# Descriptive Findings Regarding Factors Influencing Mobile Application Acceptance among Millennial in Malaysia

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## Abstract

Although mobile phones have been used widely by millennial generation within the age group of 20-34 there is very limited knowledge about their intention to use mobile application. This paper presents descriptive results regarding factors influencing mobile application intention behavior among millennial based on the response of university students in Malaysia. Theoretical background of this study was based on a review of relevant model of technology acceptance and the second generation of the Unified Theory of Acceptance and Use of Technology (UTAUT2) was used as the theoretical basis for this study. Of 200 of questionnaire distributed within two months of data collection, 77 valid returned questionnaires were used for the analysis. A reliability as well as descriptive analysis were performed. Based on results, all factors have shown good Cronbach Alpha Values. Descriptively, the result has demonstrated high percentage and frequency in participants' agreement of the measurement items of the construct except for Social Influence. For future work, an inferential statistical analysis can be performed to uncover predicting power of the factors over the acceptance of the mobile application.

*Keywords:* Technology Acceptance, Mobile Application Use, UTAUT2

## 1. Introduction

Malaysia has shown a large number of users who use the Internet. Majority of them spent on the Internet at about five or more hours per day [1]. A number of users who used the Internet perceives similar online shopping belief in terms of how to evaluate the credibility of online shopping, advantages, disadvantages, and perceived risks associated with e-commerce [1]. Nowadays, it has become a phenomenon among youth in the middle age buy Muslim clothes via computer networks.

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Online shopping has been a growing phenomenon in all four corners of the world, in particular amongst countries possessing highly developed infrastructure available for marketing activities through the internet [2].According to survey that were based on online access across 60 countries, millennial age group turned out to make up the majority of online purchase intenders [3]. However, based on Southeast Asia perspective, Malaysian consumers are more likely to browse than to shop and this is unlikely happened in Filipinos, Vietnamese and Singaporeans [3]. Hence, it is very important to explore descriptively those factors influencing the online shopping behavioral intention among millennial age group in Malaysian context and to further encourage the online business to flourish.

Online shopping behavior also called online buying behavior and Internet shopping behavior refers to the process of purchasing products or services via the Internet [4]. Consumer behavior in online shopping is different from the consumer behavior in the physical market where consumer has the freedom to touch and feel product [5].

The study regarding the acceptance and adoption of technology have been discussed in many domains. Many theories involved and these include Theory of Reasoned Action, the Theory of Planned Behavior, the Technology Acceptance Model, the Diffusion of Innovation, and the Unified Theory of Acceptance and Use of Technology. Although UTAUT has been regarded as powerful predicting framework [6] this study opted to apply the second generation of the Unified Theory of Acceptance and Use of Technology (UTAUT2) [7] as a theoretical research model occupying three more related construct in the consumer technology acceptance namely hedonic motivation, price value and experience and habit. Thus, UTAUT2 could explore more various domain of technology [8] and especially related to mobile internet usage [9]. As the aim of this study is to descriptively explore the factors influencing the intention behavior using mobile application among millennial, mediating and moderating factors and analysis were excluded and only seven dependent constructs of UTAUT were used in the descriptive exploration. These seven constructs are: Performance expectancy [6-7], Effort expectancy [6-7], Social influence [6-7], Facilitating Conditions [6-7], Hedonic Motivation [7], Price Value [7] and Habit [7].

Performance expectancy is defined as the degree to which using a technology will provide benefits to consumers in performing certain activities [7]. According to Thomas et al. [10] performance expectancy is the degree to which the individuals believe that the use of the technologies will results in performance gains. Effort expectancy is the degree of ease associated with consumers' use of technology [7]. In addition, Effort expectancy also being defined as the extension of convenience perceived for using system [10]. Social influence is the extent to which consumers perceive that important others (e.g. family and friends) believe they should use a particular technology [6]. Besides, others explained it is the degree to which an individual perceives that others believe that he or she should use the new system [12]. Facilitating conditions refer to consumers' perceptions of the resources and support available to perform a behavior [7]. Hedonic motivation is defined as a fun or pleasure derived from using the technology, and it has been shown to play an important role in determining the acceptance and use of technology [7]. Price Value is regarded as the trade-off between the cost using the technology and perceived benefits

[13]. Habit has been defined as the extent to which people tend to behave automatically because studies [7]. Apart from the main construct, Behavioral Intention is mainly used as the indicator of technology acceptance. Behavioral intentions is referred as the degree to which a person will use any mobile application in the future [14].

