



## BEHAVIOURAL INTENTION TO USE MOBILE APPS BY GEN Y IN MALAYSIA

 Krishna Moorthy<sup>1+</sup>

Sonia Johanthan<sup>2</sup>

Carmem Tham<sup>3</sup>

Khoo Xiao Xuan<sup>4</sup>

Lee Lit Yan<sup>5</sup>

Tan Xunda<sup>6</sup>

Tee Cheng Sim<sup>7</sup>

<sup>1,2,3,4,5,6,7</sup> Faculty of Business and Finance, Universiti Tunku Abdul Rahman,  
Kampar Campus, Perak, Malaysia

<sup>1</sup>Email: [krishnam@utar.edu.my](mailto:krishnam@utar.edu.my)

<sup>2</sup>Email: [sonia@utar.edu.my](mailto:sonia@utar.edu.my)

<sup>3</sup>Email: [Carmentham1995@hotmail.com](mailto:Carmentham1995@hotmail.com)

<sup>4</sup>Email: [Xiaoxuan6269khoo@gmail.com](mailto:Xiaoxuan6269khoo@gmail.com)

<sup>5</sup>Email: [Yityan\\_@hotmail.com](mailto:Yityan_@hotmail.com)

<sup>6</sup>Email: [Xunda911@hotmail.com](mailto:Xunda911@hotmail.com)

<sup>7</sup>Email: [Tcsim03@gmail.com](mailto:Tcsim03@gmail.com)



(+ Corresponding author)

### ABSTRACT

#### Article History

Received: 16 October 2018

Revised: 20 November 2018

Accepted: 31 December 2018

Published: 24 January 2019

#### Keywords

Mobile apps

Gen Y Malaysia

Unified theory of acceptance and

Use of technology 2

Diffusion of innovation theory

Behavioural intention to use

Performance expectancy.

The purpose of this study is to identify the factors that affect the behavioural intention to use mobile apps by Gen Y in Malaysia. The Unified Theory of Acceptance and the Use of Technology 2 (UTAUT2) and the Diffusion of Innovation Theory (DIT) are combined to examine the drivers that affect the behavioural intention to use mobile apps. The factors include performance expectancy, habit, price value, social influence, complexity and trialability. Data was collected by distributing self-administered survey questionnaires using the quota sampling technique to Gen Y in five States in Malaysia. The results show that all these variables significantly affect the behavioural intention to use mobile apps by Gen Y in Malaysia. The UTAUT2 and the DIT have been proven to be the suitable theories that can be considered by future researchers who wish to conduct research related to technological innovations. This study is useful for apps' designers, as they will be able to design apps to suit users' preferences and expectations by analysing the variables.

**Contribution/Originality:** This study combined UTAUT2 model and Diffusion Innovation Theory to study the behavioural intention and confirmed their suitability. Any future researchers on technological innovation can use this new model. Additionally, this study is useful for apps' designers to design apps to suit users' preferences by understanding the influencing factors.

## 1. INTRODUCTION

In recent years, the number of people owning a smartphone is growing tremendously and users are eager to download a variety of mobile apps. For example, the number of people possessing smartphones in Lithuania increased from 14.5% to 58% from the year 2010 to the year 2015 [1]. In Malaysia, mobile phone penetration rate had increased from 20 % to 50% from the year 2013 to the year 2016 which overtook the desktop penetration rate [2]. As mobile apps are getting popular in recent years, apps developers are excellent in monetizing their apps. Most of the mobile users are willing to spend money on apps that come along with features which known as "in-app purchases" rather than purchase solely for the app itself. To illustrate, in-app purchase is a game whereby users can purchase virtual goods such as gems and coins through the apps. Data shows that mobile users spent an average of \$9.20 to purchase in-apps features, while \$7.40 for purchasing mobile apps. Age become one of the factors which the results show that the Gen Y with age around 18-24 and age around 25-34 are willing to spend more on in-apps [3]

Gen Y, Millennial Generation or Digital Natives are referring to individuals who were born after 1981, mostly from 1981 to 1999 [4]. They are the first generation who spend their whole lives in the digital environment and

they are seriously affected by the internet and technology [5, 6]. Gen Y is described as technologically savvy, well-educated, structured, sophisticated and mature [7]. Gen Y owns a smartphone at a slightly earlier age, hence the time they spend on mobile apps is far beyond other earlier generations [8]. According to a research in the United States, the Gen Y users aged 18-24 years and 25-34 years accessed mobile apps by using a smartphone for an average of 90.6 hours and 82.5 hours in June 2015 respectively [9]. Thus, according to Suci [8], numerous users of smartphones are mostly from Gen Y.

The general objective of this study is to identify the factors that influence the behavioural intention to use mobile apps by Gen Y in Malaysia. Specifically, the research sought to determine whether the combined UTAUT2 model with DIT model influences the behavioural intention to use mobile apps.

### 1.1. Problem Statement

Mobile apps such as Pokémon Go, Facebook and Instagram had been branded as an addiction similar to cocaine and gambling which lead to negative implication to users. Chen [10] added that most of the Asian's Millennials are addicted to smartphone and checking the phone frequently for no reason, and avoid social interaction. Al-Sharqi, et al. [11] found that there are many negative consequences to Gen Y such as becoming physically inactive, less sociable and mentally dull. Although there are many past studies that address the behavioural intention to use apps and its factors, there are relatively few past studies that fuse two theories (UTAUT2 model & DIT) together and focus on Gen Y in Malaysia. Research done by Harris, et al. [12] showed that their sample size of 128 respondents is in one university and is insufficient to draw a concrete conclusion as their respondents are from the less diverse group. The study by Lee, et al. [13] only focused on entertainment and practical characteristics of apps instead of information and SNS characteristics.

## 2. LITERATURE REVIEW

### 2.1. Review of Relevant Theoretical Models

Venkatesh, Morris, Davis and Davis founded Unified Theory of Acceptance and Use of Technology (UTAUT) model in 2003 to describe how employees accept technology in organizations. In 2012, Venkatesh, et al. [14] further developed the model into the UTAUT2 which explains the consumer acceptance of technology [15]. In the UTAUT model, Venkatesh, et al. [16] had identified four variables, social influence, facilitating conditions, effort expectancy and performance expectancy. Venkatesh, et al. [14] further recognized other three constructs in the UTAUT2 model, which are hedonic motivation, price value and habit. Among the seven constructs, four constructs, namely performance expectancy, social influence, price value and habit are used in this study as independent variables to explain the drivers that drive the behavioural intention to use mobile apps. Performance expectancy is the degree to which an individual is convinced that the use of technology will bring advantages to perform activities. Social influence is an individual believes that he or she should use the particular technology based on important referents such as family and friends. Price value is the cost of utilizing technology from the perceived advantages of using it. Habit is systematic behaviour from the beginning of learning to the frequent use of technology. UTAUT2 is widely used in many research areas. Slade, et al. [15] had carried out their research by adopting UTAUT2 in the healthcare industry. Escobar-Rodríguez and Carvajal-Trujillo [17] had applied UTAUT2 in e-commerce websites to purchase online tickets. Morosan and DeFranco [18] applied UTAUT2 in hotel mobile payments, whereas [19] explored UTAUT2 in online shopping for fresh agricultural products.

