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Understanding Mobile Shopping Behavior from a Utilitarian Perspective: a New *Posteriori* Framework

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Abstract: Many previous studies assessed the adoption of mobile shopping by employing technology adoption models such as Technology Adoption Model (TAM), Diffusion of Innovation (DOI) and Unified Theory of Acceptance and Use of Technology (UTAUT). However, there has been a lack of effort in re-assessing the usage of these models for investigating mobile shopping adoption through the aspect of the advantages offered by mobile devices, compared to desktop devices. Furthermore, a new outlook into the aspect of customer behavior on mobile shopping is required as mobile technology continues to advance and progress within the context of the online shopping environment. The objective of this paper is to propose a new aspect to identify mobile shopping behavioral intention where the theoretical foundation of convenience and utilitarian advantages of mobile devices over PCs are taken into consideration. The paper suggests a conceptual framework where these variables will be discussed based on the fundamental variables. The framework will assist in improving the mobile platform to encourage more mobile shoppers in the future.

Keyword: Mobile shopping behavior, utilitarianism, perceived convenience, behavioral intention, attitude, shopping motivation, lazy user model.

1. INTRODUCTION

Mobile shopping is able to offer a unique and constant shopping experience due to the capability of mobile devices to be accessed anywhere and anytime^{[1]-[2]-[3]}. Internet-enabled mobile devices allow for more relative advantages to customers when compared with conventional PC-based online shopping^[4]. Advantages such as mobility, convenience and personalization offered by mobile shopping open up a new opportunity for businesses to reach their customers^{[5]-[6]-[4]}. As recently reported by Mastercard Mobile Shopping Survey, the aspect of convenience is one of the main drivers for shoppers to opt for mobile shopping as their primary shopping channel^[7]. Customers are expected to expend less effort and resources while shopping online through mobile devices as opposed to using PCs. Evidently, mobile shopping has shown tremendous growth for the past few years among Asia Pacific countries.

The advantage of convenience presented by mobile devices does not seem to influence the decision of customers when it comes to choosing the platform to make online purchases. There appears to be limited understanding towards the behavior of customers in the online shopping environment when mobile devices are involved. This is especially true when considering the differences between mobile devices and desktop PCs (i.e. screen size, internet speed, availability) as well as when assessing the intention of customers to shop online^{[8]-[2]}.

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Many previous studies assessed the adoption of mobile shopping (i.e. ^{[9]-[10]-[4]}) by employing technology adoption models such as Technology Adoption Model (TAM), Diffusion of Innovation (DOI) and Unified Theory of Acceptance and Use of Technology (UTAUT). Nonetheless, there has been a lack of effort in re-assessing the usage of these models for investigating mobile shopping adoption through the aspect of the advantages offered by mobile devices compared to PCs. Furthermore, a new outlook into the aspect of customer behavior on mobile shopping is required as mobile technology continues to advance and progress within the context of online shopping environment. The rapid growth of mobile shopping only makes it logical for merchants to tap into the potential market by fully utilizing the advantages that mobile devices provide to customers that are becoming more demanding for faster and convenient way of shopping.

Thus, the objective of this paper is to propose a new aspect to identify mobile shopping behavioral intention where the theoretical foundation of convenience and utilitarian advantages of mobile devices over PCs are taken into consideration. This paper suggests a conceptual framework where these variables will be placed upon for discussion and empirical testing into the fundamental variables in choosing for mobile shopping. It would assist to improve the mobile platform to encourage more mobile shoppers in the near future.

Firstly, the paper starts by discussing relevant existing theories supporting the argument that customers would opt for mobile shopping because it allows them to perform less activities or effort in shopping compared to PCs or physical stores. The paper then discusses existing studies on mobile shopping that utilizes current technology adoption models such as TAM and UTAUT in order to identify constructs within these models that support the aforementioned argument on mobile shopping. Finally, a framework on mobile shopping adoption is conceptualized based on the discussions presented.

