

## **Factors Moderating Students Adoption Decisions of Mobile Commerce**

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### **Abstract**

*The purpose of the study is to examine the factors that moderate student's adoption decisions of mobile commerce. The research employs the Technology Acceptance Model to examine student's perceived benefits and perceived barriers of using m-commerce in relation to student demographic factors such as gender, age, year of study, and college of study that moderate students adoption decisions of m-commerce. The study adopts a quantitative approach based on questionnaire development and distribution that resulted in a total sample of 1000 students. Empirical data was analyzed using SPSS-20 software. First, in relation to gender, results indicate that overall male students perceive more benefits in dealing with m-commerce than female students do. Second, concerning age, results show that students who are in the age group of "17-19 feel more benefits in dealing with m-commerce than the students whose age are "20-more". Third, concerning year of study, findings show that students who are freshman or sophomore feel more benefits in dealing with m-commerce than junior and senior students do. Fourth, in relation to college of study, results show that students who are studying in public universities feel more benefits in dealing with m-commerce than students that study in private universities.*

**Keywords:** Mobile Commerce, Perceived Usefulness, Perceived Ease of Use, Gender, Age.

### **Introduction**

This research explores the phenomenon of mobile commerce using the technology acceptance model (TAM) (Davis, 1986; 1989), perceived benefits and perceived barriers in relation various demographic factors. Mobile commerce (m-commerce) explains any transaction-based activity that involves monetary value performed directly or indirectly through a wireless telecommunication network (Barnes, 2002; Yang, Chye, Fern, and Kang, 2015). Nowadays smartphones are not solely considered mediums for direct purchases; they are also considered an important tool for online product comparison from actual store showrooms.

This study aims to contribute to literature by exploring the factors that affect university student's use of m-commerce in relation to their demographics: gender, age, year of study, and college of study in Kuwait. No studies have previously examined the moderating role of gender, age, students' year of study, and college of study in relation to m-commerce adoption. A recent study examined the relationship of gender differences on m-commerce adoption in Jordan using the TAM3 perspective (Faqih & Jaradat, 2015). As m-commerce adoption is rising on all scales there is an increasing need to identify the moderating role of demographics and its effect on m-commerce adoption especially in the growing student population. Therefore, to fill this gap and contribute to the m-commerce literature in developing countries this research has three main objectives.

First, to explore the moderating role of demographics namely, gender, age, year of study (freshman, sophomore, junior, or senior), and college of study (private or public university) and its effect on the adoption of m-commerce. Second, the TAM is utilized to understand the relationship of user's perceived ease of use and perceived usefulness in relation to student's demographic factors. Third, the study examines student's perceived benefits (key drivers) and perceived barriers (key inhibitors) of m-commerce in relation to demographic factor that either encourage or discourage m-commerce adoption in Kuwait.

### ***Review of Literature***

In an effort to understand user acceptance and adoption of m-commerce this research explores two important relationship. First, using the TAM model to examine the relationship of user demographics with perceived usefulness and ease of use. Second, to study the influence of student's demographics on the perceived benefits and perceived barriers of m-commerce when making the decision to adopt the technology.

### ***Theoretical Background***

The TAM model was adapted from the Theory of Reasoned Action (TRA)(Ajzen and Fishbein, 1980)and developed further by Davis (1986; 1989). The TAM is nowa widely accepted model that consists of two main factors that determine a person's intention to use a technology, perceived ease of use (PEOU) and perceived usefulness (PU).The TAM constructs perceived ease of use and perceived usefulness were testedin relation to a user's behavioral intention (BI) to adopt a technology by undergoing three main experiments to uncover any biases that may occur when using the TAM(Davis &Venkatesh, 1996).