Besides, DIT is applied in this study to investigate the drivers influencing behavioural intention to use mobile apps. DIT was found by Rogers [20] in which individuals form a favourable or unfavourable attitude towards innovation and make the decision whether to adopt the technology [21]. There are five characteristics of innovation in DIT which affect the decision of adoption, namely, relative advantage, complexity, compatibility, trialability and observability [22].

This research proposes to adopt complexity and trialability from DIT as independent variables. Complexity is the consideration of whether the innovation of the technology is difficult to understand and their ease of use as the adoption of such technology will be hindered if it is complicated to use. Trialability is referring to whether individuals have experimented with the new technology before adoption.

DIT is widely applied in many research areas. For instance, DIT has been used in the research done by Zhang [23] to examine the factors affecting the acceptance of patients and their usage of consumer e-health innovations. DIT has also been applied by McMullen, et al. [24] to illustrate the high and low performers in trials of the complex intervention. Olsson, et al. [25] also applied DIT to describe the perceptions of passive positioning alarm used by people with mild dementia.

## 2.2. Behavioural Intention to Use Mobile Apps

Behavioural Intention is defined as the individual's intuitive and subjective awareness in performing a certain behaviour which in turn, is the significant determinant of actual behaviour Tang and Chiang [26]. Turhan and Ozbek [27] agreed with Tang and Chiang [26] that behavioural intention indicates the readiness of individuals to perform a behaviour. Tsai [28] further added that behavioural intention signifies the willingness of an individual to use new technology. The behavioural intention of individuals will form good and bad consequences. Gökçearsan, et al. [29] argued that excessive use of apps may lead to deterioration in health and interpersonal relationship. However, Hsiao, et al. [30] argued that apps are free to download and apps can connect with families and friends. Undeniably, the individuals' behavioural intention is important to address the use of technology [28].

## 2.3. Performance Expectancy

Performance expectancy is the extent to which an individual believes that the use of technology will bring numerous advantages in performing activities [14]. Most of the researchers [18, 19, 31-33] had concluded that performance expectancy has a direct positive relationship towards behavioural intention in using apps, as performance expectancy reflects the perceived usefulness and advantages that benefit the users to adopt mobile apps. Based on the above, the first hypothesis is developed:

*H<sub>1</sub>*: There is a positive relationship between performance expectancy and behavioural intention to use mobile apps

## 2.4. Habit

Habit is the scale of individuals who perform behaviour systematically due to learning [14]. Although Raman and Don [34] and Hsu and Lin [35] concluded that habit is not an important indicator to determine intention, however, researchers like Yuan, et al. [36], Nair, et al. [37] and Winkle, et al. [38] proved that habit does influence the users' behavioural intention to use apps. Furthermore, habit is regarded as an important predictor, as the intention becomes a systematic behaviour when users engaged to use apps in their daily life. Findings of the study conducted by Phang, et al. [39] revealed that hedonic motivation had the most significant influence on intention to shop via mobile shopping apps followed by habit and social influence. The above discussion leads to the second hypothesis as below:

*H<sub>2</sub>*: There is a positive relationship between habit and behavioural intention to use mobile apps

## 2.5. Price Value

Price value is the degree of consumers' cognitive tradeoff of apps' perceived advantages and cost of using apps [14]. Researchers have different viewpoints in determining whether price value affects behavioural intention to use apps. Harsono and Suryana [40] and Morosan and DeFranco [18] considered that price value is irrelevant to explain the users' intention and acceptance, whereas, Yang [41], Yuan, et al. [36] and Salim, et al. [42] recognized price value has strong impact to influence behavioural intention to use apps. Therefore, this proposed study

concluded that price value affects behavioural intention since users are willing to pay for the apps which will bring benefits to them. Hence, the third hypothesis is formulated as below:

*H<sub>3</sub>*: There is a positive relationship between price value and behavioural intention to use mobile apps

*2.6. Social Influence*

Social influence is the extent to which individual should use technology through influence from important referents such as family and friends Venkatesh, et al. [14]. Guo [43], Bhatiasevi [44] and Hsu and Lin [35] deduced that social influence strongly influences the users' behavioural intention to adopt apps. Yuan, et al. [36] added that social influence could affect behavioural intention to use apps which users are affected by important referents such as family and friends to download and use apps to connect with each other. Hence the fourth hypothesis is generated as below:

*H<sub>4</sub>*: There is a positive relationship between social influence and intention to use mobile apps

*2.7. Complexity*

Complexity is the level innovation is perceived as challenging and complicated to utilize or comprehend [45]. A study by Al-Jabri and Sohail [46] found that complexity has an insignificant effect on the adoption of mobile banking. However, Lee, et al. [47] and Jung, et al. [45] concluded that complexity is an important element in determining the users' acceptance and utilization of technology. This study draws a hypothesis that complexity is linked to the behavioural intention to use apps, as users more prefer to use apps that easy to utilize. Thus, the fifth hypothesis is generated based on the above discussion:

*H<sub>5</sub>*: There is a negative relationship between complexity and behavioural intention to use mobile apps

*2.8. Trialability*

Trialability is the extent to which potential adopter/user can experiment with a brand new idea to develop and express an opinion [21]. The study by Al-Jabri and Sohail [46] and Ntemana and Olatakun [48] agreed that trialability is not an important predictor to address behavioural intention to use apps. However, Folorunso, et al. [49], Lee, et al. [47] and Koçak, et al. [50] proved that trialability has a significant relationship to address behavioural intention to utilize technology. This study draws the sixth hypothesis that trialability has a significant relationship with behavioural intention, due to users mostly have tried to use apps before they consider to use for the long term if they will feel easy to use after a trial. Hence, the sixth hypothesis is formulated based on the above discussion:

*H<sub>6</sub>*: There is a positive relationship between trialability and behavioural intention to use mobile apps.

*2.9. Proposed Research Model*

The proposed research model is shown in Figure 1.

