Smartwatch Adoption: A Structural Investigation on Behavioural Intention Among Young Adults in Malaysia

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Abstract

There has been a dramatic rise in the popularity of smartwatches, which are now widely available on the market. Nonetheless, these high-tech gadgets do not garner the same level of attention as smartphones or tablet computers. Despite predictions of continued steady growth in the industry, smartwatches have had no adverse effect on conventional watches. This research aims to determine what influences Malaysian consumers' willingness to adopt smartwatch technology. The study sample consists of 342 young adults aged 35 years old and below. This study employed SmartPLS 3.2.9, a second-generation structural equation modelling tool to analyse the data, and the findings showed a significant influence of perceived hedonic, perceived innovativeness, and perceived compatibility on user behaviour and decisions to adopt smartwatch technology. Meanwhile, perceived self-expressiveness and the need for uniqueness were found to have a detrimental impact on behavioural intention. Furthermore, the findings revealed no relationship between utilitarian and healthology with the behavioural intention to adopt smartwatches. This study sheds new light on consumers' perceptions of the value of smartwatches. Besides adding to our understanding of how people utilise smartwatch technology, this study also provides new insights into the practical implications for businesses and policymakers in the information technology and communication sectors and policymakers. The novelty of the research is to assess both motivations and technological factors in using a smartwatch. This research also examines the research's limitations and offers recommendations for future research.

Keywords: smartwatch, behavioural intention, adoption, young adults, Malaysia

1.0 Introduction

Globally, smartwatch technologies have received much attention in recent decades and are getting increasingly prevalent as a

significant segment in the wearable industry. Smartwatches are also referred to as wristwatches that include a wide array of sophisticated features. Aside from timekeeping, several additional functionalities are available (Chuah, Rauschnabel, Krey, Nguyen, Ramayah, & Lade, 2016; Hsiao, 2017) including collecting physiological, psychological, and behavioural data directly from its users. Smartwatches can share data and basic information with other devices through advanced applications such as smartphones or tablet PCs. The functions allow its users to have greater control over their personal lives including tracking their health problems, notifications, and self-management control.

The worldwide smartwatch market predicts a rise in sales to over 258 million units by 2025, which is expected to grow from $41.28 billion to $109.28 billion by then (Valishery, 2021). In Malaysia, the income from smart wearables is expected to reach up to US$29 million (approximately RM122.61 million) by 2022, representing a 5.7 per cent annual growth rate over the next five years. A forecast predicts that there will be 1.5 million Malaysian smartwatch users by 2024 (Statista, 2019). These data confirm the valuable research area of smartwatch technology adoption among Malaysian consumers, which demands further investigation.

Smartwatches are gaining popularity among users due to their appealing multi-functionality to various user interests such as health monitoring, fitness tracking, location navigation, connectivity, alert notification, smart environment control, and even personal data collection through sensors and data storing technologies. According to Baba et al. (2019), the smartwatch application is significant in various areas including healthcare, education, commerce, entertainment, and sports.

Recently, many studies have examined the elements that influence people's decisions to use smartwatches for diverse reasons including health monitoring, fitness tracking, diabetes self-management, eating, and medication-taking behavioural control (Reeder & David, 2016; Chan et al., 2012). However, a few studies examined the possible motivation factors other than focusing on the technology acceptance factors. Therefore, this study mainly investigates the determining factors that drive the adoption behaviour of smartwatch technology to bridge the knowledge gaps. Apart from being evaluated as information technology (IT) innovation (such as perceived innovativeness and perceived compatibility), smartwatches

could also represent a luxury product (such as perceived self-expressiveness and the need for uniqueness). Apart from these motivation factors, the perceived benefits (hedonic and utilitarian values) and the 'healthology' (health and technology) concept are other pivotal elements contributing to smartwatches' consumer evaluation, which should be investigated further. This paper is organised as follows: the Introduction, Section 2 provides the literature review and formulation of hypotheses, Section 3 describes the methodology, Section 4 addresses data analysis, and Section 5 finishes with a discussion and future research.