2. THEORETICAL FOUNDATIONS

Shopping behavior is considerably dictated by the type of shopping channels or methods that are used by the customer ^{[11]-[12]}. Traditionally, the online shopping channel requires customers to gain access to a computer device with Internet capability. This would essentially restrict customers shopping activities because they are have to be present in front of a PC to perform the activity. This usually leads to the situation where customers are only able to shop online from their homes, offices or Internet cafes. The emergence of mobile internet has enabled customers to circumvent such restriction by accessing the Internet at any location ^[13]. An argument can be made here where it is plausible to believe that using a mobile device to shop online would require less effort from customers as opposed to a PC-based online shopping.

2.1 Lazy User Theory and Principal of Least Effort

Reference ^[14] presented a theory that attempts to explain the decision making process of users in choosing solutions that would fulfil their needs by using the least effort. The theory puts forth the notion that a user will chose to implement a solution from a set of solutions based on the criterion that the chosen solution would require the user to expend less effort (i.e. time, energy and/or resources) to perform. The theory is based upon the principal of least effort that was theorized by ^[15] where it is argued that human behaviors are naturally dictated by the need to choose a path that will lead to the least amount of resistance in order to perform desired activities and obtain desired outcomes. Reference ^[16] reassessed that the principal is mainly derived from two main aspects: minimizing the rate of work and the average rate of work. For example, an individual may search

for the meaning of a word using a smartphone rather than looking for an actual physical dictionary. The result would still lead the individual to find the meaning of the word, but with a minimum average rate of work to actually perform the activity of seeking the information.

Therefore, based on this judgment, it can be assumed that customers will logically prefer mobile devices from PCs as it is thought that the used of mobile devices would require less effort to perform the same activity. In this instance, using mobile devices to shop online would generally require less effort on the customers' part as there are fewer burdens (i.e. availability, mobility and convenience) imposed on them to gain access to the Internet. The objective of shopping online remains the same with the difference being the method used to achieve set objective. Moreover, the theory suggests that certain constructs that exist in current technology adoption models represent the principal of least effort when it comes to the adoption decision of users. This aspect of the theory would become one of the main foundations for the development of the framework within this study because these constructs determine the motivations to adopt mobile shopping when taking into consideration the convenience aspect this particular shopping channel provides.

2.2 Utilitarianism

The principal of least effort within Lazy User Theory may explain the intention of customers to opt for mobile shopping. However, the theory is still in its infancy. It is imperative that newer theories are supported by more established concepts or theories that have parallel understanding within the context of the research, especially in multi-field studies ^{[17]-[18]-[19]}. One such theory that could support the Lazy User Theory is the notion of utilitarianism put forward by Jeremy Bertham and further expanded by [20]. Utilitarianism is a notion in which people assess their actions based on the consequences of their actions. It generally focuses on the normative belief that the action chosen should be in the best interest of the entity that performs the action. As explained by ^[20], the main aim of utilitarianism is to maximize utility which is basically the action that can create the most amount of good and well-being.

Utilitarianism covers a broad range of subjects and issues where several versions of this concept have been introduced since its conception ^[21]. However, the present research is concerned with the individual behavior and action within utilitarianism, in which the focus is on the theory of act utilitarianism. The term act utilitarianism refers to placing the principal of utility upon the actions of the individual who is dependent on the situation he/she is in. ^[21]. The theory presumes that any action taken by an individual should maximize the utility and wellbeing of that individual. Before reaching a decision to perform an action, the individual should consider the available options (type of actions that could be performed), foresee the consequences of each action and agree to the action that will produce the most positive results ^[21]. This aspect of act utilitarianism can justify the notion of this proposition when it comes to explain the decision of customers to opt for mobile shopping instead of PC-based shopping. Firstly, a customer considers whether to use a desktop PC or a mobile device for shopping online. Then, the customer considers and studies the consequences of shopping using a mobile device and a desktop PC. This is where the amount of effort required to perform both options is weighted by the customer. Finally, the customer will choose the course of action that would induce the most good or positive results for his/her well-being when shopping online. In this instance, customer would choose mobile shopping as it would minimize the amount of effort exerted to shop online.