#### **Perceived Usefulness and Perceived Ease of Use**

According to the TAM model perceived usefulness (PU) and perceived ease of use (PEOU) of a certain technology affects a user's decision in adopting or rejecting to adopt a technology (Davis, 1986; 1989). Perceived ease of use is when a user perceives using a certain system or technology will not require a lot of effort and easy to master (Davis, 1989). On the other hand, perceived usefulness is when the user believes that using a certain system or technology would increase their performance in their work context (Davis, 1989). Plenty of studies over time have used the TAM model to examine user acceptance of technology. Among them is a study that examined perceived ease of use and perceived usefulness of m-commerce to understand user acceptance of it (Wu, & Wang, 2005), while other studies focused on the TAM in relation to gender and age (Li, Glass, & Records, 2008).

#### **Perceived Benefits and Perceived Barriers**

Previous studies indicated perceived benefits and perceived barriers of a certain technology are considered important predictors of a person's intention to adopt and use technology (Carlsson, Hyvonen, Repo, and Walden, 2005; Ankar & Walden, 2003). These studies claim that a person's perceived benefits and perceived barriers of a certain technology affect their adoption decisions and intentions to use the technology. A hierarchal model was developed to identify all the barriers affecting the growth of m-commerce in developing countries leading to a main concern that mobile usage is increasing at a very high rate while m-commerce services remain very basic (Khan, Talib & Faisal, 2015).

#### **User Demographics**

Previous studies found that the adoption of m-commerce are influenced demographic factors of users such as gender, age, income, work, family structure and marital status (Okazaki, 2006). Another study also found an important relationship between user demographics and user acceptance of m-commerce (Min, Ji, & Qu, 2008).

## Gender

In relation to gender, previous studies used the TAM to examine gender differences to understand the adoption and use of technology in an organizational context (Venkatesh & Morris, 2000). Evidence indicates women were affected more by technology's ease of use more than men (Venkatesh & Morris, 2000). Previous studies have indicated that females are less likely to adopt and use technology than males. The reason behind these findings indicate that females are usually more hesitant than males to engage and adopt new technologies and even choose a future career that is related to technology (Michie & Nelson, 2006; Reinen & Plomp, 1993; Shuttleworth, 1992; Wood & Li, 2005).

However, other studies with conflicting findings indicate that with time females are adopting and accepting new technologies more than the past, where they are embracing technology usage such as personal computers and its applications at work and home (Rainer, Laosethakul, & Astone, 2003). Concerning e-commerce and gender studies show that men are more likely to purchase products online more than women (Rodgers & Harris, 2003; Yang & Lester, 2005). While other studies performed a detailed review of gender and E-commerce, activities that also resulted in mixed findings (Zhou, Dai, & Zhang, 2007). Given the contradictory finding stated above it is important to investigate gender differences and its relationship with new technology adoption, specifically m-commerce. Therefore, the following research hypothesis are examined:

*H1a: Male students are positively influenced by perceived usefulness of m-commerce more than female students.*

*H1b: Male students are positively influenced by perceived ease of use of m-commerce more than female students.*

*H1c: Male students are positively influenced by the key benefits more than the key barriers of m-commerce than female students.*

## Age

In relation to age, it is evident to be the most important predictor of m-commerce adoption (Bigné, Ruiz-Mafé, & Sanz-Balz, 2007). Previous studies indicate young women positively accept m-commerce more than older ones (Okazaki, 2006). Other studies also examined the age factor among users to understand user acceptance and adoption of m-commerce (Wu, & Wang, 2005; Li, Glass, & Records, 2008). Age is also examined in relation to the intention to shop online, and the study showed mixed findings (Zhou, Dai, & Zhang, 2007). Therefore, studies that examine the relationship of age to the adoption of m-commerce among university students is somewhat rare especially in developing countries. Therefore, the following research hypothesis are proposed:

*H2a: Younger students are positively influenced by perceived usefulness of m-commerce more than older students.*

*H2b: Younger students are positively influenced by perceived ease of use of m-commerce more than older students.*

*H2c: Younger students are positively influenced by the key benefits than the key barriers of m-commerce more than older students.*