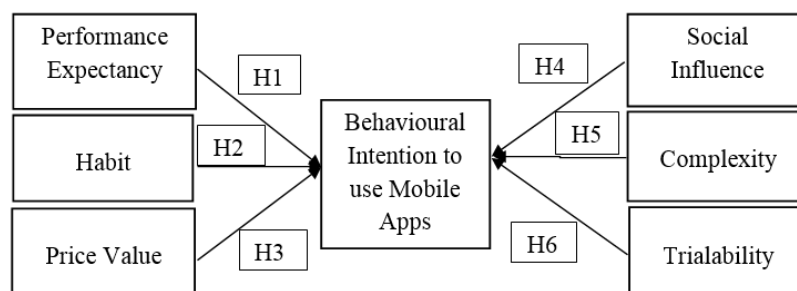


Figure-1. Proposed research model.

Source: Venkatesh, et al. [14] and Rogers [20].

### 3. METHODOLOGY

#### 3.1. Research Design

The method of data collection for this study is by using a questionnaire survey. The benefit of using a survey to collect data is that a large amount of information can be accumulated in a short time [51]. The survey method is one of the cost effective ways to collect the data because there is no cost to pay for the production of survey questionnaires which are sent via email and self-administered [52]. Besides, it is flexible to use the survey method because surveys can be administered in many modes such as online surveys, email surveys, social media surveys, paper surveys, and mobile surveys [51]. In this research, a cross-sectional approach has been followed, where the factors affecting the behavioural intention to use mobile apps were analyzed at a particular time [53]. The unit of analysis of the study is Gen Y who is mobile phone users, aged from 18 to 35.

#### 3.2. Population

The target population of this study is the users of mobile apps in Malaysia aged between 18 and 35, known as Generation Y or Millennials [54]. According to a research in the United States, smartphone users aged 18-24 years and 25-34 years accessed mobile apps for an average of 90.6 hours per month and 82.5 hours per month approximately on June 2015 ("Number of mobile app hours", 2016). They were the first generation spent their whole lives in the digital environment and they were greatly influenced by the internet and technology [5, 6].

#### 3.3. Sampling

Suresh, et al. [55] stated that the sample is a subsection of the said population which is truly representing the larger population. Therefore, sampling is needed since it is nearly impossible to study the entire population. In addition, sampling is more economical compared to the study of the whole population [55]. According to Hinkin [56] and Chong [57] the recommended sample size for the item-response ratio shall range from 1: 4 to 1: 10 (at least) to reflect the population of the target respondents. Since there is a total of 37 questions, the item-response ratio produced 148 to 370 samples or more.

#### 3.4. Research Instrument

The self-administered questionnaire survey is the research instrument as it can appeal to the largest number of respondents as possible ("Questionnaire design", n.d.). 400 sets of questionnaires had been distributed to the respondents in five different states in Malaysia. The reasons behind why this study chose to collect data from these five states are due to fact that they had the largest share of mobile users in 2014. Every respondent has 5 to 10 minutes to complete the survey and collected back after they completed the surveys. Out of 400 sets, 384 sets of questionnaires were considered as valid questionnaires.

Before distributing 400 sets of questionnaires, a pilot test was conducted to refine questionnaires and eliminate errors and flaws Pilot Testing Data Collection Instruments [58]. Zumitzavan and Michie [59] quoted that the ideal sample size for the pilot test is a minimum of 10. Thus, 30 sets of questionnaires were distributed to ensure the feasibility and reliability of the study [60].

#### 3.5. Construct Measurement

The questionnaire consists of three sections. Section A presents the demographic profile of the respondents like gender, age, education, State, mobile communication devices, internet access, and hours spent on mobile apps, and measured using the nominal scale.

Section B includes questions related to the four dimensions of UTAUT2 model and two dimensions of DIT model. In this section, the questions are divided into six parts, namely (1) performance expectancy, (2) habit, (3) price value, (4) social influence, (5) complexity, and (6) trialability.

Section C consists of questions related behavioural intention to use mobile apps. All of the items in sections B and C were measured using the interval scale which is the 5-point Likert-scale. The scale ranges from 1 to 5 which indicate from 1 = strongly disagree to 5 = strongly agree.

#### 4. DATA ANALYSIS

SAS Enterprise Guide 7.1, which consists of numerous data analysis tools, was used in the statistical analysis in this study.

##### 4.1. Pilot Test

The result of the pilot test is provided in Table 1. The reliability was met because the Cronbach's Alpha of all variables exceeded 0.7. The result also depicts that the skewness and kurtosis figures are in between the acceptable range of -2 to +2 [61].

Table-1. Reliability test and normality test (pilot test)

Variables	Constructs	Items	Cronbach's Alpha	Skewness	Kurtosis
Performance Expectancy	PE	PE1	0.853137	0.01252363	-0.1684195
		PE2		0.00330966	0.22885579
		PE3		-0.5427041	-0.1401695
		PE4		-0.2890132	-0.4027994
		PE5		-0.0014173	-0.2138271
Habit	HB	HB1	0.874142	-0.3852095	-0.6088276
		HB2		-0.2578007	-0.9053734
		HB3		-0.7755068	0.76763415
		HB4		-0.4832032	0.08516743
		HB5		-0.2055281	0.00869439
Price Value	PV	PV1	0.787032	0	0.58690476
		PV2		0.06597548	0.31508001
		PV3		-0.0874046	-0.7698912
		PV4		-0.1980602	-0.6683861
		PV5		0.06701306	0.27164677
Social Influence	SI	SI1	0.864710	-0.1231027	-0.0646552
		SI2		-0.3738764	0.1362782
		SI3		-0.2679085	-0.3341377
		SI4		-0.6844219	0.45783777
		SI5		-1.1927328	1.22928812
Complexity	CP	CP1	0.779805	0.75307465	0.97644804
		CP2		0.11555862	-0.7782384
		CP3		-0.1751429	-0.7028279
		CP4		0.23973922	-0.4266318
		CP5		0.64749951	1.08482313
Triability	TL	TL1	0.727007	-0.5834118	-0.5732678
		TL2		-0.3347979	0.0410983
		TL3		-0.2397392	-0.4266318
		TL4		-0.3563978	-0.3430617
		TL5		-0.0874046	-1.0997229
Behavioural Intention	BL	BI1	0.797160	0	0.23015873
		BI2		1.32833813	-0.2573203
		BI3		-0.2944399	-0.5502232
		BI4		0.0926862	-0.5938248
		BI5		0.51721899	-0.5342971
		BI6		-0.097743	-0.3206849
		BI7		-0.32322405	-0.7216462

##### 4.2. Descriptive Analysis

Demographic Profile of Respondents



Table 2 depicts the demographic profile of the respondents. Majority of the respondents is female, ranging from 18 to 24 years, possess a degree, own mobile communication devices, access to internet and spent 4 to 6 hours on mobile apps.