2.0 Literature Review and Hypotheses Development

Understanding individuals' reasons for adopting new technologies continue to be a primary research focus among most scholars. Despite the numerous advantages of utilising smartwatches, there is a paucity of data on what motivates millennials to use smartwatches. For this reason, many scholars have been interested in investigating the factors that contribute to people's behaviour throughout both the pre-and post-adoption behaviour.

Theoretically, most previous studies have applied established frameworks such as the Technology Acceptance Model (TAM), Unified Theory of acceptance and use of technology (UTAUT), and Innovation Diffusion Theory (IDT). The proposed model is designed based on the behavioural decision theory perspective on hedonic and utilitarian choice, and a related study will make a unique contribution to the literature by combining adoption intention behaviour from a multidisciplinary perspective, perceived benefits, healthology, the use of smartwatches as luxury products, and smartwatches as an information technology innovation. A theoretical model (see Figure 1) has been developed to identify factors influencing a person's decision to use a smartwatch. The model's causal relationships will be explained in detail throughout this part.

2.1 Perceived Benefits

The degree to which a customer feels they will gain from using a smartwatch is perceived as a benefit (Kim et al., 2008). On the other hand, a smartwatch acts as the time checker regarding the benefits received, social, symbolic, and euphoric. This study's perceived benefits are measured via the hedonic benefits and the perceived

utilitarian values. Hedonic and utilitarian values have been found to motivate the use of smartwatches (Hong et al., 2017; Nascimento et al., 2018; Pal et al., 2018; Chuah, 2019).

Hedonic benefits, also known as emotional rewards, include the emotional feeling such as fun, amusement, and sensory pleasure gained from utilising smartwatch technology and the basic usage of the device itself. Previous research on information systems has shown the growing effect of hedonic value on the adoption of smartphones (Raman & Don, 2013; Escobar-Rodríguez & Carvajal-Trujillo, 2014; Kim & Sundar, 2014). Users' decisions on whether to utilise smartwatches are influenced by hedonic factors as reported by Deghani et al. (2018) and Kawkitipong (2018). A user's conviction in the productivity-boosting potential of a smartwatch is also evidenced by utilitarian benefits (Chuah et al., 2016). Bolen (2020), Gupta (2020), and Siepmann and Kowalczuk (2021) found that it has an impact on smartwatch usage. In addition, Kim (2017) reported that smartwatch users are satisfied with utilitarian features such as controllability and easy navigation. Likewise, Ogbanufe and Gerhart (2020) has conducted a study to investigate the impact of utilitarian factors (information and system quality) on the usage of smartphone features. This study investigates the links between perceived benefits namely hedonic and utilitarian benefits of the intention to use smartwatches.

Accordingly, the following hypotheses were proposed:

H1: Hedonic benefit is positively associated with the intention to use a smartwatch.

H2: Utilitarian benefit is positively associated with the intention to use a smartwatch.

2.2 Healthology

Health and technology are now inextricably linked. Dehghani et al. (2018) defined healthology as the study of health concerns, informatics, and technology to develop innovative solutions to meet specific healthcare requirements. According to the research, wearable technology has opened a whole new way of looking at health and technology. This advancement can provide extremely precise health-related indicators, thus allowing people to be more actively involved in their health and wellbeing monitoring (Canhoto & Arp, 2017; Kaplan & Stone, 2013). Such convenience can motivate users to exercise

regularly based on a daily health watch monitoring system. In related findings, Dehghani et al. (2018) reported that healthology has no significant effect on smartwatch actual usage while Sabbir et al. (2020) discovered that healthology has a substantial indirect influence on the intention to use smartwatches. Given the key benefits of a smartwatch such as precise tracking of health data, the smartwatch's use predicts positive behavioural intentions. Considering the lack of research on the impact of healthology, the following hypothesis was proposed:

H3: Healthology is positively associated with the intention to use a smartwatch.