2.3 Utilitarian Shopping Motivation

Another form of utilitarianism could be found in the subject of consumer purchasing behavior known as utilitarian value^{[22]-[23]}. Utilitarian value is one of the two shopping values sought by customers beside the hedonic value^[24]. Reference^[22] described utilitarian value as something that is work-conscious, task related and rational. Customers seek utilitarian value when shopping are often motivated from the aspect of efficiency and convenience; this is where the completion of a shopping task to be accomplished in a fast manner becomes the main objective^{[22]-[25]}. Utilitarian shoppers focus their values on the need to successfully perform shopping activities without hassle, while the feel of enjoyment while shopping is the main drive for hedonic shoppers^[24]. This is where the mentality of utilitarian shoppers goes along the line of *'I don't want to waste too much time or energy when shopping'* or *'If I can perform my shopping with the least hassle, I am satisfied'*.

Hedonic value, on the other hand, is the emotional and experiential aspect of customers shopping value where it involves the elements of entertainment and leisure activities [26]. Hedonic shopping motivation is concerned with the customers' need to become emotionally fulfilled when performing shopping activities^[22]. Hedonic shoppers are often attracted to the aspect of "fun" when shopping where they perceive shopping as a medium to (1) release stress, (2) socialize with friends/family, (3) keep up with newest trends, (4) achieve sense of adventure, (5) seek value for products through bargains/discounts and (6) achieve sense of role from shopping for other people^[27]. Therefore, when compared with utilitarian shoppers, the way hedonic shoppers think is along the lines of *'I like to go shopping because I can hang out with friends and relieve my bad mood'* or *'I like to shop because I can find the best deals for me and my family'*.

In terms of general online shopping, customers seek out several utilitarian values that would assist them to make their shopping activities easier. Elements such as availability of information, cost saving, time, variety of selection and convenience are vital in determining the utilitarian values of customers in online shopping compared to physical brick-and-mortar stores^{[28]-[29]-[26]}. A parallel concept of this general utilitarian value fits well when exploring the intention of customers to opt for mobile shopping instead of PC-based shopping. While both online shopping channels have utilitarian advantage over physical stores, it can be assumed that mobile shopping has relatively better utilitarian value over PC-based online shopping. Case in point, while the functionalities of a mobile device is limited compared to a PC, the utilitarian values of convenience and time/cost saving possessed by a mobile device over a PC in relation to online shopping provide enough motivation for mobile shoppers to choose the former^{[30]-[3]}.

2.4 Perceived Return vs. Perceived Risk

Based upon^[31], it is stated that the behavioral intention of customers in purchasing products or services is dependent on their positive or negative beliefs, identified as perceived return and perceived risk. It is argued that the decision making of an individual whether to purchase involves the process of comparison between the positive utility (perceived return) and negative utility (perceived risk) by which the individual either attempts to minimize the perceived risk/cost or maximize the perceived return/benefit^[31].

A similar analogy could be made towards the concept of mobile shopping. An online shopping customer may consider the perceived risk and return of shopping online through a mobile device instead of a PC. The risks or costs that the customer associates with mobile shopping may include slower and unreliable internet

speed compared to cable-based PCs along with related fees of Internet-enabled mobile devices (i.e. mobile data plan fee). On the other hand, the returns or benefits of mobile shopping perceived by the customer may include relative convenience to shop online anywhere anytime compared to PCs and on-the-spot product information availability. Once the shopper determines that the perceived return offered by mobile shopping worth the risk and cost, the decision to proceed with mobile shopping would be made.

3. PAST STUDIES ON MOBILE SHOPPING CONSTRUCTS

Figure 1 provides a holistic view of constructs that represent the elements of least effort and utilitarian values of mobile shopping over PC-based online shopping. These constructs are presented based on the collection of past studies on mobile shopping environment.

