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Mobile Shopping Convenience Behavior: The Quest for a Conceptual Framework

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Abstract: Despite the overwhelming prediction of increasing trends for mobile shopping activities among customers based on the advantages provided by the mobile shopping channel, there is an urgent need for the re-assessment on the roles of technology adoption models and theories in explaining the adoption of mobile shopping among customers. Moreover, there is a lack of empirical testing for investigating the influence of the multidimensional convenience construct on customers' mobile shopping adoption based upon the utilitarian motivations, where convenience is one of the main antecedents for utilitarian-based customers to use a particular shopping channel. The objective of this paper is to propose a conceptual framework that attempts to explain the mobile shopping adoption of customers by focusing on the unique advantages of mobile devices over PC that allows for better online shopping experience for customers. This study will look into the possibility of synthesizing different adoption models (TAM, UTAUT and IDT) and their constructs into a single cohesive theoretical framework that would be able to explain the mobile shopping channel adoption of customers through the unique characteristics that the channel possess over PC-based online shopping. The paper has identified several theories and concepts (Lazy User Theory, utilitarianism and utilitarian shopping motivations) which fit such requirements. Furthermore, this paper will also employ the multidimensional construct of convenience within the framework in order to explain the mobile shopping adoption intention of customers.

Keywords: mobile shopping, convenience, adoption models, unitarianism, least effort, lazy user model.

1. INTRODUCTION

The aspect of online shopping has grown significantly with the application of mobile Internet technology. The concept of mobile commerce is assumed to offer comparable if not bigger effects on both businesses and industries^{[1][2][3]}. This stems from the unique capability of Internet-enabled mobile device users to access online business platforms at any given time and place^{[4][5]}. The growth of m-commerce is only fuelled much further with the advancement of mobile technology in which businesses are attempting to make the most of the technology in order to open up new channels for reaching customers^{[1][6][7]}.

However, despite the overwhelming prediction of increasing trends for mobile shopping activities among customers based on the advantages provided by the mobile shopping channel^[8], recent data shows an alarming and worrying development. While the numbers of mobile shoppers increased, there are still a majority of customers that still prefer to shop using PC or brick-and-mortar methods. It is noted that while one third of global merchants' online traffic originate from mobile devices, only 11 percent of actual sales took place on those mobile devices^[8].

Moreover, there are two main problems found in relation to explaining the adoption intention of customers towards mobile shopping. First, there is an urgent need for the re-assessment on the roles of technology adoption models and theories such as TAM, UTAUT and IDT in explaining the adoption of mobile shopping among customers.^[9] has claimed that existing technology adoption models have a similar shortcoming in explaining the behaviours of users; mainly, constructs such as perceived ease of use and perceived usefulness may be outdated in its application for today's technology. This is due to the belief that future technologies have far

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surpassed their predecessors in functionalities and use contexts, so much so that these traditional variables may not be sufficient and needs improvement in explaining users' adoption behaviours of today's technology context^[9]. Thus, the constructs of TAM, UTAUT and IDT should then focus on the unique characteristics and advantages that differentiate mobile shopping from its PC-based online shopping counterpart.

The second problem is the lack of empirical testing for investigating the influence of the multidimensional convenience construct on customers' mobile shopping adoption. Based upon the utilitarian motivations, it is widely agreed that convenience is one of the main antecedents for utilitarian-based customers to use a particular shopping channel^{[10][11][12]}. Convenience is concerned with the customers' tendency to save time and effort in performing their shopping activities^{[13][14]}. Numerous studies have explored the influence of convenience on the mobile shopping adoption-related variables of customers. This is because the emphasis is placed upon the advantages of convenience that mobile devices have over PC in terms of online shopping (i.e.^{[15][16]})

The objective of this paper is to propose a conceptual framework to explain the mobile shopping adoption of customers by focusing on the unique advantages of mobile devices over PC for better online shopping experience. This will be done by looking into the possibility of synthesizing different adoption models (TAM, UTAUT and IDT) and their constructs into a single cohesive theoretical framework that explains the mobile shopping channel adoption of customers. This would be achieved by looking into several existing theories and concepts that would explain individual behaviours for opting for services or technologies that require less effort to perform and focused on the maximization of utility. The paper has identified several theories and concepts (Lazy User Theory, utilitarianism and utilitarian shopping motivations) which fit such requirements. Furthermore, this paper will also employ the multidimensional construct of convenience within the framework in order to explain the mobile shopping adoption intention of customers^[17].

