Role of age and gender in the adoption of m-commerce in Australia

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A B S T R A C T

Sale and purchase of goods and services through m-commerce (or mobile-commerce) are ever increasing. Australia's m-commerce users are increased from 0.62 million in December 2010 to 3.4 million in December 2013, an increase of 448 percent. This is why the businesses world over is adopting this medium very fast to reach out to their target customers. Age and gender have always been important factors in devising business strategy for any product or service. This paper evaluates the motivation of Australians towards choosing m-commerce over the traditional in-store purchase or the e-commerce with reference to age and gender. Primary data was collected based on a set questionnaire of the Technology Acceptance Model (TAM). The participants of this study were Australian residents above 18 years of age. A total of 61 positive responses were received from respondents. The results show that perceived usefulness has an impact on the use of m-commerce by men whereas women are more influenced by perceived ease of use. To sum up, companies need to spend more resources and efforts to build the trust of customers in m-commerce, communicate their usefulness and enhance its ease of use by making their websites user friendly.

1. Introduction

Businesses over the world are struggling with the pertinent need to constantly change and upgrade their media and channel mix to capture the interest of the on-the-go population. As per industry sources, mobile phone has moved beyond its use as a conventional device for making and receiving calls to a dynamic omnipotent tool in the hands of the consumers to compare products and services, access best offers and make one-click purchase decisions. With the ever increasing number of smartphone buyers, this trend is here to stay (Holmes et al., 2013). An extension of the e-commerce, mobile commerce or 'm-commerce' is defined as an act of banking or payment of bills, or of purchase of products and services online with mobile phone as the medium (Ortega-Montiel, 2014) Australia's m-commerce users increased from 0.62 million in December 2010 to 3.4 million in December 2013, an increase of 448 percent. An additional four million users indulged in non-transactional m-commerce activities like undertaking products or services' comparisons to reach a purchase decision or to check their account balances (Delloite, 2015). 35 percent of total retail e-commerce transactions reported in Q4 2015 was made via mobile (Fig. 1). With the growth in number of smartphone users the world over, the mobile phone has transformed from a device used for connectivity to a small world of its own. It comes as no surprise then that increasing number of businesses are including this wonder medium in their annual promotional spends to reach out a larger audience and tap into the 'on-the-go' generation for selling their products and services. The trend of m-commerce or mobile commerce is emerging as a stable and secure platform supplementing e-Commerce (Ray, 2011). Keeping such an emerging scope of m-commerce, this research attempts to understand the factors that influence Australian consumer intentions towards m-commerce.

Gender has always been an important factor in devising business strategy for any product or service. How gender influences technology use and acceptance has been a topic of interest for many researchers (Venkatesh and Morris, 2000; Venkatesh et al., 2000; Gilal et al., 2015; 2016; Almomani et al., 2018). It has been found that gender factor really influences the technology adoption in which both males and females differently evaluate the

technology before adopting it. For example, men put more weight on perceived usefulness (instrumental factors) whereas women look for perceived ease of use (process) (Venkatesh and Morris, 2000; Venkatesh et al., 2000).
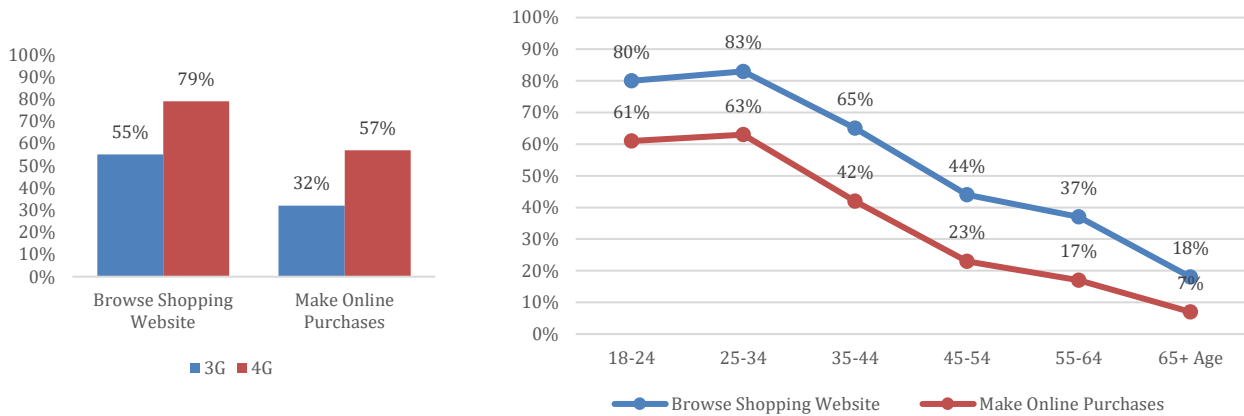