## Year of Study and College of Study

In relation to student's year of study and college of study there are not any studies that have previously addressed these factors. Other than gender and age, most studies focus on demographic factors such as income, marital status, and profession (Min, Ji, & Qu, 2008). No studies have examined student's year of study (freshman, sophomore, junior, or senior) and college of study (public university, or private university) in relation to the adoption and use of m-commerce. Therefore, the following research hypothesis examine student's Year of study:

*H3a: Students in the first or second year of study are positively influenced by perceived usefulness of m-commerce more than students in the third or fourth year of study.*

*H3b: Students in the first or second year of study are positively influenced by perceived ease of use of m-commerce more than students in the third or fourth year of study.*

*H3c: Students in the first or second year of study are positively influenced by perceived benefits than perceived barriers of m-commerce more than students in the third or fourth year of study.*

In addition, the following research hypothesis examines student's College of study:

H4a: *Private University students are positively influenced by perceived usefulness of m-commerce more than Public university students.*

H4b: *Private University students are positively influenced by perceived ease of use of m-commerce more than Public university students.*

H4c: *Private University students are influenced more by perceived benefits than perceived barriers of m-commerce more than Public university students.*

Because, m-commerce is a rapidly emerging technology that is gaining wide acceptance in developing countries it is still restricted in the extant literature. For that reason, the present study tries to fill this gap by investigating user's demographic variables in relation to the TAM model and perceived benefits that encourage m-commerce use and perceived barriers that inhibit m-commerce use.

### **Methodology**

This study adopts a quantitative approach to explore the factors that affect student's adoption decisions of mobile commerce. In that regard, mobile commerce key benefits and key barriers have been examined and considered as antecedents that either encourage or inhibit the adoption decision of mobile commerce. The study was performed in the country of Kuwait. Data collection was performed through questionnaire distribution that was pretested and adjusted before full distribution. A paper-based questionnaire was designed and circulated to university students who are studying in public and private universities. The aim was to see if there are any adoption differences in public and private universities and examine student's perceptions of mobile commerce. In Kuwait, private universities are quite pricy requiring high tuition fees, and thus, students attending such universities are mostly from a higher social class that are also most likely are able to purchase adopt the latest technologies more than others. For that reason, this study wanted to explore if there was a relationship between college students in private and public universities and if that has an effect in how they perceive and adopt mobile commerce. The basic objective of the research was to explore user's perceived usefulness and perceived ease of use of the m-commerce that leads users to adopt the technology. In addition, to identify the key benefits and barriers affecting adoption of m-commerce in relation to various demographic factors. The demographic factors examined in this study are gender, age, year of study, and college of study. Year of study refers to the current year of study the student was in when filling the questionnaire: "Freshman," or "Sophomore," or "Junior," or "Senior." College of study identifies if the studies is undergoing the program of study in a public or private university. The demographic factors student's year of study and college of study were selected because to my knowledge no research has yet studied the relationship of student's adoption of m-commerce in relation to the year of study or the type of university the student is attending, therefore there's interest in explore this field. Concerning gender and age, several studies have examined such variables, however with mixed findings (Zhou, Dai, & Zhang, 2007).

To test the validity of the questionnaire, it was sent and reviewed by two professors in different universities. According to their feedback, the questionnaire was amended and randomly distributed to 1100 students attending public and private universities. About 100 questionnaires were rejected because the students left some parts of the questionnaire unanswered leaving the final research sample of 1000 students. It was measured using the five level 'Likert Scales', where 1 represents 'strongly disagree', 2 represents 'disagree', 3 represents 'undecided' 4 represents 'agree' and 5 represents 'strongly agree'. Reliability of the questionnaire measurement used Cronbach's Alpha of SPSS-20 software program, showed very strong reliability at 0.812.

### **Findings**

The study resulted in important findings. The following table (1) shows the experience of students in their 'mobile online payments use' in the following categories. Students were free to choose more than one category depending on their use.