**Table-2.** Summary of demographic profiles

Profile	Category	Frequency	Percentage (%)
Gender	Female	218	56.77
	Male	166	43.23
Age	18 - 24 years old	206	53.65
	25 - 30 years old	130	33.85
	31-35 years old	48	12.50
Highest Education Completed	Below SPM	15	3.91
	SPM/O-Level	52	13.54
	STPM/Foundation/UEC/A-Level	34	8.85
	Diploma/Advance Diploma	92	23.96
	Bachelor Degree	175	45.57
	Master Degree	9	2.34
	PhD	1	0.26
	Others	6	1.56
Current State	Perak	134	34.90
	Selangor	91	23.70
	Kuala Lumpur	61	15.89
	Johor	21	5.47
	Sabah	77	20.05
	Other state/countries	0	0
Ownership of mobile communication devices	Yes	384	100
	No	0	0
Accessibility to the internet using a mobile communication device	Yes	384	100
	No	0	0
Hours Spent on Mobile Apps	Less than 1 hour	10	2.60
	1 to 3 hours	66	17.19
	4 to 6 hours	107	27.86
	7 to 9 hours	91	23.70
	10 to 12 hours	70	18.23
	More than 12 hours	40	10.42

#### 4.3. Central Tendencies Measurement of Constructs

According to Table 3, the mean values ranged from 1.8802 to 4.2057. The mean values for performance expectancy range from 3.5703 to 4.2057 which indicates that most of the respondents choose neutral and agree on the items in the questionnaires. For the habit, its mean values falls in the range from 3.7109 to 4.1250 indicating the respondents choose for neutral and agree with the questionnaires' items. Interestingly, the mean value for price value falls in the range from 2.6615 to 3.1302, suggesting that the respondents choose to neutral and disagree. In terms of social influence, the majority of the respondents selected neutral as its mean values fall in the range from 3.5573 to 3.9375. Contrastingly, the mean values for complexity fall in the range of 1.8802 to 2.4115; it depicts that the majority of respondents tend to strongly disagree and disagree as they mostly feel that mobile apps are much easier to understand and use. The respondents rated neutral for trialability with the mean values in the range from 3.5833 to 3.9583. The mean values of the dependent variable, behavioural intention to use mobile apps falls from 3.8073 to 4.2161 whereby respondents choose neutral and agree on this item. The standard deviation represents the dispersion or variability of data for each variable. The lowest standard deviation based on Table 3 is 0.6356 (PE2) whereas the highest standard deviation is 1.0390 (PV5).

Table-3. Central tendencies measurement of constructs

Variables	Items	Mean	Standard Deviation
Performance Expectance	PE1	3.9427	0.7276
	PE2	4.2057	0.6356
	PE3	4.0599	0.7147
	PE4	3.5703	0.8366
	PE5	3.6745	0.8370
Habit	HB1	4.1250	0.7749
	HB2	3.7917	0.8751
	HB3	4.0677	0.7686
	HB4	3.7370	0.9674
	HB5	3.7109	0.8348
Price Value	PV1	3.1250	0.9226
	PV2	3.0885	0.9518
	PV3	3.0130	0.9324
	PV4	2.6615	0.9987
	PV5	3.1302	1.0390
Social Influence	SI1	3.5573	0.7203
	SI2	3.5911	0.8220
	SI3	3.7083	0.8036
	SI4	3.6146	0.8411
	SI5	3.9375	0.9401
Complexity	CP1	2.1354	0.8595
	CP2	2.4115	0.9600
	CP3	2.3802	0.9484
	CP4	2.0286	0.8530
	CP5	1.8802	0.9233
Triability	TL1	3.5833	0.7670
	TL2	3.8776	0.6955
	TL3	3.6641	0.7811
	TL4	3.9583	0.7704
	TL5	3.6927	0.7779
Behavioural Intention to use Mobile apps	BI1	3.8958	0.7880
	BI2	4.0938	0.7590
	BI3	4.2161	0.7173
	BI4	3.8073	0.9108
	BI5	3.8568	0.9099
	BI6	4.0573	0.8802
	BI7	4.1771	0.6893

#### 4.4. Reliability Test and Normality Test

Table 4 shows the results of reliability and normality tests. The Cronbach Alpha's values for all variables exceeds 0.70 which indicates that the variables are highly reliable [62]. Besides, the values for skewness and kurtosis are in the acceptable range of +2 and -2 [61].

#### 4.5. Pearson Correlation Analysis

Table 5 depicts the result of Pearson Correlation analysis. It suggests that the correlation is in the order in a sequence of Habit with the highest value of 0.58313, followed by Social Influence with the value of 0.50913, Performance Expectancy with the value of 0.44474, Triability with the value of 0.29060, Price Value with the value of 0.20819 and Complexity with the value of -0.31887. Notably, the correlation value for Complexity and Behavioural Intention is negative as the hypothesis formed earlier depicts there is a negative relationship between Complexity and Behavioural Intention. Furthermore, there is no multicollinearity problem exposed, since the correlation coefficients of all the variables are less than 0.9 [62]. Moreover, the p-values between dependent and independent variables are less than 0.05. Thus, there are significant correlations between the dependent variable and independent variables.



Table-4. Reliability and Normality Tests' Result

Variables	Constructs	Items	Cronbach's Alpha	Skewness	Kurtosis
Performance Expectancy	PE	PE1	0.783780	-0.4026373	0.5585529
		PE2		-0.4481461	0.47096029
		PE3		-0.5193708	0.33217122
		PE4		0.00476755	-0.1942818
		PE5		-0.3210939	-0.0151468
Habit	HB	HB1	0.819717	-0.9982717	1.76291678
		HB2		-0.4040931	-0.1349107
		HB3		-0.7057289	1.01114942
		HB4		-0.4266937	-0.1664571
		HB5		-0.3079501	-0.1426277
Price Value	PV	PV1	0.917828	-0.5514737	0.00686624
		PV2		-0.451784	-0.1083327
		PV3		-0.4339632	-0.1047405
		PV4		0.00752975	-0.4476662
		PV5		-0.543682	-0.414003
Social Influence	SI	SI1	0.797005	-0.6230372	1.11742998
		SI2		-0.5070286	0.51468273
		SI3		-0.5161547	0.53724104
		SI4		-0.1266754	0.08028149
		SI5		-0.7658241	0.30194066
Complexity	CP	CP1	0.884494	0.90142264	1.21644039
		CP2		0.43169316	-0.2106924
		CP3		0.52294077	-0.0643111
		CP4		0.80783897	0.78209694
		CP5		1.06042474	0.87495789
Trialability	TL	TL1	0.736301	-0.3521949	-0.0447631
		TL2		-0.4859096	0.51093907
		TL3		-0.2255575	-0.2955522
		TL4		-0.5484392	0.36170856
		TL5		-0.207574	-0.1293138
Behavioural Intention	BI	BI1	0.828863	-0.3606663	-0.0905349
		BI2		-0.7706181	0.88057446
		BI3		-0.6020624	0.02318277
		BI4		-0.380546	-0.0786892
		BI5		-0.4863374	-0.0455503
		BI6		-0.5737291	-0.4154777
		BI7		-0.6315723	0.91516563

