device used by Malaysians to access the Internet. Due to the increase in smartphones, sales via online platform companies increase every year (MCMC, 2018). According to the Malaysian Digital Economy Blueprint (2021), 90.1% of Malaysian households have an internet connection, with 135.4% having mobile cellular penetration.

The increasing usage of online shopping provides a new opportunity for online companies to utilise their mobile platforms for communications and to understand their customers. In The Truth About Online Consumers: 2017 Global Online Consumer Report (2017), globally, consumers from Asian nations are at the forefront of the average number of transactions (per person per year) with 22.1 transactions annually. Furthermore, the statistics showed that Generation X is the most frequent group for online shopping, and they shop the most at 18.6 times compared to other generations (KPMG, 2017). Meanwhile, baby boomers and millennials stated an average of 15.1 times and 15.6 times annually, respectively. Among the products sold online, the purchase of healthcare products is the most popular for the age category above 50 years old. Those within this age group made almost 75% of total spending on healthcare products. The average amount spent per transaction for baby boomers is US$203 while Generation X and Millennials spent US$190 and US$173, respectively. Hence, the increasing presence of the baby boomer age group and their propensity to spend on healthcare products should not be neglected by these online companies selling healthcare products.

Theories utilised in previous research for mobile shopping include Technology Acceptance Models (TAM) (Davis, 1989) and Theory of Planned Behavior (TPB) (Ajzen, 1991) (Ghazali et al., 2018). Models such as diffusion of innovation (Rogers, 1995) and Unified Theory of Acceptance and Use of Technology (UTAUT) are found in online shopping studies (Venkatesh, Morris, Davis, & Davis, 2003). A

review of extant literature found that many constructs were added to the existing models. Constructs such as compatibility, convenience, and connectivity are used. Similarly, perceived enjoyment, facilitating conditions, perceived risks, and trust were added to the extended models (Wong, Tan, Ooi, & Lin, 2015).

However, several online shopping research employs the S-O-R framework (Laroche, 2010). Various studies in predicting behavioural intention have based their model on the S-O-R model. Several factors such as reputation, website quality, consumer emotion, and perceived risk were analysed (Kamalul Ariffin, Mohan, & Goh, 2018), (Kim & Lennon, 2013). Despite the advantages of mobile shopping, many factors contribute to consumers' online purchase intention. However, even though there is a growing literature on mobile shopping in Malaysia, there is a need to understand factors that influence baby boomers' purchase intentions for healthcare products in Malaysia.

1.1 Online Shopping in Malaysia

Online shopping in Malaysia is increasing due to an extensive internet network and the growth of internet subscribers within the country. Malaysian internet users grew from 76.9% in 2016 to 87.4% in 2018 (MCMC, 2018). In 2020, the mobile broadband penetration rate for every 100 consumers in Malaysia is 118.7%. This shows that the number of mobile broadband users through their mobile phones is increasing as reported by the Malaysian Communication and Multimedia commissions (2020). The Malaysia Digital Economy Blueprint Report (2021) shows that the total e-commerce market value in 2019 was RM16 billion. This indicates the increase in online shopping among Malaysian consumers. Online platform companies must also cater to the increase in online shopping and meet the different demands of different groups of online consumers.

2.0 Literature Review

2.1 Underpinning theory - Stimuli-Organism-Response (S-O-R)

The S-O-R framework began in environmental psychology. The framework postulates that environmental stimuli(S) lead to the emotional reactions of the organism(O), which in turn drives behavioural response (R) (Russell & Mehrabian, 1974). By using the S-O-R framework in marketing research, studies have examined customers' responses to two stimuli, which are situational and

environmental (Calvo-porral & Lévy-mangin, 2018). One of the first studies to apply this framework was a study examining the impact of store atmosphere. The study was conducted to find the relationship between the store atmosphere on consumers' perceptions and behaviour. Results showed that the physical environment influences pleasurable retail outcomes (Donovan & Rossiter, 1982). Previous studies also show that the S-O-R framework provides theoretical support and application in consumer behaviour studies. The SOR model is reflected in the use of the variable utilitarian shopping value, personal innovativeness, and eWOM which are the stimuli, and purchase intention which is the behavioural response in the S-O-R framework. The physical environment is now an online platform for the purchase of healthcare products.

2.2 Purchase Intention of Healthcare Products

A consumer's buying intention motivates him to perform better to achieve what he wants (Chia et al., 2016), and the purchase intention is a projection of consumer behaviour. Other researchers have highlighted that the cognitive components include the consumers' knowledge and beliefs about the product affect purchase intention. Meanwhile, the affective component is made up of the product's emotions and sentiments (Fishbein & Ajzen, 1975), which also influences consumer purchase intention.