Fig. 1: Percentage making online purchase (Delloite, 2015)

Also, Okazaki and Mendez (2013) in their study reveal that link between website design and ease of use sets to be important motivation for females. Moreover, the research has also proved that men and women are differently influenced by subjective norm which in turn affects technology acceptance (Venkatesh and Morris, 2000; Venkatesh et al., 2000). They have found that men do not get influenced by the subjective norm at any stage of their decision making process whereas women do in the initial stage of technology introduction (Venkatesh and Morris, 2000). These differences of orientation on the basis of gender has a significant consequence for decision makers in companies directly or indirectly involved in m-commerce. The online marketers of products and services must appeal mobile phone users through their mobile apps and websites keeping in view the gender related needs like perceived ease of use and usefulness while targeting females and males respectively.

Studies also bring to fore the enhanced acceptance of and willingness to use the m-commerce medium by the younger generation due to their positive attitude and flexibility towards innovation in technology (Pieri and Diamantinir, 2010; Ansari et al., 2012; Okazaki and Mendez, 2013). Similarly, Chong (2013) in his study finds that chronological age impacts the use of m-commerce in China; he states that younger consumers (age less than 40) show more intentions towards using m-commerce for content delivery, transaction-based activities, location-based services and fun and enjoyment as compared to older users (age more than 40). Keeping these facts in view, the need for including gender and age in this study was considered significant. Therefore, the paper evaluates the motivation towards choosing m-commerce over the traditional in-store purchase or the e-commerce. Specifically, to measure the perceived ease of use and perceived usefulness influence with regard to Australian consumers'

behavior towards m-commerce using Technology Acceptance Model (TAM). Mobile share of retail e-Commerce transaction sin Australia were shown in Fig. 2.
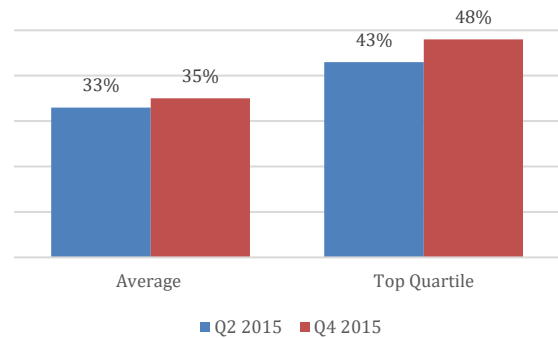

Fig. 2: Mobile share of retail e-Commerce transactions in Australia

2. Method

Research majorly relies on the information collected in the form of primary data from user surveys. Primary data was collected based on a set questionnaire (i.e., TAM) focused on the objectives of the research. A questionnaire consisting of 19 questions was developed in line with original measurement scales used in TAM and other literature using TAM (Kripanont, 2007; Alharbi and Drew, 2014). However, some wording and language changes were made in questions to fit the context of research topic. Thornhill et al. (2009) viewed that if worded correctly, questionnaires normally require less skill and sensitivity to administer them. This questionnaire too has been modified to suit the requirements of current study.

The participants of this study were Australian residents above 18 years of age, which were further sub divided into two group of 18-35 years and above 35 years of age. This study strictly considered only those respondents using smart phones at present. All respondents participated voluntarily. Reaching the

whole population is nearly impossible, so the sampling technique was adopted to gain insight into behavior and attitude of Australian residents based on small representation of given population. Sampling also saves the time and is cheaper than other methods like interviews and observations to employ (Thornhill et al., 2009). Hence, the random sampling technique was employed wherein, the participants belonged to CBD and different suburbs of Adelaide, South Australia. A total of 70 surveys were distributed and 61 positive responses were received. The overall response rate was 87%.

3. Results and discussion

Cronbach's Alpha is used to test the reliability of the questionnaire. Reliability is about the internal consistency of the instrument. In study of Alharbi and Drew 2014); highlighted that instrument is reliable with internal consistency when Cronbach Alpha value exceeds 0.70. SPSS version 19 has been used to test the reliability. With values ranging from 0.697 to 0.860, all measures show satisfactory reliability. With value of 0.883, overall survey is considered as reliable. Reliability Cronbach's Alpha were shown in Table 1.