**Table 1: Use of Mobile for On-Line Payment in the Following Categories:**

| Number of students who use 'mobile online payment' in the following categories | Do not use (0) | Use (1)            |
|--|----------------|--------------------|
| Purchasing products and services   | 453 (45.3%)    | <b>547 (54.7%)</b> |
| Food ordering  | 467 (46.7%)    | <b>533 (53.3%)</b> |
| Cinema booking   | 549 (54.9%)    | <b>451 (45.1%)</b> |
| Bill payments  | 614 (61.4%)    | <b>386 (38.6%)</b> |
| Banking  | 695 (69.5%)    | <b>306 (30.6%)</b> |
| Travel booking   | 744 (74.4%)    | <b>256 (25.6%)</b> |
| Investing  | 847 (84.7%)    | <b>153 (15.3%)</b> |
| Selling products and services  | 876 (87.6%)    | <b>124 (12.4%)</b> |

Note: The table is sorted in descending order as per student use of mobile online payment (M-commerce).

Table (1) shows that the category where highest number of students (54.7%) uses their mobile for the on-line payment is for 'purchasing products and services'. The next category where second highest number of students (53.3%) uses their mobile for the on-line payment is for 'food ordering'. The next category where third highest number of students (45.1%) uses their mobile for the on-line payment is for 'cinema booking'. The category where the lowest number of students (12.4%) uses their mobile for the on-line payment is for 'selling products and services'. The all other categories along with the percentage of students who use their mobile for online payments, shown in the table (1). The following tables show the mean and standard deviation of all the variables that show the benefits of using m-commerce. The variables are sorted in the descending order of their mean values. Table (2) shows the variables with the highest benefits to lowest benefits of using m-commerce.

**Table 2: The Table shows the variables with the highest benefits to lowest benefits of using M-commerce**

| Variables | Variable Labels   | Mean | Standard Deviation |
|-----------|---|------|--------------------|
| Q4        | Using the mobile for online payments is faster                            | 4.53 | .728               |
| Q1        | Using the mobile for online payments saves time                           | 4.38 | .727               |
| Q5        | Using the mobile for online payments is useful                            | 4.35 | .862               |
| Q2        | Using the mobile for online payments is convenient                        | 4.28 | .745               |
| Q11       | Using the mobile for online payments is easy to use                       | 4.20 | .862               |
| Q6        | Using the mobile for online payments is handy in respect to all locations | 4.16 | .892               |
| Q10       | Using the mobile for online payments does not require a lot of effort     | 4.15 | .803               |
| Q9        | Using the mobile for online payments is clear and understandable          | 4.04 | .908               |
| Q8        | Using the mobile for online payments increases the business performance   | 3.98 | 1.006              |
| Q7        | Using the mobile for online payments play an important role in daily life | 3.75 | .940               |
| Q3        | Using the mobile for online payments is cheaper                           | 3.35 | 1.248              |

Table (2) shows all the variables that represent the benefits of using m-commerce in the **descending order of their benefits**. The mean value (M=4.53, SD = 0.728) shows that the highest benefits of m-commerce is 'Using the mobile for online payments is faster'. The mean value (M=3.35, SD = 1.248) shows that and the lowest benefit of using m-commerce is 'Using the mobile for online payments is cheaper'.

The table (3) shows all the variables that represent the barriers of using m-commerce in their descending order of their disadvantages. The mean value (M=4.21, SD = 0.841) shows that the highest barrier of m-commerce is 'Slow mobile connection and/or data transfer is a problem when using the mobile for online payments'.

The mean value (M=3.30, SD = 1.414) shows that and the lowest barrier of using m-commerce is ‘Small mobile screen is a disadvantage when using online payments’.