2.3 Smartwatch as an IT Innovation

Individual characteristics play a vital role in cutting-edge technology uptake (Cecchinato et al., 2015; Yang, 2005). Given that a smartwatch is an emerging technology, its use is anticipated to be heavily influenced by personal innovativeness. The term innovative refers to those willing to try new technologies and have a favourable attitude toward new sophisticated technology. Previous studies found that consumer innovativeness is positively linked to the intention of wearing smartwatches (Leue & Jung, 2014; Hong et al., 2017; Hsiao, 2017; Zhang et al., 2017). These findings led the researchers to make the following predictions:

H4: Perceived innovativeness in information technology is positively associated with the intention to use a smartwatch.

Apart from innovativeness, another influencing factor is compatibility. Kim and Ammeter (2014) described compatibility as the extent of consistency of the devices with the current values, requirements, and experience of users who might be interested. Wearable device compatibility must comply with other products' user business demands (such as smartphones and personal computers), lifestyles, and technical functionalities (Yang et al. 2016). Different studies have shown that compatibility is among the strongest drivers of smartwatch adoption or intention to use by users (Choi & Kim, 2016; Hsiao, 2017). Furthermore, several studies in the mobile setting have revealed that compatibility is a key predictor of usefulness and intention (Wu & Wang, 2005; Yang et al., 2012). Therefore, the following hypothesis was proposed:

H5: Perceived compatibility is positively associated with the intention to use a smartwatch.

2.4 Smartwatch as Luxury Product

Choi and Kim (2016) developed an extended technology acceptance model (TAM) called perceived self-expressiveness to explain why people want to use smartwatches, in which fashion items featuring smartwatches were considered. Self-expressiveness refers to individuals' usage of specific technologies or buying and using goods and services that are important to their social identity and role-oriented self-identity (Pedersen & Nysveen, 2003). Specifically, it is how much a product or technology represents the personal traits of an individual (Morrison & Johnson, 2011). Smartwatches should have distinct features (fashion) for use in every situation and activity because they are meant to be physically linked to one's body and may symbolise status (Dehghani, 2018). Therefore, smartwatch design is a crucial consideration for intent to use, and it can please buyers who seek originality (Choi and Kim, 2016). Furthermore, the aesthetic appeal has been found to positively influence consumers' desire to embrace smartwatches (Nanda et al., 2008; Tunca & Fueller, 2009; Jung et al., 2016). As a result, the following hypotheses were proposed:

H6: Perceived self-expressiveness is positively associated with the intention to use a smartwatch.

H7: The need for uniqueness is positively associated with the intention to use a smartwatch.