Digital technology assists retailing from having a physical store to online shopping. Furthermore, the Internet is a viable option for consumers. Consumers have easy access to information and social media (Shaheen, Cheng, & Lee, 2012). Consumers' intention to buy products and services over the Internet is known as online purchase intention (Close & Kukar-kinney, 2010). In addition, the intention to shop online is an important predictor of actual purchasing behaviour. The consumers' willingness to complete a purchase transaction using virtual storefronts is reflected in online shopping (Chen, Hsu, & Lin, 2010).

2.3 Utilitarian Shopping Value towards Purchase Intention of Healthcare Products using Mobile Phone

Delafrooz, Paim, & Khatibi (2011) found that online shopping is driven by utilitarian shopping value. For example, some consumers satisfy their needs for products depending on financial promotions, fast

retail experience or timely task completion, which are the characteristics of utilitarian shopping value.

Utilitarian shopping value leads to customer satisfaction when used to shopping online (Scarpi, 2012). Meanwhile, studies showed that satisfaction is related to utilitarian value (Vieira, Santini, & Araujo, 2018). Factors that could lead to higher utilitarian values include good value for money and convenience. Other utilitarian factors such as broad selection and availability, information availability, and customised products have also been used (Deng, Lu, Kee, & Zhang, 2010). Many studies supported these factors, and the convenience factor significantly influences online shopping (Izquierdo-Yusta & Newell, 2011). Product information is another vital factor in online shopping (Kaur & Khanam Quareshi, 2015). In measuring utilitarian value, the following five factors were found to be crucial that include information available, accessibility, product availability, searchability, and convenience (Kumar & Kashyap, 2018).

Jiang et al. (2013) identified five dimensions of online shopping convenience, which are access, search, evaluation, transaction, and possession/post-purchase convenience. A study conducted by Jiang et al. (2013) found that online shopping convenience directly influences information availability, accessibility, and product availability via online shopping. However, in this study, the element of searchability is removed. This is due to the engagement of customers in being on the website for an extended period to find their desired product (Kumar & Kashyap, 2018).

2.4 Personal Innovativeness Towards Purchase Intention of Healthcare Products using Mobile Phone

The role of personal innovativeness has also been studied in a proliferation of recent studies on online platforms. These studies include mobile payment (Patil, Tamilmani, Rana, & Raghavan, 2020), user continuance intention in mobile commerce (Lu, 2014), and intention to use mobile shopping apps (Natarajan, Balasubramanian, & Kasilingam, 2017). Each customer has a different approach to adopting new technologies (Nov & Ye, 2009). Innovativeness relates to the degree to which an individual adopts a new technology than other members of a social system (Rogers, 2003).

Personal innovativeness has been studied in a wide array of behavioural science research ranging from information technology adoption (Rogers, 2003) to the adoption of mobile learning (Cheng,

2013). The consensus of the studies agrees that personal innovativeness refers to the "degree a person is predisposed towards the use of new technologies and an inherent innovative personality concerning new technologies". Thus, a person with a high level of personal innovativeness develops more positive beliefs about the availability of new technologies. Thus, this study focuses on baby boomers to determine if they can purchase health products using their mobile phones.

2.5   Electronic Word of Mouth (eWOM)

The omnipresence of the Internet saw the rise of internet-based communications called eWOM (Prasad, Gupta, & Totala, 2017). eWOM can be "defined" as any statement made by potential or future customers. These statements could be positively or negatively on specific products or companies. The statements are then made available to many people and institutes via the Internet (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004). Product reviews posted by consumers online are one of the most appropriate ways for eWOM communication. One study found that consumers increasingly seek online product reviews in pre-purchase information search (Adjei, Noble, & Noble, 2010). In addition, "consumers perceive eWOM communications more credible in comparison with traditional media" (Ismagilova, Slade, Rana, & Dwivedi, 2020).

2.6   Baby Boomers

A group of people born between 1946 and 1964 are baby boomers (Dinkins, 1993). This category of people can be divided into two categories namely early baby boomers (1946-1954) and late baby boomers (1955-1964). These two categories do not have a consensus among behavioural researchers and scholars. Therefore, there exist several subdivisions to categorise baby boomers (Rahman & Yu, 2018). Thus, baby boomers are born from 1946 to 1994 (26 to 74 years old) for this study.