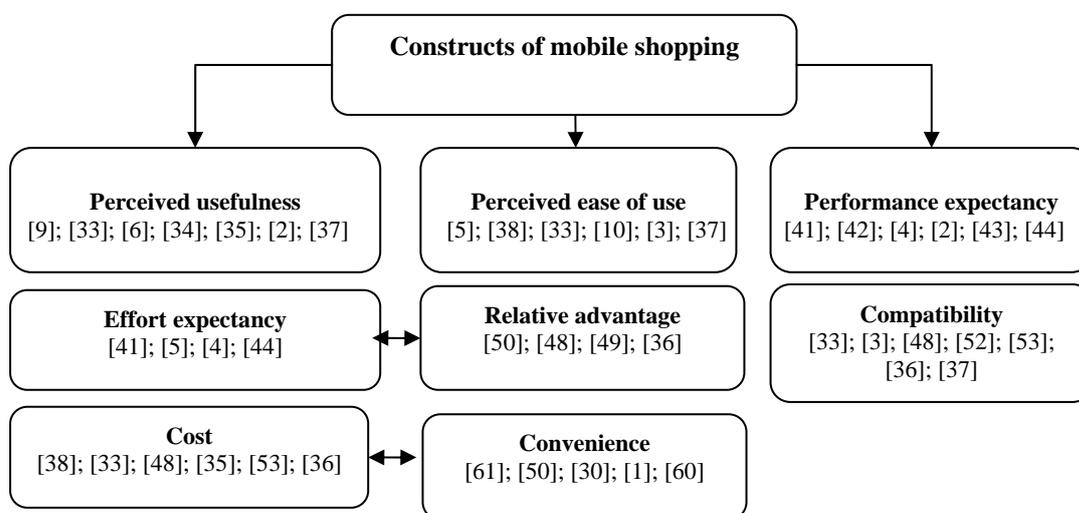


Figure 1: Constructs of mobile shopping

3.1 Perceived Usefulness

Perceived usefulness (PU) is defined as the degree to which an individual perceives that the usage of a particular system would increase his/her performance of behavior or work^[32]. This construct suggests that users tend to utilize or forego technology or system based on the level of assistance that a particular technology or system provides to ensure users could perform better jobs. Characterization of PU within the technology acceptance model maintains the existence of utilitarian values in regards to online shopping^[29]. In the context of mobile shopping, PU echoes the concept of utilitarian values where mobile devices would presumably lead to better online shopping activities compared to PCs. The PU of mobile shopping would bode well with utilitarian-based online shoppers as mobile devices are thought to allow a better search on product information, cost / time saving and localization of products and services purchases compared to other online shopping channels^{[30]-[3]-[4]}. Furthermore, past studies have indicated that PU is a strong predictor of the mobile shopping intention. Strong positive outcomes and consensus have been maintained in the relationship between PU and mobile shopping continuance and adoption^{[9]-[33]-[6]-[34]-[35]-[36]-[37]}.

3.2 Perceived Ease of Use

Perceived ease of use (PEOU) is the perceived level of easiness to which a user would experience when

using a particular technology or system^[32]. PEOU attempts to ascertain the amount of effort (i.e. time, energy, resources) a user is required to exert when using a particular technology for completing tasks. Essentially, technology or system that requires more effort from the users to exert is less likely to be adopted or accepted by users for a longer period of usage. The characteristics of PEOU closely resemble the aforementioned principal of least effort within the Lazy User Theory as users are assumed to naturally choose or implement solutions (technology or system) that are easier to perform for implementing desired activities. The availability of specialized applications within mobile devices makes it much easier for customers to shop online as the shopping features in desktop PCs. Since most online shopping websites are readily available for the mobile platform either as mobile website or as stand-alone app, customers are no longer constrained by the need to sit in front of a PC and set it up to visit online shopping sites since mobile shopping applications are easier to be accessed at a push of a button^[1]. Similar to perceived usefulness, there are evidences for the prediction value of PEOU on the mobile shopping intention of users^{[5]-[38]-[33]-[10]-[3]-[37]}.