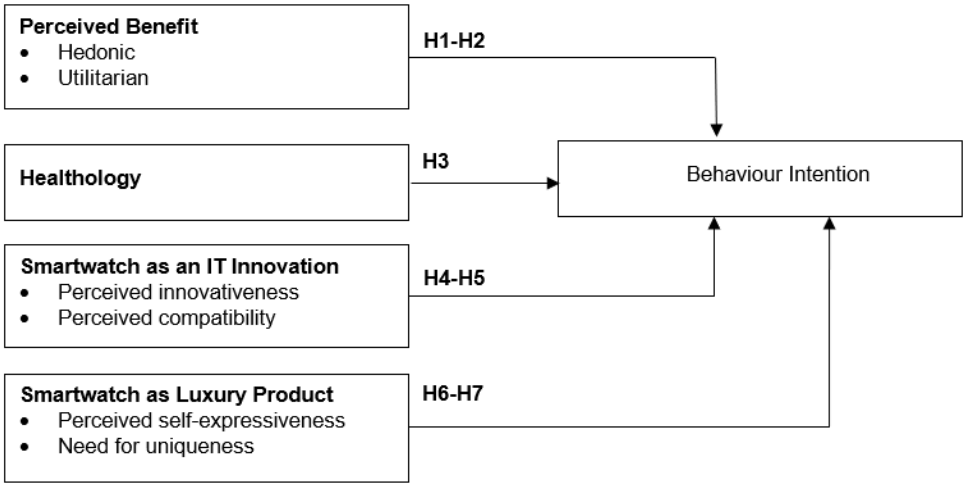

Figure 1 : Research Model

3.0 Methodology

3.1 Measures of Variables

The constructs in this study were developed using measuring items from extensive previous research. Operationalisations from previous studies were used to expedite the cumulative research. Respondents' opinions were analysed using a Likert scale ranging from strongly disagree (1) to agree (5) strongly. The construct of perceived benefits is composed of two dimensions namely utilitarian and hedonic, which is taken from Kang and Jung (2020). Healthology consists of 3 items, which are adapted from Dehghani, Kim, and Dangelico (2018). Furthermore, the construct of the smartwatch as an IT innovation is based on two dimensions including perceived innovativeness (Krey et al., 2019) and perceived compatibility, (Schierz, Schilke, and Wirtz, 2010). Finally, two dimensions were constructed for the dimension of the smartwatch as a luxury product. The six-item scale of perceived self-expressiveness was taken from Krey et al. (2019) while the need for uniqueness was adapted from Hong and Tam (2006). Lastly, the behavioural intention was adapted from Hsiao (2017) and Wu, Wu, and Chang (2016).

3.2 Sampling and Data Collection

The research was carried out in the form of a cross-sectional study utilising an online survey. The study’s target population consisted

of young adults in Malaysia. The choice of Malaysia as the study's context is deemed appropriate as smartwatch adoption is considered low in Malaysia with only 22 per cent of respondents stating that they possess a smartwatch, and 51 per cent said that they do not own a smartwatch, fitness tracker or activity tracker (Statista, 2020). The analysis was conducted at the individual level since this research targeted only young adults (within the age range of less than 35 years old) residing in Malaysia.

This study used the purposive (judgment) sampling technique whereby the sample was selected based on two criteria namely age 25 to 34 years old and those who had never owned a smartwatch. The age range was chosen as those aged were the most likely to own smart wearables (smart objects that consumers may wear such as smart glasses, trendy wearables or smartwatch devices (Baudier, Ammi, & Wamba, 2020) with 24 per cent owning a smartwatch (Statista, 2020b). Supported by Ismail, Razak, Zainol, and Sallehudin (2019), this study proposed that a greater knowledge of generation Y behaviour is critical for recruiting and maintaining consumers in the current digital revolution.

A cover letter introducing the researcher and explaining the goal of the study accompanied the questionnaire. Participants were ensured anonymity as no names or other personal identifiers were recorded, and the survey results were solely academic. Filter questions (age and smartwatch ownership) were included in the questionnaire to guarantee that only those who fit the criteria are eligible to participate. Each person who did not fulfil the requirements was immediately eliminated from the sample.

To compute the sample size, G-Power was employed (Faul et al., 2007). To test the model with seven predictors, a sample size of 103 is necessary based on the power of 0.80 and the effect size of 0.15 (Cohen, 1992). To mitigate potential issues associated with a small sample size, 442 samples were collected.

Eighty-seven were removed from the screening questions due to their ownership of a smartwatch. Another thirteen samples were removed due to incomplete responses, remaining with 342 relevant responses. The questionnaire took an average of 15 minutes to be completed. Male constitutes 14 per cent (N=48) of the sample while females comprise of 86 per cent (N=294). Approximately 88 per cent (N=301) of the respondents were under the age of 25 years old, 9.9

per cent (N=34) were between 25 and 30 years old, and only 2 per cent (N=7) of the respondents were between 31 to 35 years old.

4.0 Data Preparation

SPSS 25.0 was used to clean the data (remove outliers and missing value identification) and perform descriptive analysis. Descriptive analyses were conducted to explain the number of respondents within each demographic variable (gender and age). Additional measures of multivariate normality, as suggested by (Cain, Zhang, and Yuan, 2017), were calculated using the web-based program http://webpower.psychstat.org/models/kurtosis/, which can be found at http://webpower.psychstat.org. The data did not conform to multivariate normality as the Mardia's coefficient of multivariate skewness was 10.140 while the kurtosis was 91.790, thus proving that the data obtained are not normal.