Baby-boomers spending patterns evolve as they age. Buying consumption indicates baby boomers' buying behaviour changed from purchasing family goods to personal goods. The reason for this change is due to retirement and an "empty nest" (Wray & Hodges, 2008) (Moschis, Ferguson, & Meng, 2011). Besides buying personal needs products, healthcare and supplement products are the category

whereby baby boomers buy the most (Young & Tinker, 2017). This finding is similar to several studies that found one of the critical drivers of global consumption is health and wellness products (Business Lab, 2012). In addition, the changing retail environment has seen an increase in mobile phone apps that support health and fitness initiatives. These health apps can monitor calories, heart rate, and steps and provide access to purchase healthcare products online. Therefore, the mobile phone is another tool that the baby boomers cannot live without *(*Gretton & Honeyman, 2016*).* The proposed model examines the direct influence of the three factors used in this study for the baby-boomers age cohort. Figure 1 is the proposed model for this study.
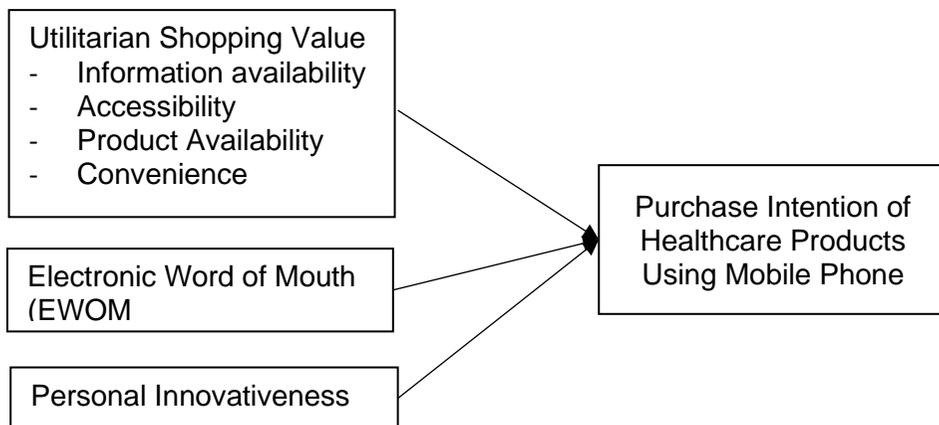

Figure 1 : Proposed Model

3.0   Methodology

3.1   Research Design

This research uses a quantitative method. Therefore, a survey method was employed. The survey method is the most appropriate choice when determining how variables (both sociological and psychological) like respondents' opinion and their attitudes are interrelated (Zikmund, Babin, Carr, & Griffin, 2013).

3.2   Population and Sample

The population of this study consists of all online consumers within the baby-boomer age cohort. Due to the homogeneity of the

consumers within the age group and the objectives of the study do not involve making comparisons between different states of the country, Klang Valley was chosen as the area of coverage for this study (Sekaran & Bougie, 2016). Due to the magnitude and complexity of determining and obtaining a list of baby boomers within Klang Valley who has made an online purchase of healthcare products, a purposive sampling method was used. A purposive sampling technique allows for a deliberate choice of respondents (Etikan, 2016) as baby boomers are the respondents in this study.

The data for this study is collected via a self-administered survey instrument (questionnaire). An online survey using Google Form was distributed to various groups via email and WhatsApp. Questionnaires were distributed online to encourage a quick response from the respondents. The first section includes a pre-screening question to investigate respondents' experience with mobile shopping. Next, the respondents must be within the baby boomer age cohort. To ensure perceptions were based on direct behavioural experience, only respondents who had previously used mobile shopping and within the age cohort will be selected for the analysis (Ghazali et al., 2018). A total of 198 usable questionnaires were collected online via the Google forms platform.

3.3   Measurement Scale

These constructs were measured using a 7-point Likert scale. The questionnaire items for utilitarian shopping value from four dimensions that include information available, accessibility, product availability, and convenience were from Kumar & Kashyap (2018).

The items for personal innovativeness were borrowed from Ghazali et al. (2018), eWOM was from Prasad, Gupta & Totala (Prasad et al., 2017), and online purchase intentions were adapted from Kamalul Ariffin et al., (2018).

3.4   Data Analysis

SPSS was utilised, and AMOS 23 was used to test the data. First, CFA was used to establish the quality of measurements. CFA was used to assess seven factors namely available information, accessibility, product availability, convenience, personal innovativeness, eWOM, and purchase intention. Reliability and validity testing validated the scale's internal consistency for dimensionality

(content, convergent, and discriminant). Using Harman's single-factor analysis, common method variance was used. All items in the structural model seemed to be distinct and well fitted with the conceptual model. Cronbach's alpha was applied to determine the internal consistency of each item as displayed in Table 3. Utilitarian shopping value, personal innovativeness, and EWOM showed the Cronbach's alpha values of 0.948, 0.805, and 0.886, respectively indicating each instrument's strength from good to excellent.