**Table 3: The Table shows the variables with the highest barriers to lowest barriers of using M-commerce**

| Variables | Variable Labels  | Mean | Std. Deviation |
|-----------|--|------|----------------|
| Q14       | Slow mobile connection and/or data transfer is a problem when using the mobile for online payments           | 4.21 | .841           |
| Q15       | Poor network coverage is a problem when using the mobile for online payments                                 | 4.14 | .876           |
| Q16       | Fear of privacy invasion to personal information is a disadvantage when using the mobile for online payments | 3.90 | 1.106          |
| Q12       | Using the mobile for online payments has security risks  | 3.77 | 1.032          |
| Q13       | Using the mobile for online payments is difficult in some websites   | 3.57 | 1.207          |
| Q17       | Small mobile screen is a disadvantage when using online payments   | 3.30 | 1.414          |

### *Analysis and Discussion*

This study highlights several important contributions to literature. First, it contributes largely to the existing literature on m-commerce by shedding knowledge on the use of m-commerce in developing countries taking into consideration the moderating role of gender, age, year of study and college of study. Secondly, by adopting the TAM as a theoretical grounding for this research it has been evident that the application of the TAM is a good indicator of technology adoption in the context of developing countries keeping in mind the difference in usage and adoption patterns between users in western and developing countries. Third, this study highlights that age and gender differences have a significant impact on the adoption and usage of m-commerce, which, has not been previously examined in developing countries. Fourth, investigating the moderating effect of year of study and college of study to m-commerce adoption is of high importance because it highlights varying students' competences in technology knowledge in which leads to adoption in private and public universities. Such differences are important predictors for policy makers for identifying students' weaknesses and strengths that are especially important for the new emerging generations in such developing countries.

Results show that student demographics such as gender, age, year of study and college of study have an effect on their perceived benefits and perceived barriers when adopting m-commerce. In addition, students' demographic factors also have an effect on the perceived ease of use and perceived usefulness of m-commerce.

### **T-test with Respect to Gender**

T-test is applied with respect to gender on various newly created variables as shown in the following table (4). The results from the table (4) show that significant difference exists between male students and female students for each of the four dependent variables at 95% confidence interval.

The table (4) shows that there is a statistical significant difference at (.05) with respect to “gender (male, female) on ‘overall perceived usefulness (PU) of m-commerce’,  $t(924.59) = 4.11, p < .001$  ( $p=0.000$ ). The mean values show that male students as an average feel significantly more ‘perceived usefulness (PU) of m-commerce’ (M=4.19, SD= 0.62) than the female students feel about it (M=4.03, SD= 0.61). **Therefore, the result support the hypothesis “Male students are positively influenced by perceived usefulness of m-commerce more than female students.”**

The results from the table (4) also show that for the variables ‘overall perceived ease of use (PEOU) of m-commerce’ and for ‘overall key benefits of m-commerce’, the male students mean is significantly more than the female students mean.

**Therefore, the result support the hypothesis “Male students are positively influenced by perceived ease of use of m-commerce more than female students.”**

The results from the table (4) also show for the variable ‘overall key barriers of m-commerce’ the female students mean is significantly more than the mean of male students.

This means the female students feel more barriers in dealing with ‘m-commerce’ than male students feel. **Therefore, the result support the hypothesis “Male students are positively influenced by the key benefits than the key barriers of m-commerce than female students.”**

**Table 4: T-Test with respect to “Gender”**

| Variables  | Gender | N   | Mean | Std. Deviation | t     | df     | Sig. (2-tailed) |
|--|--------|-----|------|----------------|-------|--------|-----------------|
| Overall perceived usefulness (PU) of m-commerce    | Male   | 436 | 4.19 | 0.62           | 4.11  | 924.59 | .000            |
|  | Female | 564 | 4.03 | 0.61           |       |        |                 |
| Overall perceived ease of use (PEOU) of m-commerce | Male   | 436 | 4.33 | 0.72           | 7.63  | 938.58 | .000            |
|  | Female | 564 | 3.98 | 0.73           |       |        |                 |
| Overall key benefits of m-commerce                 | Male   | 436 | 4.23 | 0.62           | 5.68  | 873.57 | .000            |
|  | Female | 564 | 4.01 | 0.55           |       |        |                 |
| Overall key barriers of m-commerce                 | Male   | 436 | 3.72 | 0.63           | -3.97 | 961.11 | .000            |
|  | Female | 564 | 3.89 | 0.67           |       |        |                 |

#### **T-test with Respect to Age (17~19, 20~more)**

T-test is applied with respect to age on various variables as shown in the following table (5). The two groups of students with respect to their age are as follows. The first group of students are in the age group of (17 ~ 19) years old and the second group of students who are in the age group of (20 ~ more) years old. The results from the table (5) show that significant difference exists between the two groups of students with respect to their age for each of the four dependent variables at 95% confidence interval.