Table-5. Pearson correlation coefficients matrix

Variables	PE	HB	PV	SI	CP	TL	BI
PE	1.00000						
HB	0.49674	1.00000					
SI	0.20513	0.21427	1.00000				
PV	0.34190	0.42330	0.09401	1.00000			
CP	-0.23428	-0.26574	0.20982	-0.14572	1.00000		
TL	0.12175	0.23702	0.13961	0.25386	-0.02624	1.00000	
BI	0.44474	0.58313	0.20189	0.50913	-0.31887	0.29060	1.00000

#### 4.6. Multiple Linear Regression

Table 6 depicts the model summary whereby R-square is valued at 0.4864. This indicates that 48.64% of the dependent variable, the behavioural intention to use mobile apps by Malaysia's Gen Y can be analyzed by the six independent variables, Performance Expectancy, Habit, Price Value, Social Influence, Complexity, Trialability. The remaining 51.36% is denoted by the supplementary factors which have not been included in this research.

Table-6. Model summary

Root MSE	Dependent Mean	Coefficient Variance	R-Squared	Adjusted R-Square
0.41217	4.01488	10.26604	0.4864	0.4782

Table 7 depicts the results of ANOVA. The F-ratio is used to measure the fitness of the model. The value of 59.50 of F-value is significant as p-value is less than 0.0001 (<0.05). It indicates that each one of the six independent variables is able to describe the dependent variable. Therefore, the relationship between all the independent variables and the dependent variable is significant and the research model in this study is fit.

Table-7. Multiple linear regression analysis ANOVA

Source	DF	Sum of squares	Mean Square	F-value	Pr>F
Model	6	60.64438	10.10740	59.50	<.0001
Error	377	64.04609	0.16988		
Corrected Total	383	124.69048			

All hypotheses are accepted as the p-value for all the independent variables is less than 0.05 as depicted in Table 8 [63]. Thus, Performance Expectancy (p=0.0078), Habit (p=<.0001), Price Value (p=0.0063), Social Influence (p=<.0001), Complexity (p=<.0001) and Trialability (p=0.0035) have a significant relationship with the dependent variable, behavioural intention to use mobile apps by Gen Y in Malaysia. Therefore, H1, H2, H3, H4, H5 and H6 are accepted and supported. Thus, the equation of the MLR is devised as follows:

$$Y = 1.18265 + 0.12157 (PE) + 0.27286 (HB) + 0.07459 (PV) + 0.25147 (SI) - 0.14390 (CP) + 0.12270 (TL).$$

Table-8. Multiple linear regression: Parameter estimates

Variables	DF	Parameter Estimates	Standardized Estimate	t-value	Pr> t	Tolerance	Variance Inflation
Intercept	1	1.18265	0.23347	5.07	<.0001		0
PE	1	0.12157	0.04547	2.67	0.0078	0.70310	1.42228
HB	1	0.27286	0.04113	6.63	<.0001	0.62856	1.59094
PV	1	0.07459	0.02717	2.74	0.0063	0.84853	1.17851
SI	1	0.25147	0.03895	6.64	<.0001	0.77201	1.29533
CP	1	-0.14390	0.03069	-4.69	<.0001	0.83174	1.20229
TL	1	0.12270	0.04180	2.94	0.0035	0.90552	1.10434

## 5. DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

### 5.1. Discussions of Major Findings

The result indicates that performance expectancy, habit, price value, social influence and trialability are positively related to behavioral intention to use mobile apps by Gen Y in Malaysia, whereas complexity was negatively related to behavioural intention. Therefore, all the six hypotheses are accepted, since the p-value is greater than 0.05.

The finding showed that H1 is supported. This result shows a consistency with previous empirical researches conducted by Lee, et al. [31], Lai [32], An, et al. [19], Wong, et al. [33], Morosan and DeFranco [18] and Vinnik.V. [64] which concluded that performance expectancy had a direct positive relationship towards behavioral intention to use mobile apps.

The result implied that H2 is supported. The outcome of positive influence is inclined to the findings of Venkatesh, et al. [14], Slade, et al. [15], Nair, et al. [37], Yuan, et al. [36] and Vinnik.V. [64] wherein habit has a positive relationship with behavioural intention.

The positive correlation between price value and behavioural intention in using apps by Gen Y is also validated in this study. The results are consistent with Yang [41], Yuan, et al. [36], Salim, et al. [42] and Vinnik.V. [64] who proved that price value has a positive relationship with behavioural intention. Henceforth, the result revealed that hypothesis 3 (H3) is supported.

The finding demonstrated that social influence and behavioural intention in using apps by Gen Y are positively correlated. This result is congruent with the research by Guo [43], Bhatiasevi [44], Hsu and Lin [35] and Yuan, et al. [36] that social influence has a notable influence towards behavioral intention to use apps. Thus hypothesis 4 (H4) is also supported.

Hypothesis 5 (H5) studies the correlation between complexity and behavioural intention to use mobile apps by Gen Y in Malaysia. It signifies that a negative relationship between complexity and behavioural intention to use mobile apps existed. Hence, H5 is accepted. The result is congruent with the outcomes of prior studies by Lee, et al. [47], Jung, et al. [45] and Elogie, et al. [21].

The result also indicated that there is a significant correlation between trialability and behavioural intention to use mobile apps by Gen Y in Malaysia. The result is congruent with the past researches conducted by Folorunso, et al. [49], Lee, et al. [47] and Koçak, et al. [50]. Thus, Hypothesis 6 (H6) is accepted.