This study looks at the predictive relationship between the independent components and the dependent variable. This study applied structural equation modelling to test the hypotheses. Using SEM (structural equation modelling) statistical analysis method, the analysis quantified both the concepts formed by EFA and the pathways of the hypothesised relationships between the variables (Klem, 2000). Harman's single correlational analysis (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) shows that the proportion of single-factor variance was 47%, below the standard value of 50% (Mattila & Enz, 2002). This shows that variables in the study were distinct from one another.

4.0 Findings

4.1 Demographic Profile of Respondents

Results in Table 1 show that 71.7% of the respondents are male while 28.3% are females. Most of the respondents are located within Klang Valley and 21.2% reside outside the Klang Valley. The birth year of the respondents is divided into four categories, which were 20.2% between 1946-1954, 55.6% between 1955-1964, 15.7% between 1965–1979, and 8.6% between 1980-1994.

For the mobile shopping experience level in Table 2, 39.9% made more than ten purchases within one year. A total of 28.3% of the respondents made between 3 to 9 purchases while 22.7% made 1 or 2 purchases within one year. Only 9.1% did not make any purchases via mobile shopping within one year. Based on the demographic profile, within one year, 90.9% of the respondents have made purchases via mobile shopping transactions.

Table 1 : Demographic Profile of Respondents

		Frequency	Percentage (%)
Gender	Male	142	71.7
	Female	56	28.3
Location	Within Klang Valley	156	78.7
	Outside of Klang Valley	42	21.2
Birthyear	Between 1946-1954	40	20.2
	Between 1955-1964	110	55.6
	Between 1965-1979	31	15.7
	Between 1980-1994	17	8.6

Table 2 : Shopping Experience

		Frequency	Percentage (%)
Level of Shopping Experience	1-2 purchases in the past year	45	22.7
	3-9 purchases in the past year	56	28.3
	More than 10 purchases in the past year	79	39.9
	Did not make any purchase	18	9.1

Table 3 shows that 50% of the respondents bought supplements online. This is followed by wearable products at 32.3%, medical devices at 24.7%, cosmetics at 23.7%, medications at 14.1%, and healthcare apps at 12.1%. Meanwhile, 14.6% or 29 respondents did not make any purchases within the specified categories of healthcare products.

Table 3 : Mobile Shopping Purchases

		N	Responses Percentage (%)	Percent of Cases (%)
Healthcare products bought online	Medication	28	8.2	14.1
	Supplements	99	29.1	50.0
	Wearables	64	18.8	32.3
	Medical Devices	49	14.4	24.7
	Cosmetic	47	13.8	23.7
	Healthcare Apps	24	7.1	12.1
	None	29	8.5	14.6

4.2 Relationship Between Utilitarian Shopping Value, Personal Innovativeness, and eWOM

The findings revealed a positive relationship between purchase intention and information availability (r = 0.456, p ≤0.01), accessibility (r = 0.594, p ≤ 0.01), product availability (r = 0.655, p≤ 0.01), convenience (r = 0.380, p ≤0.01), personal innovativeness (r = 0.740, p≤ 0.01), and eWOM (r = 0.725, p ≤0.01). In addition, all variables have a strong positive correlation (Table 4).

4.3 Correlations Matrix and Measurement of Model Evaluation

To examine the psychometric properties of the constructs, discriminant and convergent validities were computed. This study followed Fornell and Larcker's (1981) recommendations for "average variance extracted (AVE 0.50) and composite reliability (CR > 0.70)". All AVE and CR values meet the criteria. Thus, convergent validity has been established. The CR values for all research variables were greater than 0.70, showing that the scale is reliable (Fornell & Larcker, 1981). According to Hair et al. (2020), "the discriminant validity is good if the values of maximum shared variance (MSV) and average shared variance (ASV) are less than the value of AVE". From Table 4, the discriminant validity criteria have been met.