The table (5) shows that there is a statistical significant difference at (.05) with respect to “age on ‘overall perceived usefulness (PU) of m-commerce’,  $t(998) = 10.69, p < .001$  ( $p=0.000$ ). The mean values show that students with age group of ‘17~19’ as an average feel significantly more ‘perceived usefulness (PU) of m-commerce’ ( $M=4.33, SD= 0.54$ ) than the students with age group of ‘20 ~ more’ feel about it ( $M=3.93, SD= 0.62$ ). **Therefore, the result support the hypothesis “Younger students are positively influenced by perceived usefulness of m-commerce more than older students.”**

The results from the table (5) also show that for the variables ‘overall perceived ease of use (PEOU) of m-commerce’ and for ‘overall key benefits of m-commerce’, the mean of the students of age group of ‘17~19’ is significantly more than the mean of the students of age group of ‘20~ more’. **Therefore, the result support the hypothesis “Younger students are positively influenced by perceived ease of use of m-commerce more than older students.”**

The results from the table (5) also show for the variable ‘overall key barriers of m-commerce’, the mean of the students of age group of ‘17~19’ is significantly less than the mean of the students of age group of ‘20~ more’ is. This means the students of higher age groups feels more barriers in dealing with ‘m-commerce’ than the students of lower age group feels. **Therefore, the result support the hypothesis “Younger students are positively influenced by the key benefits than the key barriers of m-commerce more than older students.”**

**Table 5: T-Test with respect to “Age (17~19, 20~more)”**

| Variables  | Age     | N   | Mean | Std. Deviation | t     | df     | Sig. (2-tailed) |
|--|---------|-----|------|----------------|-------|--------|-----------------|
| Overall perceived usefulness (PU) of m-commerce    | 17~19   | 412 | 4.33 | 0.54           | 10.69 | 998    | .000            |
|  | 20~more | 588 | 3.93 | 0.62           |       |        |                 |
| Overall perceived ease of use (PEOU) of m-commerce | 17~19   | 412 | 4.39 | 0.71           | 9.52  | 895.59 | .000            |
|  | 20~more | 588 | 3.95 | 0.72           |       |        |                 |
| Overall key benefits of m-commerce                 | 17~19   | 412 | 4.35 | 0.56           | 11.55 | 881    | .000            |
|  | 20~more | 588 | 3.94 | 0.55           |       |        |                 |
| Overall key barriers of m-commerce                 | 17~19   | 412 | 3.68 | 0.64           | -5.60 | 998    | .000            |
|  | 20~more | 588 | 3.91 | 0.66           |       |        |                 |

**T-test with Respect to Year of Study (Freshman & Sophomore, Junior and Senior)**

T-test is applied with respect to ‘year of study’ on various variables as shown in the following table (6). The two groups of students with respect to their ‘year of study’ are as follows. The first group of students represents for those students who are studying either in first year (called freshman) or in the second year (called sophomore) and the second first group of students represents for those students who are studying either in third year (called junior) or in the fourth year (called senior). The results from the table (6) show that significant difference exists between the two groups of students with respect to their year of study for each of the four dependent variables at 95% confidence interval.