### *5.2. Theoretical Implications*

This research figures out the importance of the proposed conceptual model of UTAUT2 and Diffusion Innovation Theory in explaining the factors against the behavioural intention to use mobile apps by Gen Y in Malaysia. The conceptual framework centralized on how the six factors affect the behavioural intention to use mobile apps. Based on the result, the R-square is valued at 0.4864. This indicates that 48.64% of the dependent variable, the behavioural intention to use mobile apps by Gen Y in Malaysia can be explained by the six independent variables.

Besides, there are relatively less past studies that pivot two theories together to explain the behavioural intention especially addressing the technology in Malaysia. Therefore, this research aspires to provide a vivid insight into the future researchers that two theories can be fused together in research to explain the behavioural intention. In a nutshell, UTAUT2 and Diffusion Innovation Theory are suitable theories that can be considered by any future researchers who conduct research related to technological innovation.

### *5.3. Managerial Implications*

This study caters implications to Gen Y and society. It becomes a salient source of reference to the societies as societies inclusive of Gen Y are aware of the determinants that drive them to use mobile apps. For instance, users favoured Instagram because they can post and share astonishing photos with their followers.

Behind of this well-liked app, performance expectancy plays a significant role as designers focus on building functions that fulfil the users' needs. Additionally, this study is useful for apps' designers, as designers are able to design apps to suit users' preferences and expectations through analysing the variables. For instance, traffic congestion becomes a common norm in daily life and apps designers want to create an app that reminds the users about the traffic congestion on the road and the average travelling time to reach a destination. Hence, Waze app is a traffic and navigation app had created and it received tremendous popularity.

Undeniably, apps could be used for a learning tool. Parents and teachers can use apps to cultivate learning through animated graphics, pictures, audio and video to their kids so that the kids will find learning interesting. Moreover, societies are glued to the apps as they unconsciously formed a habit to post and share videos and pictures of families and friends every day by using apps. It becomes a norm for them to use apps daily in their life.

### *5.4. Limitations and Recommendations for Future Research*

One of the limitations is that the 5-point Likert scale is considered as close-ended questions which limit the respondents for voicing out their own opinions. The targeted respondents are being restricted by the choices available in the survey questionnaires. To have a better understanding of respondents' thinking, the open-ended question is suggested in the questionnaire in order to provide the opportunity to the respondents in giving their

own opinion. Besides, data collected from the respondents may not be fully accurate as the respondents might simply fill in the survey due to the limited time available. In order to deal with the time consuming problem, it is recommended to conduct a Face-to-Face interview to get more reliable information.

Furthermore, it is suggested to include other states such as Penang and Melaka instead of just focusing on few states in order to get more detail and robust result as different states consist different respondents whereby different responses will be collected to generate different results. Moreover, the cross sectional approach followed in this study could be one of the limitations. The behavioural intention may change over a period of time. Results and data being collected might be irrelevant in the future, as those data only reflect the current position. In order to get a more accurate result, longitudinal approach is recommended, because this approach can look at a longer period of time instead of just focusing a particular time frame. Lack of gender issue became a limitation in this study. In this study, the female respondents are more than 56.77%, while male respondents consisted only 43.23%. It may not be the most perfect representation of the Gen Y population and affect the accuracy of the results. It is suggested that future researchers shall set a sample size, which can control the gender balance problem to get a more reliable result.

## 6. CONCLUSION

This research explored the drivers that influence the behavioural intention to use mobile apps widely in Malaysia. The independent variables in this study have a significant influence on behavioural intention to use mobile apps. The research questions of this study have been answered.

**Funding:** This study received no specific financial support.

**Competing Interests:** The authors declare that they have no competing interests.

**Contributors/Acknowledgement:** All authors contributed equally to the conception and design of the study.

## REFERENCES

- [1] A. Dovaliene, Z. Piligrimiene, and A. Masiulyte, "Factors influencing customer engagement in mobile applications," *Engineering Economics*, vol. 27, pp. 205-212, 2016. Available at: <https://doi.org/10.5755/j01.ee.27.2.14030>.
- [2] C. K. Wong, "8 facts on mobile commerce growth in Malaysia." Available: <http://www.ecommercemilo.com/2016/04/8-facts-on-mobile-commerce-growth>, 2016.
- [3] A. Meola, "In-app purchases overwhelm new app sales." Available: <http://www.businessinsider.com/mobile-users-want-free-apps-but-theyre-still-willing-to-pay-2016-5?IR=T&r=US&IR=T>. [Accessed June 10, 2016], 2016.
- [4] S. M. Crampton and J. W. Hodge, "Generation Y: uncharted territory," *Journal of Business & Economics Research*, vol. 7, pp. 1-6, 2009. Available at: <https://doi.org/10.19030/jber.v7i4.2272>.
- [5] M. Prensky, "Digital natives, Digital immigrants. On the horizon," *Questionnaire Design*, vol. 9, pp. 1-6, 2001. Available at: <https://doi.org/10.1108/10748120110424816>.
- [6] D. B. Valentine and T. L. Powers, "Generation Y values and lifestyle segments," *Journal of Consumer Marketing*, vol. 30, pp. 597-606, 2013. Available at: <https://doi.org/10.1108/jcm-07-2013-0650>.
- [7] H. Chen, "Generation Y and the post 80s' culture identity: A cross cultural perspective." Available: [http://www-personal.umich.edu/~prestos/Downloads/DC/pdfs/Redman\\_Sept29\\_Chen2008.pdf](http://www-personal.umich.edu/~prestos/Downloads/DC/pdfs/Redman_Sept29_Chen2008.pdf). [Accessed June 28, 2016], 2008.
- [8] P. Suci, "Mobile apps for and by generation Y." Available: <https://www.allbusiness.com/mobile-apps-for-and-by-generation-y-14690659-1.html>. [Accessed June 28, 2016], 2016.
- [9] Number of Mobile App Hours, "Per user in the United States in June 2015, by age group and device. (2016)." Available: <http://www.statista.com/statistics/323522/us-user-mobile-app-engagement-age/>. [Accessed June 25, 2016], 2016.