Table 4 : Correlation Matrix and Assessment of Discriminant Validity

Construct	CR	AVE	MSV	ASV	IA	ACC	PA	CON	PINO	EWOM	PI
IA	.913	.677	.454	.293				1			
ACC	.943	.864	.669	.408	.674**			3			
PA	.918	.652	.454	.433	.672**	.818**		3			
CON	.945	.864	.390	.120	.361**	.513**	.531**	1			
PINO	.929	.864	.548	.346	.500**	.513**	.624**	.375**			
EWOM	.895	.864	.526	.386	.515**	.595**	.655**	.484**	.710**		
PI	.910	.717	.548	.368	.456**	.594**	.655**	.380**	.740**	.725**	

**Correlation is significant at the 0.01 level (2tailed)

4.4 Structural Model: Goodness of Fit Statistic and Hypotheses Testing

The model was run at 1000 bootstraps with 90% confidence to access the upper and lower boundary. Results show $x2$ /df = 654.203/329=1.988, GFI =.815, TLI = 0.923, CFI = 0.933, and RMSEA

= 0.071 were reported as the measurement model (uni-dimensionality). Modification indices (MI) were investigated to determine a better value for GFI and RMSEA. The MI's that reflect error covariances were analysed, and error items e4 and e5 with a value of 40.062 required correlation. Following this stage, the model estimate is complete with identifying a final 28-item structural model.

Table 5 : Summary of Structural Model Fit Statistics

Model	Chi-square	df	Chi-square/df	p-Value	GFI	RMSEA
Initial SEM	654.203	329	1.998	.000	.815	0.71
Final SEM	560.201	325	1.724	.000	.842	0.61

The findings of the postulated hypothesis are shown in Table 6. Only three variables namely accessibility (ß= 0.250, t = 2.106, p ≤ 0.05), personal innovativeness (ß = 0.722, t = 4.863, p≤ 0.001), and eWOM (ß = 0161, t = 1.161, p 0.1) were found to be significantly related to baby boomers purchase intention toward health care products. Results indicate the strongest predictor was personal innovativeness.

Table 6 : Analysis Results

Path direction	Standardized Coefficient	SE	CR (t-value)	Result
Accessibility → Purchase Intention	.250	.143	2.106**	Accepted
Personal Innovativeness → Purchase Intention	.722	.157	4.863****	Accepted
Electronic Word of Mouth → Purchase Intention	.161	.166	1.161*	Accepted

Note *p ≤0.1, **p≤0.05, ****p≤0.001

5.0   Discussion and conclusion

Using the S-O-R foundation, this study empirically validated the conceptual framework of the study. The factors used, namely utilitarian shopping value, personal innovativeness, and eWOM, influenced the online purchase intention of healthcare products among baby boomers in Malaysia. The most vital factor, which is the personal innovativeness had a potent effect on purchase intention. This supports the findings from Patil et al., 2020 and Natarajan et al., 2017 as their studies show respondents are more willing to accept mobile shopping as a new channel for purchasing, making them sources of opinion for their

friends. As the focus of the study respondents is baby boomers, this study confirms that Malaysian baby boomers portray a higher propensity in adopting and using new technology.

Next, the utilitarian value factor did not influence purchase intention. However, one of the dimensions of utilitarian value, which is accessibility was found to influence the online purchase intention of healthcare products. Accessibility of the products indicates that the consumers can quickly source the products and services online. Products that are accessible are also priced cheaper than the offline alternative (Kumar & Kashyap, 2018). Hence, accessibility is directly related to the utilitarian aspect when purchasing (Martínez-López, Pla-García, Gázquez-Abad, & Rodríguez-Ardura, 2014). Consequently, eWOM was found to be a strong factor to influence purchase intention. This is consistent with findings from Ismagilova et al. (2020). Therefore, baby boomers do rely on reading the product reviews and customer experiences online. eWOM also enables baby boomers to read about products sourced from different opinions. This mix of opinions results in baby boomers forming their own opinions about a health product. Besides that, information obtained from eWOM can be a trustworthy source of information. Furthermore, baby boomers may get truthful insight into consumer experiences, and this may influence baby boomers to purchase online health products using their handphones.

From a practical perspective, companies should consider taking a generational cohort approach to marketing strategy. As the study concerns baby boomers, companies must consider them as targeted demographic segments. By having these segments, marketers can improve their business based on which factors influence shopping intentions while using a mobile phone. As mobile phones are interactive tools, having a human representative or a chatbot helps consumers increase their purchases for baby boomers. Furthermore, companies need to enhance reviews and opinions about products posted online as eWOM is an informal communication among consumers to discuss any goods or services with positive or negative characteristics. In addition, companies need to use eWOM as it is generally considered advantageous due to its accessibility to many baby boomers using the Internet. Good reviews and correct information using eWOM can strongly affect purchase intentions from the baby boomer segment.

In conclusion, the results of this study can benefit academics and practitioners due to the high number of online transactions and widely accepted online shopping, particularly during the Covid-19

pandemic. Furthermore, this study provides additional information to the healthcare producers to understand the behaviour of their customers, specifically baby boomers who purchase products using mobile phones. Finally, more stimuli factors can be tested in ensuing studies.

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