Table 1: Reliability Cronbach's Alpha

Scale	Number of Items	Cronbach's Alpha
Perceived usefulness (PU)	4	0.765
Perceived ease of use (PEU)	4	0.860
Trust	2	0.775
Intention to use (ITU)	3	0.697
Overall reliability	13	0.883

To gauge a fair assessment of impact and penetration of m-commerce, a mixed demographic profile was selected for the survey. Out of a total of 61 participants surveyed, 57% were males and 43% were females. 46% of males and 69% of females belonged to age group between 18-35 years, and 54% of males and 31% of females belonged to age group above 35 years.

When questioned on since how long have the participants been using smart phones, majority of them opted for more than 5 years' duration (Fig. 1). In the relatively younger population, aged between 18–35 years, 81% males and 94% females have been smart phone users for more than 2 years. In the elder category of above 35 years, 89% males and 63% females fall in this category. A 38% of females aged above 35 years had started using smart phones less than 6 months ago. Duration of smart phone usage were shown in Fig. 3.

With the ease of availability of 4G network, a wide majority of Australians get to their smart phones right after waking up (Delloite, 2015). On being asked how frequently they access m-commerce sites on their smart phones, 19% males and 33% females in the age group 18-35 years confirmed to be accessing multiple times a day. Remarkably, in the slightly older category, aged above 35 years, 16% males and 25% females accessed the m-commerce

sites at least once a day on their smart phones (Fig. 2). Frequency of accessing m-commerce sites on smart phones were shown in Fig. 4.
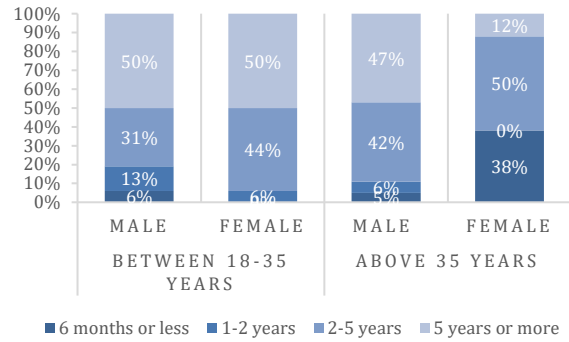

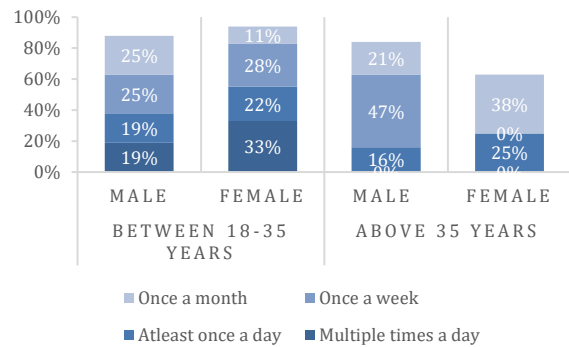**Fig. 3:** Duration of smart phone usage

Fig. 4: Frequency of accessing m-commerce sites on smart phones

The participants, on being asked about their own perception of their m-commerce usage expertise (Fig. 3), however, only 13% males in 18-35 years' age group and 11% males in above 35 years' age group considering themselves highly efficient. This figure for females was at 33% in 18-35 years' age group. Females in above 35 years' age group considered themselves average when it came to their m-commerce usage expertise with 50% opting for low and 50% opting for moderate expertise. For females in 18-35 years' age group, majority of the participants opted for moderately experienced. Self-assessment about using m-commerce were shown in Fig. 5.
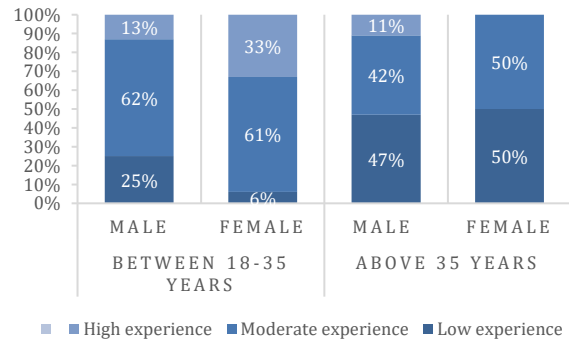