- [10] H. Chen, "Asia's smartphone addiction." Available: <http://www.bbc.com/news/world-asia-33130567>. [Accessed June 12, 2016], 2015.
- [11] L. Al-Sharqi, K. Hashim, and I. Kutbi, "Perceptions of social media impact on students' social behavior: A comparison between arts and science students," *International Journal of Education and Social Science*, vol. 2, pp. 122-131, 2015.
- [12] M. A. Harris, R. Brookshire, and A. G. Chin, "Identifying factors influencing consumers' intent to install mobile applications," *International Journal of Information Management*, vol. 36, pp. 441-450, 2016. Available at: <https://doi.org/10.1016/j.ijinfomgt.2016.02.004>.
- [13] H. S. Lee, T. G. Kim, and J. Y. Choi, "A study on the factors affecting smart phone application acceptance," in *2012 3rd International Conference on e-Education, e-Business, e-Management and e-Learning*, 2012, pp. 1-8.
- [14] V. Venkatesh, J. Y. Thong, and X. Xu, "Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology," *MIS Quarterly*, vol. 36, pp. 157-178, 2012. Available at: <https://doi.org/10.2307/41410412>.
- [15] E. L. Slade, M. Williams, and Y. Dwivedi, "An extension of the UTAUT 2 in a healthcare context," in *UK Academy for Information Systems Conference Proceedings*, 2013, pp. 1-14.
- [16] V. Venkatesh, M. G. Morris, G. B. Davis, and F. D. Davis, "User acceptance of information technology: Toward a unified view," *MIS Quarterly*, vol. 27, pp. 425-478, 2003. Available at: <https://doi.org/10.2307/30036540>.
- [17] T. Escobar-Rodríguez and E. Carvajal-Trujillo, "Online purchasing tickets for low cost carriers: An application of the unified theory of acceptance and use of technology (UTAUT) model," *Tourism Management*, vol. 43, pp. 70-88, 2014. Available at: <https://doi.org/10.1016/j.tourman.2014.01.017>.
- [18] C. Morosan and A. DeFranco, "It's about time: Revisiting UTAUT2 to examine consumers' intentions to use NFC mobile payments in hotels," *International Journal of Hospitality Management*, vol. 53, pp. 17-29, 2015. Available at: <https://doi.org/10.1016/j.ijhm.2015.11.003>.
- [19] L. P. An, Y. Q. Han, and L. Y. Tong, "Study on the factors of online shopping intention for fresh agricultural products based on UTAUT2," in *Information Technology and Mechatronics Engineering Conference (ITOEC 2016)*, 2016, pp. 303-306.
- [20] E. M. Rogers, *Diffusion of innovations*, 3rd ed. London: Free Press, 1983.
- [21] A. A. Elogie, T. J. Ikenwe, and I. Idubor, "Factors influencing the adoption of smartphones among undergraduate students in Ambrose Alli University, Ekpoma, Nigeria," *Library Philosophy and Practice (e-journal)*, vol. 1257, pp. 1-14, 2015.
- [22] G. H. Tanakinjal, K. R. Deans, and B. J. Gray, "Third screen communication and the adoption of mobile marketing: A Malaysia perspective," *International Journal of Marketing Studies*, vol. 2, p. 36, 2010. Available at: <https://doi.org/10.5539/ijms.v2n1p36>.
- [23] X. Zhang, "Using diffusion of innovation theory to understand the factors impacting patients' acceptance and use of consumer e-health innovations in a primary health care. (Unpublished doctoral thesis)," University of Wollongong, 2015.
- [24] H. McMullen, C. Griffiths, W. Leber, and T. Greenhalgh, "Explaining high and low performers in complex intervention trials: A new model based on diffusion of innovations theory," *Trials*, vol. 6, p. 242, 2015. Available at: <https://doi.org/10.1186/s13063-015-0755-5>.
- [25] A. Olsson, K. Skovdahl, and M. Engstrom, "Using diffusion of innovation theory to describe perceptions of a passive positioning alarm among persons with mild dementia: A repeated interview study," *BMC Geriatrics*, vol. 16, p. 3, 2016. Available at: <https://doi.org/10.1186/s12877-016-0183-8>.
- [26] J.-T. E. Tang and C. Chiang, "Towards an understanding of the behavioral intention to use mobile knowledge management," *WSEAS Transactions on Information Science and Applications*, vol. 6, pp. 1601-1613, 2009.
- [27] G. Turhan and A. Ozbek, "Factors affecting consumers' behavioural intention towards apparel stores: A test of the mediating role of brand satisfaction," *FIBRES & TEXTILES in Eastern Europe*, vol. 21, pp. 7-13, 2013.

- [28] W.-C. Tsai, "A study of consumer behavioral intention to use e-books: The technology acceptance model perspective," *Innovative Marketing*, vol. 8, pp. 55-66, 2012.
- [29] Ş. Gökçearsan, F. K. Mumcu, T. Haşlaman, and Y. D. Çevik, "Modelling smartphone addiction: The role of smartphone usage, self-regulation, general self-efficacy and cyberloafing in university students," *Computers in Human Behavior*, vol. 63, pp. 639-649, 2015. Available at: <https://doi.org/10.1016/j.chb.2016.05.091>.
- [30] C.-H. Hsiao, J.-J. Chang, and K.-Y. Tang, "Exploring the influential factors in continuance usage of mobile social Apps: Satisfaction, habit, and customer value perspectives," *Telematics and Informatics*, vol. 33, pp. 342-355, 2016. Available at: <https://doi.org/10.1016/j.tele.2015.08.014>.
- [31] P. Lee, I. Nadirah, P. Kulasagaran, A. Azlee, R. Wong, and J. Edward, "A family that eats together surfs together." Available: <http://www.themalaymailonline.com/malaysia/article/a-family-that-eats-together-surfs-together>. [Accessed June 12, 2016], 2015.
- [32] I. K. Lai, "Traveler acceptance of an app-based mobile tour guide," *Journal of Hospitality & Tourism Research*, vol. 39, pp. 401-432, 2015. Available at: <https://doi.org/10.1177/1096348013491596>.
- [33] C.-H. Wong, G. W.-H. Tan, S.-P. Loke, and K.-B. Ooi, "Adoption of mobile social networking sites for learning?," *Online Information Review*, vol. 39, pp. 762-778, 2015. Available at: <https://doi.org/10.1108/oir-05-2015-0152>.
- [34] A. Raman and Y. Don, "Preservice teachers' acceptance of learning management software: An application of the UTAUT2 model," *International Education Studies*, vol. 6, pp. 157-164, 2013. Available at: <https://doi.org/10.5539/ies.v6n7p157>.
- [35] C.-L. Hsu and J. C.-C. Lin, "What drives purchase intention for paid mobile apps?—An expectation confirmation model with perceived value," *Electronic Commerce Research and Applications*, vol. 14, pp. 46-57, 2015. Available at: <https://doi.org/10.1016/j.elerap.2014.11.003>.
- [36] S. Yuan, W. Ma, S. Kanthawala, and W. Peng, "Keep using my health apps: Discover users' perception of health and fitness apps with the UTAUT2 model," *Telemedicine and e-Health*, vol. 21, pp. 735-741, 2015. Available at: <https://doi.org/10.1089/tmj.2014.0148>.
- [37] P. K. Nair, F. Ali, and C. L. Lim, "Factors affecting acceptance & use of rewind validating the extended unified theory of acceptance and use of technology," *Journal of Enterprise Information Management*, vol. 28, pp. 443-488, 2015.
- [38] C. M. V. Winkle, J. N. H. Bueddefeld, K. J. MacKay, and E. Halpenny, "Mobile device use at festivals: The role of habit," pp. 1-5, 2016.
- [39] I. Phang, O. Zaiton, and C. H. Cheuk, "Young adult Malaysian consumers' Intention to shop via mobile shopping apps," *Asian Journal of Business Research*, vol. 8, pp. 18-37, 2018. Available at: <https://doi.org/10.14707/ajbr.180041>.
- [40] L. D. Harsono and L. A. Suryana, "Factors affecting the use behavior of social media using UTAUT 2 model," in *Proceedings of the First Asia-Pacific Conference on Global Business, Economics, Finance and Social Sciences*, 2014, pp. 1-14.
- [41] S. Yang, "Understanding undergraduate students' adoption of mobile learning model: A perspective of the extended UTAUT2," *Journal of Convergence Information Technology*, vol. 8, pp. 969-979, 2013. Available at: <https://doi.org/10.4156/jcit.vol8.issue10.118>.
- [42] B. F. Salim, M. H. Mahmoud, and H. M. Khair, "Perceived factors affecting the internet banking implementation in Sudan: An application of (UTAUT2)," *International Journal of Applied Business and Economic Research*, vol. 14, pp. 1-16, 2016.
- [43] Y. Guo, "Moderating effects of gender in the acceptance of mobile SNS Based on UTAUT model," *International Journal of Smart Home*, vol. 9, pp. 203-216, 2015. Available at: <https://doi.org/10.14257/ijsh.2015.9.1.22>.
- [44] V. Bhatiasevi, "An extended UTAUT model to explain the adoption of mobile banking," *Information Development*, vol. 32, pp. 1-16, 2015.
- [45] J.-H. Jung, Y. Sung, and L. Wei-Na, "Smart choice: Smartphone users' Intentions to accept mobile advertising," *Online Journal of Communication and Media Technologies*, vol. 3, pp. 187-202, 2013.