Table (6) shows that there is a statistical significant difference at (.05) with respect to “year of study on ‘overall perceived usefulness (PU) of m-commerce’,  $t(993) = 4.15$ ,  $p < .001$  ( $p=0.000$ ). The mean values show that students who are studying ‘in first year or in the second year’ as an average feel significantly more ‘perceived usefulness (PU) of m-commerce’ ( $M=4.16$ ,  $SD= 0.67$ ) than the students ‘who are studying in third year or in the fourth year’ ( $M=4.00$ ,  $SD= 0.54$ ) feels about it. **Therefore, the result support the hypothesis “Students in the first or second year of study are positively influenced by perceived usefulness of m-commerce more than students in the third or fourth year of study.”**

The results from table (6) show that for the variables ‘overall perceived ease of use (PEOU) of m-commerce’ and for ‘overall key benefits of m-commerce’, the mean of the students ‘who are studying either in first year or in the second year’ is significantly more than the mean of the students ‘who are studying in third year or in the fourth year’. **Therefore, the result support the hypothesis “Students in the first or second year of study are positively influenced by perceived ease of use of m-commerce more than students in the third or fourth year of study.”**

The results from table (6) also show that for the variables ‘overall key barriers of m-commerce’, the mean of the students who are studying in ‘third year or in the fourth year’ is significantly more than the mean of the students who are studying in ‘first year or in the second year’. This means the students who are studying in ‘third or fourth year’ feel more barriers in dealing with ‘m-commerce’ than the students who are studying in ‘first or second year’ feel about it. **Therefore, the result support the hypothesis “Students in the first or second year of study are positively influenced by perceived benefits than perceived barriers of m-commerce more than students in the third or fourth year of study.”**



**Table 6: T-Test with respect to “Year of Study (first or second, third or fourth)”**

| Variables  | Year of study        | N   | Mean | Std. Deviation | t     | df     | Sig. (2-tailed) |
|--|----------------------|-----|------|----------------|-------|--------|-----------------|
| Overall perceived usefulness (PU) of m-commerce    | Freshman & Sophomore | 570 | 4.16 | 0.67           | 4.15  | 993.49 | 0.000           |
|  | Junior & Senior      | 430 | 4.01 | 0.54           |       |        |                 |
| Overall perceived ease of use (PEOU) of m-commerce | Freshman & Sophomore | 570 | 4.28 | 0.69           | 7.71  | 998    | 0.000           |
|  | Junior & Senior      | 430 | 3.93 | 0.77           |       |        |                 |
| Overall key benefits of m-commerce                 | Freshman & Sophomore | 570 | 4.20 | 0.62           | 5.84  | 979.58 | 0.000           |
|  | Junior & Senior      | 430 | 3.98 | 0.53           |       |        |                 |
| Overall key barriers of m-commerce                 | Freshman & Sophomore | 570 | 3.71 | 0.63           | -5.61 | 895.35 | 0.000           |
|  | Junior & Senior      | 430 | 3.95 | 0.67           |       |        |                 |

**T-test with Respect to College of Study (Public University, Private Universities)**

T-test is applied with respect to ‘College of study’ on various variables as shown in the following table (7). The two groups of students with respect to their ‘College of study’ are as follows. The first group of students represents for those students who are studying in a ‘Public University’ and the second first group of students represents for those students who are studying in ‘Private Universities’.

The results from the table (7) show that significant difference exists between the two groups of students with respect to their College of study for each of the four dependent variables at 95% confidence interval. The table (7) shows that there is a statistical significant difference at (.05) with respect to “College of study on ‘overall perceived usefulness (PU) of m-commerce’,  $t(806.85) = 3.697, p < .001 (p=0.000)$ .