3.4 Performance Expectancy

Performance expectancy (PE) is a construct of the Unified Theory of Acceptance and Use of Technology (UTAUT). It is defined as the degree to which users perceive that the use of a technology or a system will assist them to achieve their task performance^[39]. PE bears close resemblance to PU in TAM as both constructs focus on the capability of a technology to facilitate the task performance. Therefore, the same rule of utilitarian value of mobile shopping on PU is applied to PE within the context of the framework. As far as performance expectancy within the mobile shopping, several utilitarian PE elements such as usage flexibility, convenience of time and place, personalization and effectiveness have been identified [40]. For instance, customers are expected to maintain favorable views towards mobile shopping when the services at hand are able to assist them in product/price comparison, time/cost saving and identification of localized product promotions^[4]. Utility-based PE has been proven to predict the intention of users to perform mobile-based activities such as shopping and banking^{[41]-[5]-[42]-[4]-[43]-[44]}.

3.4 Effort Expectancy

Effort expectancy (EE) is another construct found in UTAUT. With PEOU in TAM, EE refers to the degree of easiness users relate to the utilization of a particular technology^[39]. In the context of mobile shopping, EE can be associated with ease of access to mobile shopping sites and the navigation of the features and functions within the mobile sites^{[4]-[43]}. This could be made possible by the increasingly sophisticated mobile applications which are easy to navigate and use. Mobile shopping services that contain utilitarian values would positively affect customers' effort expectancy as easy access and utilization of such services would assist in ensuring efficient shopping activities of customers^[4]. Similar to PEOU, EE is shown to mirror the principal of least effort when it comes to the selection of solution by users when implementing activities. The construct also contributes to the predictive value of mobile shopping intention based on past studies of mobile-based activities^{[41]-[5]-[45]-[4]-[44]}.

3.5 Relative Advantage

Relative advantage (RA) is a construct based on Roger's Diffusion of Innovation theory^[46]. It refers to the degree to which a particularly perceived innovative technology provides better advantages over its predecessor^[47]. RA of mobile shopping payment system is viewed upon as a positive valence towards the intention of users

to adopt over traditional online payment^{[48]-[36]}. While both mobile and conventional online shopping offer more convenience over physical brick-and-mortar stores, it can be assumed that mobile shopping provides more relative advantages over conventional online shopping. This is due to the perceived ability of users to access financial assets and alternative payment systems (i.e. mobile wallet) anywhere and anytime when shopping online through mobile devices; leading to increased preferences for mobile shopping^{[49]-[48]}. As a result, RA has been identified as a key construct in influencing the behavioral intention and adoption decisions of users in mobile-based shopping activities^{[50]-[48]-[49]-[36]}.

3.6 Compatibility

Compatibility (COMP) is a construct within the Diffusion of Innovation theory. It is the perceived level of consistency that a particular technology or innovation has with the user's current values and needs along with past experiences^[47]. According to DOI, innovation or technology that is compatible with the user's particular lifestyle and need is more likely to be adopted or used^[46]. COMP is categorized into two aspects: behavioral COMP and needs COMP^[51]. Behavioral COMP refers to the user's current values and past experiences while needs COMP refers to the user's needs that are met by the innovation at hand^[51]. In the context of utilitarian shopping motivation, mobile shopping would ideally be aligned and compatible with utilitarian-based users' need for faster and convenient shopping experience compared to the brick-and-mortar counterpart. Past studies have also found that COMP is a vital feature of mobile-based online shopping that influences the decision making process of users^{[33]-[45]-[48]-[52]-[36]-[37]}.