## 2. Method

The target population for this study has been focused on millennial generation in Malaysia. A case study approach was chosen in this study involving students in several Malaysian universities students within Klang Valley. A two months snapshot data collection was performed. Of 200 distributions of questionnaire, 77 valid returned questionnaires were used for the analysis.

A descriptive analysis was performed using frequency and scoring techniques. The measurement items of this study were adopted from previous UTAUT2 study [7]. A five point scales ranging from scale 1 (Strongly Agree) to scale 5 (Strongly Disagree) were used to obtain descriptive information about each item of all the factors.

## 3. Result and Discussion

In this section, we present the descriptive result of the mobile application acceptance among millennial generation in Malaysia. The reliability analysis was executed on all construct and has resulted in good Cronbach Alpha Value (above 0.8) as shown in Table 1. This might be due to that this study adapt the reliable measurement items from the original UTAUT2.

The scoring of "Strongly Agree" and "Agree" were combined to represent the percentage of total agreement. In total, 33 measurement items was used in this descriptive analysis.

Table 1. Reliability Analysis

| Variable | Cronbach Alpha Value | No. of items |
|---|---|---|
| Performance Expectancy | 0.985 | 5 |
| Effort Expectancy | 0.823 | 4 |
| Social Influence | 0.709 | 5 |
| Facilitating Conditions | 0.940 | 4 |
| Hedonic Motivation | 0.935 | 4 |
| Price Value | 0.844 | 3 |
| Habit | 0.978 | 4 |
| Behavioral Intention | 0.978 | 4 |
| All Variables | 0.863 | 33 |

a. Performance Expectancy (PE)

This section presents the belief that the use of the technologies will results in performance gains. The frequency and percentage details for PE as shown in Table

2. Five items were used to obtain insights of Performance Expectancy. The result shows that 98% of participants is in total agreement suggesting that Performance Expectancy is an important factor in regard to mobile application use

Table 2. Frequency and Percentage of Performance Expectancy

| Scale | PE1 | PE2 | PE3 | PE4 | PE5 | Overall Percentage (%) |
|---|---|---|---|---|---|---|
| 1-Strongly Agree | 42 | 33 | 44 | 23 | 22 | 43 |
| 2-Agree | 31 | 41 | 32 | 54 | 54 | 55 |
| 3-Not Sure | 1 | 1 | 1 | 0 | 1 | 1 |
| 4-Disagree | 0 | 1 | 0 | 0 | 0 | 0 |
| 5-Strongly Disagree | 3 | 1 | 0 | 0 | 0 | 1 |

*Valid N = 77; Mean = 1.62; Mode= "2/Agree"*

b. Effort Expectancy (EE)

This section shows the usefulness of the technologies. Four items were used to obtain insights of Effort Expectancy. The frequency and percentage details for EE as shown in Table 3. The result shows that 90% of participants is in total agreement suggesting that Effort Expectancy is an important factor in regard to mobile application use.

Table 3. Frequency and Percentage of Effort Expectancy

| Scale | EE1 | EE 2 | EE 3 | EE 4 | Overall Percentage (%) |
|---|---|---|---|---|---|
| 1-Strongly Agree | 23 | 21 | 23 | 24 | 30 |
| 2-Agree | 50 | 49 | 47 | 40 | 60 |
| 3-Not Sure | 3 | 5 | 4 | 11 | 1 |
| 4-Disagree | 0 | 0 | 1 | 1 | 7 |
| 5-Strongly Disagree | 1 | 2 | 2 | 1 | 2 |

*Valid N = 77; Mean = 1.85; Mode= "2/Agree"*

c. Social Influence (SI)

This section shows the insight of environmental factor in regard to mobile application use. Five items were used to obtain the perception of Social Influence. The frequency and percentage details for SI as shown in Table 4. The result shows that 69% of participants is in total agreement suggesting that Social Influence is moderately an important factor in regard to mobile application use.