The mean values show that students who are studying in Public Universities as an average feel significantly more ‘perceived usefulness (PU) of m-commerce’ ( $M=4.19, SD= 0.61$ ) than the students ‘who are studying in Private Universities’ ( $M=4.04, SD= 0.62$ ) feels about it. **Therefore, the result does not support the hypothesis “Private University students are positively influenced by perceived usefulness of m-commerce more than Public University students.”**

The results from the table (7) also show that for the variables ‘overall perceived ease of use (PEOU) of m-commerce’ and for ‘overall key benefits of m-commerce’, the mean of the students, who are studying in Public University, is significantly more than the mean of the students who are studying in Private Universities. **Therefore, the result does not support the hypothesis “Private University students are positively influenced by perceived ease of use of m-commerce more than Public University students.”**

The results from the table (7) show that for the variables ‘overall key barriers of m-commerce’, the mean of the students, who are studying in Private Universities, is significantly more than the mean of the students who are studying in Public University. This means the students who are studying in Private Universities feel more barriers in dealing with ‘m-commerce’ than the students who are studying in Public University feel about it. **Therefore, the result does not support the hypothesis “Private University students are influenced more by perceived benefits than perceived barriers of m-commerce more than Public University students”**

**Table 7: T-Test with respect to “College of Study (Public University, Private Universities)”**

| Variables  | College of study     | N   | Mean | Std. Deviation | t     | df     | Sig. (2-tailed) |
|--|----------------------|-----|------|----------------|-------|--------|-----------------|
| Overall perceived usefulness (PU) of m-commerce    | Public University    | 380 | 4.19 | 0.61           | 3.70  | 806.95 | .000            |
|  | Private Universities | 620 | 4.04 | 0.62           |       |        |                 |
| Overall perceived ease of use (PEOU) of m-commerce | Public University    | 380 | 4.23 | 0.80           | 3.17  | 727.51 | .002            |
|  | Private Universities | 620 | 4.07 | 0.71           |       |        |                 |
| Overall key benefits of m-commerce                 | Public University    | 380 | 4.20 | 0.63           | 3.84  | 733.50 | .000            |
|  | Private Universities | 620 | 4.05 | 0.56           |       |        |                 |
| Overall key barriers of m-commerce                 | Public University    | 380 | 3.74 | 0.67           | -2.77 | 998.00 | .006            |
|  | Private Universities | 620 | 3.86 | 0.65           |       |        |                 |

### **Conclusion**

This study highlights important managerial implications. It has been evident that there is a growing number of m-commerce users. However, there is a growing concern that although the numbers of mobile subscribers are increasing at a very fast pace, actual M-commerce services offered by telecommunication companies are still limited. Findings highlighted important m-commerce usage preferences among users in terms of perceived usefulness and ease of use of the m-commerce technology. Such findings are constructive to understand user preferences and adoption characteristics of m-commerce services in an effort to develop them further and increase usage. This study has resulted in several important findings that are especially important in developing countries. First concerning gender and the adoption of m-commerce, results show that overall male students feel more benefits in dealing with m-commerce than the female student feel. Female students feel more barriers in dealing with m-commerce than male students feel.

Second concerning age and the adoption of m-commerce, results show that students who are in the age group of '17~19' feel more benefits in dealing with m-commerce than the students who are in the age group of '20~more' feel. The students who are in the age group of '20~more' feel more barriers in dealing with m-commerce than students who are in the age group of '17~19' feel. Third concerning year of study and the adoption of m-commerce, results show that students who are in the year of study of 'freshman or sophomore' feel more benefits in dealing with m-commerce than the students who are in the in the year of study of 'junior or senior' feel. Results show that students who are in the year of study of 'junior or senior' feel more barriers in dealing with m-commerce than the students who are in the in the year of study of 'freshman or sophomore' feel. Fourth concerning the college of study, results show that students who are studying in Public University feel more benefits in dealing with m-commerce than the students who are studying in the private universities feel. Results show that students who are studying in private universities feel more barriers in dealing with m-commerce than the students who are studying in Public university feel. As this study is limited to, university students in Kuwait future research should examine demographic factors in other countries. Future studies should examine the same phenomenon addressed to public users and not limited solely to students. Other future research can also examine user demographics using the TAM2 through incorporating user's social influence towards technology adoption and cognitive processes. In addition, other demographic variables would be interesting to test, such as comparing m-commerce adoption in different cultures, and occupations.

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