3.7 Cost

Cost associated with mobile devices to perform online transaction has been noted as one of the main barriers to its adoption among customers^[35]. Based on the concept of perceived return vs. perceived risk, the element of cost can be considered as the perceived risk associated with mobile shopping. In the past decade, the need for expensive Internet-enabled mobile devices and perceived transaction fees makes it difficult for customers to transition from PCs-based online shopping to mobile shopping [53]. Back then, only working individuals were able to afford such mobile devices, which made it difficult for young customers such as college students to perform mobile shopping as they cannot afford their mobile shopping activities. There were also other past indicated costs associated with mobile shopping such as relatively slower and unreliable internet speed compared to PCs, additional transactional fees and privacy risks^{[33]-[54]-[55]-[56]}, which discouraged customers from mobile shopping.

Nevertheless, recent trends, improvements and advancements in mobile technology have allowed for such costs to be minimized. Nowadays, customers are able to purchase more affordable and cheaper mobile devices such as smartphones and tablets with the numbers are expected to grow globally by the end of 2020^[57]. It could also be argued that if the cost of purchasing mobile devices to shop online must be accounted for, the same argument could be made towards PCs as customers would be required to take into account the cost of purchasing PCs if they opt to shop online using them. This, eventually, calls for the argument that the device cost should be discounted to be consider as a barrier. Additionally, the availability of significantly faster and reliable mobile networks in the form of 4G Long Term Evolution (LTE) compared to past 3G and CDMA-based mobile connection has also permitted a better outlook on mobile shopping [58]. Recent statistics revealed that

global penetration of 4G LTE has reached an all-time high with majority of countries having more than half of their mobile users' devices connected using 4G LTE networks^[59]. Slow and unreliable Internet speed when shopping using mobile devices would be less of an issue due to the existence of 4G LTE-connected mobile devices. Furthermore, the creation of non-restrictive mobile payment systems such as mobile wallets and PayPal for mobile shopping transactions has dramatically minimized the additional transactional fee and cost associated with mobile shopping^[7].

3.8 Convenience

Convenience is another important construct that helps to determine the mobile shopping intention of customers. Mobile shopping convenience is mainly concerned with the customers' ability to access online shopping services anywhere and anytime with less or no physical restriction as compared to desktop PCs^{[60]-[2]}. Convenience, in its entirety, could also be viewed as mobility because it allows customers to satisfy their purchasing goals with a great efficiency compared to other shopping channels^{[40]-[52]}. In terms of mobile shopping, convenience resulted from mobility satisfies the need of customers for travel just to shop, in which it expresses the benefits of location, time, access to shopping services and use of shopping services^[52]. Following the concept of perceived return vs. perceived risk, convenience offered by mobile shopping would obviously be viewed as the perceived return that customers gain in comparison with the perceived risk (costs associated with mobile shopping).

4. FRAMEWORK DEVELOPMENT

From the above discussion, we propose a *posteriori* framework to explain mobile shopping adoption based on two considerations. First, the applicability for the concept of least effort and utilitarian-based values. Second, the revision of constructs within current technology adoption models.

4.1 The Distinction between PC-Based and Mobile-Based Online Shopping

As shown in Table 1, there are significant distinctions between PC-based and mobile-based online shopping. These distinctions may include network infrastructure, devices used, usage environment and value propositions. Furthermore, past studies on mobile shopping lacked the effort to explain the usage intention of users based on these distinctions, especially when considering elements such as convenience and mobility that are exclusively offered by mobile devices. Therefore, a revision of current adoption models must be undertaken to explain the activity of mobile shopping through these aspects.

Table 1: The Distinction between PC-based and Mobile-based Online Shopping

	PC-based Online Shopping	Mobile-based Online Shopping
Network Infrastructure	Land-based Internet connection (i.e. LAN)	Wireless network (i.e. Wi-Fi, LTE, HSDPA)
Devices Used	Personal computers or laptops Larger screen size Higher processing capability	Mobile devices (i.e. smartphones, tablets) Limited screen size Relatively lower processing capability
Value Propositions	High media richness Stable network connection	Personalized services and applications Ubiquity and mobility Location-based services

4.1.1 Utilitarian Shopping Expectancy

Since UTAUT is a technology adoption model that consolidates past models such as TAM, TPB and TRA, it is not surprising that the construct of PU in TAM shares similarities with PE within UTAUT since both constructs refer to the degree to which the user believes that a technology will enhance his or her performance in achieving desired tasks. It should also be noted that RA within DOI also alludes to PE of UTAUT [39]. In terms of convenient mobile shopping, these constructs are incorporated and combined into a single entity coined “utilitarian shopping expectancy” to illustrate the utilitarian-based shopping motivation that focuses on easier and less costly online shopping experience compared to PC-based online shopping.