4.1 Common Method Bias (CMB)

This study uses a marker variable strategy to reduce common technique bias from a self-reported, single source (Podsakoff, MacKenzie, and Podsakoff, 2012). Following Lin et al. (2015), the marker variable was assessed as an exogenous variable that predicted an endogenous construct within the model. All significant effects in the original model without marker variables remained significant (the loading and R^2 values differences are less than 0.005) in the revised model with marker variables. Therefore, it can be concluded that the CMB is not a significant problem.

5.0 Findings

This study utilises SmartPLS 3.2.9, which is a structural equation modelling tool. A two-stage approach was used in executing PLS-SEM whereby the measurement model was tested followed by a structural model (Hair et al., 2019). This investigation uses a bootstrapping procedure of 1000 subsamples.

5.1 Measurement Model

The model's reliability and validity were established by evaluating the measurement model evaluation. Table 1 shows that the indicators loadings range is above 0.7, which is from 0.794 to 0.901 (Hair et al., 2019). The Composite Reliability (CR) is in the range of

0.897 to 0.958, all above the required 0.7. As a result, internal consistency is retained. Next, the extracted factor loadings and average variance (AVE) were examined for convergent validity. Table 1 shows that the AVE values are in the range of 0.64 to 0.80, and all reflective constructs are higher than the recommended 0.5 thresholds (Hair et al., 2019). These results prove that the constructs meet the reliability and convergent validity requirement.

Table 1 : Reliability and Validity of the Measurement

Construct	Item	Loadings	CR	AVE	VIF
Hedonic	HE1	0.867	0.914	0.726	1.988
	HE2	0.899			
	HE3	0.784			
	HE4	0.854			
Utilitarian	U1	0.878	0.913	0.778	1.956
	U2	0.865			
	U3	0.903			
Healthology	H1	0.894	0.925	0.804	1.489
	H2	0.896			
	H3	0.900			
Perceived Innovativeness	PI1	0.740	0.897	0.636	1.578
	PI2	0.874			
	PI3	0.835			
	PI4	0.756			
	PI5	0.775			
Perceived compatibility	PC1	0.893	0.909	0.770	3.137
	PC2	0.899			
	PC3	0.839			
Perceived Self-Expressiveness	SE1	0.871	0.958	0.791	3.249
	SE2	0.900			
	SE3	0.853			
	SE4	0.913			
	SE5	0.902			
	SE6	0.898			
Need for Uniqueness	NU1	0.685	0.919	0.696	2.067
	NU2	0.872			
	NU3	0.870			
	NU4	0.867			
	NU5	0.861			

Construct	Item	Loadings	CR	AVE	VIF
Behavioural Intention	BI1	0.901	0.950	0.791	-
	BI3	0.871			
	BI4	0.902			
	BI5	0.902			
	BI2	0.872			

The HTMT was then calculated to see if the correlations were discriminately valid (Henseler, Ringle, & Sarstedt, 2015). Findings in Table 2 show that all values fulfil the criterion of $HTMT_{.90}$ (Gold and Malhotra, 2001) indicating the discriminant validity has been ascertained.

Table 2 : Heterotrait-Monotrait Ratio of the Correlations (HTMT)

	1	2	3	4	5	6	7	8
1. Behaviour Intention								
2. Healthology	0.453							
3. Hedonic	0.642	0.429						
4. Need for uniqueness	0.568	0.440	0.558					
5. Perceived Innovativeness	0.630	0.383	0.542	0.613				
6. Perceived Self-Expressiveness	0.603	0.552	0.590	0.707	0.53			
7. Perceived compatibility	0.750	0.544	0.680	0.697	0.57	0.879		
8. Utilitarian	0.561	0.535	0.703	0.567	0.51	0.489	0.622	

Notes: HTMT <0.90 (Gold et al., 2001).

5.2 Structural Model

An examination of lateral collinearity was done before the structural model is evaluated. The Inner VIF values for all independent variables (ranging from 1.489 to 3.429) are less than 5 (Hair et al.,2017), thus indicating that lateral collinearity is not a concern in this study. After establishing the measurement model, the structural model is examined using a 1000-resample bootstrapping approach. The structural model assessment (Table 3 and Figure 2) shows the hypothesis testing.