Table 4. Frequency and Percentage of Social Influence

| Scale | SI1 | SI 2 | SI 3 | SI 4 | SI 5 | Overall Percentage (%) |
|---|---|---|---|---|---|---|
| 1-Strongly Agree | 18 | 12 | 11 | 11 | 15 | 17 |
| 2-Agree | 40 | 34 | 36 | 45 | 45 | 52 |
| 3-Not Sure | 16 | 24 | 23 | 12 | 8 | 22 |
| 4-Disagree | 2 | 5 | 4 | 2 | 8 | 5 |
| 5-Strongly Disagree | 1 | 2 | 3 | 7 | 1 | 4 |

*Valid N = 77; Mean = 1.85; Mode= "2/Agree"*

d. Facilitating Conditions (FC)

This section shows the perceptions regarding resources and support available to perform a behavior. The frequency and percentage details for FC as shown in Table 5. Four items were used to obtain insights of Facilitating Conditions. The result shows that 95% of participants is in total agreement suggesting that Facilitating Conditions is an important factor in regard to mobile application use.

Table 5. Frequency and Percentage of Facilitating Conditions

| Scale | FC1 | FC 2 | FC 3 | FC 4 | Overall Percentage (%) |
|---|---|---|---|---|---|
| 1-Strongly Agree | 21 | 22 | 19 | 25 | 28 |
| 2-Agree | 49 | 50 | 51 | 50 | 65 |
| 3-Not Sure | 5 | 5 | 5 | 1 | 5 |
| 4-Disagree | 2 | 0 | 2 | 1 | 2 |
| 5-Strongly Disagree | 0 | 0 | 0 | 0 | 0 |

*Valid N = 77; Mean = 1.8; Mode= "2/Agree"*

e. Hedonic Motivation (HM)

This section presents the insights of fun or pleasure derived from using a technology. The frequency and percentage details for HM as shown in Table 6. Four items were used to obtain insights of Hedonic Motivation. The result shows that 99% of participants is in total agreement suggesting that Hedonic Motivation is an important factor in regard to mobile application use.

Table 6. Frequency and Percentage of Hedonic Motivation

| Scale | HM1 | HM 2 | HM 3 | HM 4 | Overall Percentage (%) |
|---|---|---|---|---|---|
| 1-Strongly Agree | 21 | 27 | 20 | 15 | 27 |
| 2-Agree | 53 | 50 | 57 | 62 | 72 |
| 3-Not Sure | 3 | 0 | 0 | 0 | 1 |
| 4-Disagree | 0 | 0 | 0 | 0 | 0 |
| 5-Strongly Disagree | 0 | 0 | 0 | 0 | 0 |

*Valid N = 77; Mean = 1.74; Mode= "2/Agree"*

f. Price Value (PV)

This section exhibits insights regarding the trade-off between the cost of using the technology and the perceived benefits. The frequency and percentage details for PV as shown in Table 7. Three items were used to obtain insights of Price Value. The result shows that 98% of participants is in total agreement suggesting that Price Value is an important factor in regard to mobile application use.

Table 7. Frequency and Percentage of Price Value

| Scale | PV1 | PV2 | PV3 | Overall Percentage (%) |
|---|---|---|---|---|
| 1-Strongly Agree | 22 | 34 | 35 | 39 |
| 2-Agree | 55 | 43 | 38 | 59 |
| 3-Not Sure | 0 | 0 | 2 | 1 |
| 4-Disagree | 0 | 0 | 1 | 0.5 |
| 5-Strongly Disagree | 0 | 0 | 1 | 0.5 |

*Valid N = 77; Mean = 1.64; Mode= "2/Agree"*

g. Habit (H)

This section exhibits the insights regarding the extent to which an individual believes the behavior to be automatic. The frequency and percentage details for Habit as shown in Table 8. Four items were used to obtain insights of Habit. The result shows that 98% of participants is in total agreement suggesting that Habit is an important factor in regard to mobile application use.

Table 8. Frequency and Percentage of Habit

| Scale | H1 | H2 | H3 | H4 | Overall Percentage (%) |
|---|---|---|---|---|---|
| 1-Strongly Agree | 28 | 29 | 28 | 26 | 36 |
| 2-Agree | 48 | 46 | 47 | 51 | 62 |
| 3-Not Sure | 0 | 2 | 2 | 0 | 1.5 |
| 4-Disagree | 1 | 0 | 0 | 0 | 0.5 |
| 5-Strongly Disagree | 0 | 0 | 0 | 0 | 0 |

*Valid N = 77; Mean = 1.66; Mode= "2/Agree"*

This section exhibits the insights regarding the extent to which an individual believes the behavior to be automatic. Four items were used to obtain insights of Habit. The result shows that 98% of the respondents agree that Habit is an important factor in regard to mobile application use.

h. Behavioral Intention (BI)

The result shows that 100% of the respondents agreed that Behavioral Intention is the valid indicator for the acceptance of mobile application as shown in Table 9.