4.1.2 Least Effort Expectancy

The construct EE in UTAUT is also derived from PEOU within TAM and both constructs refer to the degree to which a particular technology is easy to use in order to achieve desired activities. A new construct termed “effort shopping expectancy” would be better suited to define the level of easiness that mobile shopping offers in terms of online shopping, especially when compared to PC-based shopping. This follows the principal of least effort in which mobile-based online shopping would arguably requires less efforts from customers to perform while allowing for easier shopping experience with the availability of specialized applications, personalization and alternative payment methods.

4.1.3 Utilitarian Compatibility

COMP is repurposed as “utilitarian compatibility” to represent the notion of utilitarian shopping motivation that exists within the mobile shopping experience. As previously mentioned, online shopping in general is thought to be more convenient than brick-and-mortar, with the element of Internet capability that resides within PC or mobile devices such as smartphones or tablets would appeal to customers. Furthermore, the technology cluster model [46] posited that a technology that possesses the same capability or functionality as its predecessor is more likely to be adopted by users. This would suggest that customers with past PC-based online shopping will find it easier and compatible to adopt mobile shopping as past experiences and values would be aligned in the mobile channel [40]. Furthermore, the aspect of utilitarian shopping value that mobile devices offer outweigh those of desktop PCs as the added advantages of mobility and ubiquity would suggest that mobile shopping is more compatible for the need of utilitarian-based online shoppers [4].

4.1.4 Utilitarian Attitude

The concept of utilitarian shopping motivation could also benefit from the inclusion of another construct termed “utilitarian attitude”. This refers to customers’ attitude towards mobile shopping, or at least in general online shopping, from the perspective of their own attitude towards utilitarian based shopping value. It is important to distinguish attitude from other proposed utilitarian-based constructs because it has been shown that attitude can mediate the effect of constructs such as PEOU, PU and PE on intention, as well as it can be considered an antecedent construct by itself [41]-[4]-[37]. Therefore, the construct of “utilitarian attitude” would be appropriate in order to empirically investigate the intention of users’ intention to adopt or use mobile shopping.

4.1.5 Perceived Convenience

Based on the return vs. risk concept, the construct termed “perceived convenience” is also suggested within

the proposed framework. As previously discussed, the decision making process of customers for mobile shopping could be influenced by their perceptions of the benefits and costs associated with this particular shopping channel. If customers conclude that the convenience offered by mobile shopping outweighs the costs, it is logical enough for them to choose mobile shopping as the medium for online shopping. In addition, the associated costs with mobile shopping are minimized as technological advancement of mobile technology continues to progress overtime [3]. This only makes it more vital for the convenience aspect of mobile shopping to be investigated in an empirical capacity through the construct of “perceived convenience”.

5. FUTURE RESEARCH

To study the intention of users to adopt mobile shopping through the perspective of convenience and effort that mobile devices provide, this paper proposed a *posteriori* model that incorporates several constructs to represent a different and novel aspect of mobile shopping. The constructs are based on previous studies that employed technology adoption models such as UTAUT and TAM and are thought to relay on the concept of principal of least effort, utilitarianism and utilitarian shopping motivation. After establishing the theory behind the framework, it is imperative to further establish the empirical aspect of the framework and develop and identify the measurement items of the constructs that permit to empirically validate and test the proposed framework. The framework may benefit from including cross-section studies, longitudinal studies, focus/control groups and qualitative validation (industry experts) to further improve and understand the mobile shopping intention among users.

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