The results show that the perceived hedonic towards behavioural intention to adopt a smartwatch is substantial. As a result, H1 is supported (t=3.106, =0.189). Furthermore, the findings revealed that utilitarian and healthology have no impact on behavioural intention

to use a smartwatch. Hence, H2 and H3 are not supported (β =0.040, t=0.744) and (β =0.056, t=0.884). Furthermore, the findings demonstrated that perceived innovativeness and perceived compatibility both had a statistically significant impact on the users' behaviour and decisions to own a smartwatch. A negative influence on behavioural intention is exerted by perceived self-expressiveness. Because of this (β =-0.029, t=0.338), hypothesis H6 is not supported. Finally, behavioural intention has an insignificant effect on the need for uniqueness (β =0.029, t=0.459). As a result, H7 is not supported.

The coefficient of determination (R^2) was assessed to measure the model's explanatory power with a proposed threshold of 0.10 was used to assess the model's explanatory power (Cohen, 1988). Specifically, the R^2 value of behavioural intention was 0.550, which indicates the model is substantial. Next, the effect size (f2) is assessed following a guideline by Cohen (1988). Table 3 shows that only hedonic, perceived innovativeness, and perceived compatibility have a small effect in producing the R^2 for behavioural intention. Others (utilitarian, healthology, perceived seld-expressiveness, and need for uniqueness) have no effect in producing the R^2 for behavioural intention.

Additionally, the model's predictive relevance (Q^2) was evaluated. The Q^2 for the latent variable behavioural intention was 0.408, which was greater than 0 indicating good predictive relevance at the construct level (Hair et al., 2017). Hair et al. (2017) also stated that as a relative measure of predictive relevance, the value of 0.02, 0.15, and 0.35 indicates that an exogenous construct has a small, medium, and large predictive relevance to a particular endogenous construct. The results showed that hedonic, perceived innovativeness, and perceived compatibility have a small q2 effect size.

Table 3 : Path Coefficient and Hypothesis Testing

	Hypothesis	Beta	Std Error	t-value	p-value	BC-CI Lower	BC-CI Upper	Decision	f2	Q^2	q2
H1	Hedonic -> Behaviour Intention	0.19	0.06	3.11	0.00	0.10	0.29	Supported	0.041	0.41	0.02
H2	Utilitarian -> Behaviour Intention	0.04	0.05	0.74	0.23	-0.04	0.13	Not Supported	0.002		0.00
H3	Healthology -> Behaviour Intention	0.06	0.06	0.88	0.19	-0.05	0.16	Not Supported	0.005		0.00
H4	Perceived Innovativeness -> Behaviour Intention	0.25	0.06	4.30	0.00	0.14	0.33	Supported	0.087		0.05
H5	Perceived compatibility -> Behaviour Intention	0.40	0.07	6.14	0.00	0.30	0.51	Supported	0.115		0.06
H6	Perceived Self-Expressiveness -> Behaviour Intention	-0.03	0.07	0.42	0.34	-0.15	0.08	Not Supported	0.001		0.00
H7	Need for uniqueness -> Behaviour Intention	0.03	0.06	0.46	0.32	-0.08	0.13	Not Supported	0.001		0.00