- [46] I. M. Al-Jabri and M. S. Sohail, "Mobile banking adoption: application of innovation diffusion theory," *Journal of Electronic Commerce Research*, vol. 13, pp. 379-391, 2012.
- [47] Y.-H. Lee, Y.-C. Hsieh, and C.-N. Hsu, "Adding innovation diffusion theory to the technology acceptance model: Supporting employees' intentions to use e-learning systems," *Journal of Educational Technology & Society*, vol. 14, pp. 124-137, 2011.
- [48] T. S. Ntemana and W. Olatakun, "Analysing the influence of diffusion of innovation attributes on lecturers' attitudes toward information and communication technologies," *An Interdisciplinary Journal on Humans in ICT Environments*, vol. 8, pp. 179-197, 2012. Available at: <https://doi.org/10.17011/ht/urn.201211203034>.
- [49] O. Folorusno, R. O. Vincent, A. F. Adekoya, and A. O. Ogunde, "Diffusion of innovation in social networking sites among university students," *International Journal of Computer Science and Security*, vol. 4, pp. 361-372, 2010.
- [50] N. G. Koçak, S. Kaya, and E. Erol, "Social media from the perspective of diffusion of innovation approach," *The Macrotheme Review*, vol. 2, pp. 22-29, 2013.
- [51] R. D. Fricker and M. Schonlau, "Advantages and disadvantages of internet research surveys: Evidence from the literature," *Field Methods*, vol. 14, pp. 347-367, 2012. Available at: <https://doi.org/10.1177/152582202237725>.
- [52] C. M. Mulvihill and N. L. Haworth, "Australasian Road Safety Research Policing Education Conference Proceedings. Strachan, G. (ed.)," in *Australasian Road Safety Research Policing Education Conference*, Wellington New Zealand, 2005, pp. 1-12.
- [53] M. Saunders, P. Lewis, and A. Thornhill, *Research methods for business students*, 6th ed. Harlow, UK: Pearson Education, 2012.
- [54] J. Eckleberry-Hunt and J. Tucciarone, "The challenges and opportunities of teaching "Generation Y"," *Journal of Graduate Medical Education*, vol. 3, pp. 458-462, 2011.
- [55] K. Suresh, S. V. Thomas, and G. Suresh, "Design, data analysis and sampling techniques for clinical research," *Annals of Indian Academy of Neurology*, vol. 14, pp. 287-290, 2011. Available at: <https://doi.org/10.4103/0972-2327.91951>.
- [56] T. R. Hinkin, "A review of scale development practices in the study of organizations," *Journal of Management*, vol. 21, pp. 967-988, 1995. Available at: <https://doi.org/10.1177/014920639502100509>.
- [57] H. Y. Chong, "A simple guide to the item response theory (IRT) and rasch modeling." Available: <http://www.creative-wisdom.com/computer/sas/IRT.pdf>. [Accessed August 3, 2016], 2016.
- [58] Pilot Testing Data Collection Instruments, Available: <http://tobaccoeval.ucdavis.edu/documents/PilotTesting2.pdf>. [Accessed August 22, 2016], 2011.
- [59] V. Zumitzavan and J. Michie, *Personal knowledge management, leadership styles, and organisational performance: A case study of the healthcare industry in Thailand*. Singapore, SG: Springer Science Business Media, 2015.
- [60] L. Bartlett, "Pilot test for reliability and validity of a new assessment tool measuring relationships between individual health and environmental sustainability," *Health and Sustainability Assessment Tool*, pp. 1-51, 2013.
- [61] G. D. Garson, *Testing statistical assumptions*, 12th ed. Asheboro: Statistical Associates Publishing, 2012.
- [62] J. F. Hair, W. C. Black, and B. J. Babin, *Multivariate data analysis: A global perspective*. Upper Saddle River, New Jersey: Pearson Education, Inc., 2010.
- [63] R. Carver, "The case against statistical significance testing," *Harvard Educational Review*, vol. 48, pp. 378-399, 1978. Available at: <https://doi.org/10.17763/haer.48.3.t490261645281841>.
- [64] Vinnik.V., "User adoption of mobile application: Extension of UTAUT2 model." (Master Thesis), 2017.

*Views and opinions expressed in this article are the views and opinions of the author(s). Journal of Information shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.*