Table 9. Frequency and Percentage of Behavioral Intention

| Scale | BI 1 | BI 2 | BI 3 | BI 4 | Overall Percentage (%) |
|---|---|---|---|---|---|
| 1-Strongly Agree | 25 | 21 | 26 | 23 | 31 |
| 2-Agree | 52 | 56 | 51 | 54 | 69 |
| 3-Not Sure | 0 | 0 | 0 | 0 | 0 |
| 4-Disagree | 0 | 0 | 0 | 0 | 0 |
| 5-Strongly Disagree | 0 | 0 | 0 | 0 | 0 |

*Valid N = 77; Mean =1.7; Mode= "2/Agree"*

## 4. Discussion and Conclusion

The study revealed descriptive results regarding mobile application acceptance using the construct of UTAUT2. Since the descriptive analyses are not meant to present the inferential statistics or in particular to infer the factors towards the acceptance of the technology being studied but the results can be employed to exhibit the basic features of the data in this study or what is going on with the data.

As can be seen from the findings, six constructs except for social influence have shown very high percentage and frequency in the agreement of the items being measured. In particular Performance Expectancy represent the highest percentage for 1-Strongly Agree (43%) followed by Price Value (39%) and Habit (36%). The most frequent occurring value for all factors turned out to be 2-Agree scale. This study also revealed that among millennials, Social Influence as an extent to which consumers perceive that influence of other people to use mobile application has been discovered to be less descriptively significant compared with other factors suggested by UTAUT2. Overall the items of the questionnaire can be regarded valid to be used in the next stage of analysis as the reliability analyses of all constructs have shown good value.

There are number of limitations in this paper. The study was conducted using small sample size due to the limitation of snapshot timeframe data collection. Hence, the result cannot be simply inferred to other study context. Furthermore, the result only exhibits the descriptive part of the study. Further enhanced work employing stronger inferential statistical analysis such as multiple regression or in-depth qualitative interviews should be conducted as so to present a better insight over mobile application acceptance among millennium across the country.

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## Appendix A: List of Items

| Construct | Items |
|---|---|
| **Performance Expectancy** | PE1: I find mobile Internet useful in my daily life. |
| | PE2: Using mobile Internet increases my chances of achieving things that are important to me. (dropped) |
| | PE3: Using mobile Internet helps me accomplish things more quickly. |
| | PE4: Using mobile Internet increases my productivity. |
| | PE5: Overall, I would find mobile apps to be advantageous |
| **Effort Expectancy** | EE1: Learning how to use mobile Internet is easy for me. |
| | EE2: My interaction with mobile Internet is clear and understandable. |
| | EE3: I find mobile Internet easy to use. |
| | EE4: It is easy for me to become skillful at using mobile Internet. |
| **Social Influence** | SI1: People who are important to me think that I should use mobile apps. |
| | SI2: People who influence my behavior think that I should use mobile apps. |
| | SI3: People whose opinions that I value prefer that I use mobile apps. |
| | SI4: Friend's suggestion and recommendation will affect my decision to use mobile apps. |
| | SI5: I would use mobile apps because the proportion of my friends uses mobile apps. |
| **Facilitating Conditions** | FC1: I have the resources necessary to use mobile apps. |
| | FC2: I have the knowledge necessary to use mobile apps. |
| | FC3: Mobile apps are compatible with other technologies I use. |
| | FC4: I can get help from others when I have difficulties using mobile apps. |
| **Hedonic Motivation** | HM1. Using mobile Internet is fun. |
| | HM2. Using mobile Internet is enjoyable. |
| | HM3. Using mobile Internet is very entertaining. |
| | HM4: Using mobile apps gives me pleasure. |
| | HM5: Using mobile apps is exciting. |
| **Price Value** | PV1: Mobile apps are reasonably priced. |
| | PV2: Mobile apps are a good value for money. |
| | PV3: At the current price, mobile apps provide good value. |
| **Habit** | H1: The use of mobile apps has become a habit for me. |
| | H2: I am addicted to using mobile apps. |
| | H3: I must use mobile apps. |
| | H4: Using mobile apps has become natural to me. |

| | |
|---|---|
| **Behavioral intention** | B1: I intend to continue using mobile apps in the future. |
| | B2: I will always try to use mobile apps in my daily life. |
| | B3: I plan to continue to use mobile apps frequently. |
| | B4: I will recommend others to use mobile apps. |