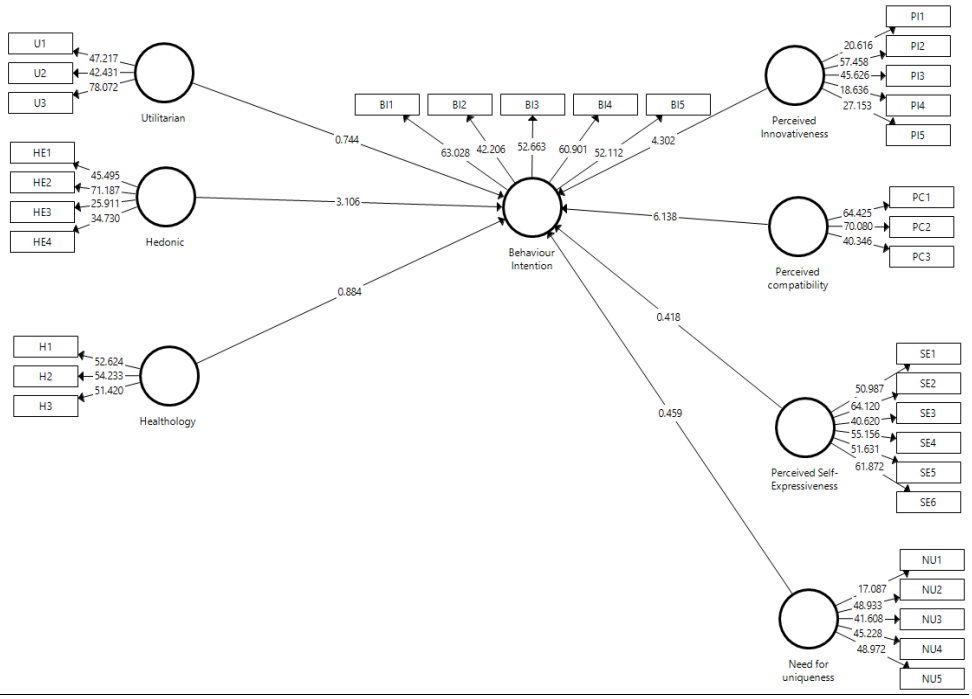

Figure 2 : Theoretical Framework

6.0 Discussion

The focus of this paper is to expand the knowledge on the domain of smartwatch technology adoption behaviour. Specifically, this study aims to determine the factors that drive the adoption behaviour

of smartwatch technology with the limited setting of young Malaysian individuals as the respondents. These respondents were aged 35 years old and below and are possible early adopters of smartwatch technology. The proposed research model is unique in its integration of perceived innovativeness, perceived compatibility, perceived self-expressiveness, need for uniqueness, hedonic, utilitarian, and healthology concept, and evaluates the determinants of smartwatch adoption behaviour.

The cross-sectional online survey of 342 participants established that consumers' fundamental elements in deciding to own a smartwatch were hedonic, perceived innovativeness, and perceived compatibility. In addition, the results also revealed the negative influences of utilitarian, healthology, perceived self-expressiveness, and the need for uniqueness indicating that these elements have no impact on behavioural intention to use a smartwatch. An interpretation of the results based on the empirical findings is presented.

The results showed a highly significant hedonic impact on the decision to adopt a smartwatch. Furthermore, this finding also corroborated other studies on consumer involvement with various other IT products (Dhar & Wertenbroch, 2000; Yang, 2010; Venkatesh et al., 2012; Hew et al., 2015; Deghani et al., 2018) that found hedonic elements (such as enjoyment) significantly affected the behavioural intention to use IT products. This study suggests that if smartwatch users find the various features and functions of a smartwatch to be fun, relaxed or enjoyable, they will use it. There is also the possibility that users' desire to use a smartwatch will increase if they find it enjoyable. Therefore, hedonic is presumed to directly impact and play an essential role in the decision-making process towards smartwatch adoption among individuals of 35 years old and younger, specifically within the Malaysian context.

It is also worthwhile to discuss both hedonic and utilitarian aspects together as performed in other empirical studies (Chang et al., 2004; Overby & Lee, 2006; Kang & Park-Poaps, 2010; Ryu et al., 2010; Hong et al., 2017; Ogbanufe & Gerhart, 2018; Pat et al., 2018; Siepmann & Kowalczuk, 2021) across various industries and products as these two aspects are often closely connected. In contrast with the hedonic finding, the results revealed that the utilitarian aspect has no impact on behavioural intention to use a smartwatch, which is inconsistent with previous studies. This could be due to the different population settings as the respondents' age in this study were all below

35 while previous studies included people of various age groups with some studies were up to 75 years old. This finding also implied that individuals of different age groups could have other goals and motivations for adopting a smartwatch. As young smartwatch users are naturally inclined to cool and fun experiences, they usually seek pleasurable experiences. Meanwhile, those above 35 may use a smartwatch for its desirable benefits through its functionality. This situation could potentially explain the apparent conflict between this study and previous findings on the utilitarian aspect.