Fig. 5: Self-assessment about using m-commerce

Majority of the respondents felt it easy to use m-commerce sites from the comfort of their homes when they have ample time and peace of mind to scan through the options and chose the product/service that best caters to their requirements. 6 out of 16 males in the 18-35 years' age group and 13 out of 19 males in the above 35 years' age group said they preferred accessing m-commerce sites and portals at home (Fig. 5). For females, these figures were 7 out of 18 in 18-35 years and 5 out of 8 in above 35 years' age group. Place of maximum m-commerce usage were shown in Fig. 6.
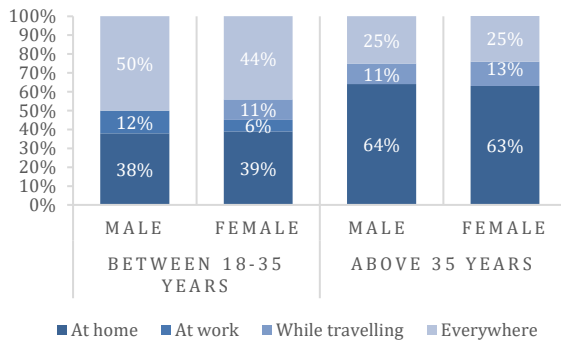

Fig. 6: Place of maximum m-commerce usage

The study focused on the utilization of the principal TAM constructs to understand the consumer behavior towards m-commerce. Descriptive as well as statistical analysis of the data provides insight into consumer behavior and intentions to use m-commerce. 44% of total respondents were using smartphones for more than five years and 34% of all respondents uses mobile for online transactions at least once a day. These high numbers can positively be the reason to have increasing intention to use m commerce. To analyze the relationship, correlation analysis was carried out.

Along with core constructs PU, PEOU and ITU; another independent variable, trust is also analyzed. Modified TAM is used to suit the objectives of the study. Statistical analysis of all the respondents combined revealed that results are consistent with original TAM findings as well as several other researches (Chong, 2013; Alharbi and Drew, 2014) being carried out in relation to analyze consumer behavior, attitude and intentions to use m-commerce. Perceived Usefulness is found to have positive influence on the intention to use m commerce, which is in consistence with the previous researches (Chong, 2013; Alharbi and Drew, 2014; Lu and Rastrick, 2014) suggested that higher the perceived usefulness higher will be the intentions to use m-commerce. To support the high intention to use, perceived ease of use and trust variable also show positive influence on the intention to use. PU and PEOU show strong positive correlation among them, which supports the positive behavior and attitude of consumer towards m–commerce and

hence increase intention to use (Yang, 2005; Hernández et al., 2011).

Trust is being considered as a critical factor in generating positive intentions for m-commerce. Correlation analysis shows that for 61 respondents overall, trust holds significant positive relation with PU and intention to use. For respondents belonging to 18-35 years of age, trust shows moderate significant correlation with PU and ITU, whereas for above 35 years' respondents, trust holds no significant positive relation to PU and low significant correlation to intention to use. These results lie in consistence with the results of (Hernández et al., 2011).

Gender didn't correlate significantly to other construct variables, which suggests no effect of gender on PU, PEOU and intention to use m-commerce. Similar result is also supported by (Alharbi and Drew, 2014).

4. Conclusion

M-commerce is a new age technology with several aspects to consider by service providers to attract potential consumers. From the study, one of the most important aspects that came upfront is trust. In order to motivate and influence consumer's intention to use m commerce, it becomes imperative to make consumers trust the service provider with their personal information. Older adults tend to scrutinize everything more critically than younger ones, so it is recommended to invest more in understanding concerns of older adults. This research also recommends working on to improve ease of use of m commerce. User friendly websites tends to attract more visitors than others with complex interface. As we have observed through empirical analysis PEOU positively influences intention to use.

This study is no different from other to not to suffer from limitations. It is important to mention that present study is lacking in several aspects and much can be done to improve the understanding of the behavior of consumers towards m commerce. Small sample size of only 61 respondents will possibly be the source of misrepresentation of opinions of whole population in Australia. Chances of occurrence of respondent's bias affecting the overall analysis is another limitation to the research. Another factor that affects the study is limited time to conduct the research. Questionnaire reliability can also be another question of concern

Despite several limitations, the study provides insight for future studies to expand on this knowledge and improve what? Future studies by collecting data from bigger representative sample size and including more variables such as educational qualification or attitude towards new technologies can develop new insights into consumer behavior and intentions. Improving upon questionnaire and using other statistical test such as factor analysis and multiple regressions, research validity can be improved.

Compliance with ethical standards

Conflict of interest

The authors declare that they have no conflict of interest.

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