Similarly, the results on healthology according to this study have a little impact on the intention to adopt a smartwatch. Dehghani et al. (2018) found no substantial healthology influence on smartwatch intention. Similarly, the sample employed in this investigation yielded the same results. Although a smartwatch can offer excellent personal health management and monitoring functions by providing health-related data (such as pulse rate, body movements, and calories burned), younger consumers with strong hedonic values may not find it stimulating (Lu et al., 2016; Reeder & David, 2016; Sabbir et al., 2020). The finding indicates that while smartwatches are health- and wellness-related indicators that enable consumers to manage their healthcare more effectively in an organised manner, lifestyle congruence is an essential factor in smartwatches' perceived value, especially for the Malaysian young generation.

This study also observed a significant effect of perceived innovativeness and perceived compatibility on users' behaviours and decisions to own a smartwatch. This specific finding on perceived innovativeness is similar to several studies (Leue & Jung, 2014; Hong et al., 2017; Hsiao, 2017; Zhang et al., 2017; Song et al., 2018) that found consumers' perceived innovativeness is positively linked to the intention of wearing a smartwatch. Apart from that, several studies (Wu & Wang, 2005; Yang et al., 2012; Choi & Kim, 2016; Hsiao, 2017) also inferred similar findings that demonstrated perceived compatibility as among the strongest drivers of smartwatch adoption or intention to use. This echoed earlier findings discussed above and reflects the population of this study, the potential of young smartwatch users. The intention to adopt a smartwatch plays alongside the elements of perceived enjoyment (hedonism) and the two relatively significant factors, which are innovativeness and compatibility. The more innovative and compatible a gadget is, the consumer will have more fun and enjoyable experience. Therefore, these three factors

significantly explained consumers' intention toward smartwatch adoption.

7.0 Limitations and Future Research

There are certain limitations to this study that could be addressed in future research. Young people who wear a smartwatch were the primary focus of this study, but older people may potentially adopt this technology (Choudrie et al., 2018; Kuoppamäki et al., 2017). As such, it is essential to develop strategies to cater for the niche market of older adults. Moreover, since this study employed a cross-sectional research design, it was conducted within a short time. Alternatively, a longitudinal design could help acquire findings from a specific group more precisely in future research, considering that smartwatch innovation can evolve as new knowledge and experiences are gained. Besides that, this study did not examine any specific brands, only smartwatches in general. Therefore, brands such as the Apple watch can be explored in future research, and also encompass other factors in the model including brand loyalty and brand influence.

Furthermore, the findings of this study were only limited to smartwatch products because only a general product category of smartwatch devices was included, therefore, the results cannot be generalised to other wearable devices. In future research, different types of wearable devices (such as smart glasses) should also be examined. As qualitative research can provide an insight into the factors influencing smartwatch adoption, cross-country studies and replicating the same analysis within developed and developing nations can also be conducted for future research. Apart from that, application providers can utilise this information to enhance and develop existing and future smartwatch applications. Finally, the findings of this study can also be helpful for practitioners, especially in the development of business strategies.

8.0 Conclusion

This study aims to examine the factors that influence the adoption of smartwatch technology among young Malaysians. The findings show that perceived innovativeness, compatibility, and hedonic substantially impact users' behaviour and decisions to acquire a smartwatch. Additionally, a negative influence on behavioural intention is exerted by perceived self-expressiveness. This study

further revealed that utilitarian value and healthology have no impact on behavioural intention to use a smartwatch. Therefore, businesses that operate in the IT or communication sectors are expected to develop marketing strategies to enhance a gadget's hedonic, innovation, and compatibility with other devices to ensure its engagement with potential users. Furthermore, this approach should help improve future user satisfaction and positive purchase behaviour. In this way, businesses should be able to provide more value for their customers, meet customer satisfaction, and increase the probability of returning customers.

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