2. THEORETICAL AND CONCEPTUAL FOUNDATIONS

2.1 Lazy User Theory

^[18] presented a theory to explain the decision making process of users in choosing solutions that would fulfil their needs by using the least effort. The theory is based upon the principal of least effort that was theorized by^[19] where it is argued that human behaviours 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 obtaining desired outcomes.^[20] reassessed that the principal is mainly derived into two main aspects which are minimizing the rate of work and the average rate of work. For example, an individual may search for the meaning of a word by using a smartphone rather than looking for an actual physical dictionary. The result will still end with the individual finding the meaning of the word using the minimum average rate of work to actually perform the activity of seeking the information.

^[21] stated that the paths of least effort (solutions) considered by an individual to solve the problem at hand should regard those paths as only probable paths. The work of estimating a path with the least effort must be included into the overall total work of taking the path with the least effort. This is due to the notion that an individual in choosing a solution or path that uses the least amount of effort would also attempt to minimize the effort of estimating and taking the path itself.

Therefore, based on this judgment, it can be assumed that customers will logically prefer mobile devices from PC as it is thought using mobile devices would require less effort from customers to perform the same activity to shop online. 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 in the method used by customers to achieve said objective. Moreover, the theory suggests that certain constructs that

exist in current technology adoption models of TAM, UTAUT and IDT (i.e. perceived ease of use, effort expectancy, relative advantage and compatibility) represent the principal of least effort when it comes to the adoption decision of users.

2.2 Utilitarian Shopping Motivation

Utilitarianism could be found in the subject of consumer purchasing behaviour which is known as utilitarian value (i.e. [22]; [23]; [24]). Utilitarian value is one of the two shopping values that is sought by customers with the other being hedonic value [25]. [22] described utilitarian value as something that is work-conscious, task related and rational. Customers seeking utilitarian value when shopping are often motivated on the aspect of efficiency and convenience; this is where the completion of the shopping task being done in a fast manner becomes the main objective [22] [26]. Utilitarian shoppers focus their values on the need to successfully perform shopping activities without hassle whereas the feeling of enjoyment when shopping is the main drive for hedonic shoppers [25]. 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 activity [12]. Hedonic shopping motivation is concerned with the customers’ need of becoming emotionally fulfilled when performing shopping activities [22].

In terms of general online shopping, customers seek out several utilitarian values that would be able to assist in making 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 [10], [11] [12] [24]. 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 mobile devices are limited compared to PC, the utilitarian values of convenience and time / cost saving possessed by mobile devices over PC in relation to online shopping provide enough motivation for mobile shoppers to choose the former [5].

It has been noted that within utilitarian systems, the variable perceived usefulness of TAM would represent utilitarian values of users’ adoption and acceptance of technology [27] [28]. In the context of online shopping, [11] stated that the perceived usefulness is centred on the belief that online shopping will be able to assist customers improve their shopping productivity, enhance shopping effectiveness, finding desired products or services more easily and improve their overall shopping ability. Similarly, the performance expectancy variable within UTAUT has also been attributed to the online utilitarian shopping value of customers. As [29] argued, performance expectancy represents the utilitarian motivation of customers in terms of their view towards online shopping as the variable represent customers’ belief that the functionality of online shopping will allow them to achieve their shopping task successfully as compared to alternative shopping channels such as brick-and-mortar stores. Convenience is also considered to be a vital variable of online utilitarian shopping value [11] [12] [24]. Utilitarian customers tend to perceive that it is far more convenient for them to shop online as they can locate and compare retailers along with evaluating price / quality of products or services while at the comfort of their home or office [12]. The role of compatibility has also been suggested to be influential on the values and motivational orientation of utilitarian individuals [30]. In the case of online shopping, revealing that compatibility of customers with technological development has been shown to influence their adoption intention of online shopping. The study by [31] also discovered that the factors of compatibility (i.e. usage of direct shopping, usage of Web browsing for products / service at office and home) have significant influence on the adoption of online shopping among customers.

2.3 Multidimensional Convenience

As previously stated, convenience is one of the main elements that constitute the value of utilitarian-oriented customers^{[10] [11] [12]}. However, it is important to note that convenience itself is a whole construct that should still be treated separately from utilitarian values. Early definition of convenience denotes that it is an attribute of the product itself that allows the customers to buy it easily from the shelf where the product can be located by the customer in the least amount of time^[32]. As argued by^[33], both the cost of the goods and the cost of convenience in obtaining the goods or services will influence the customers purchasing patronage. Thus, this aspect of convenience cost has led^[33] to place emphasis on the notion of “place convenience” which deals with the full utilization of space and distance that would lead to the maximization of convenience cost saving.

In general, it is widely agreed that convenience is a multidimensional construct in nature^{[34] [35] [36] [14]}. As such,^[37] suggested that there are six classes of convenience: (1) time utilization, (2) portability, (3) accessibility, (4) handiness, (5) appropriateness and (6) avoidance of unpleasantness where these classes encompass the notion that the convenience perspective of customers will vary depending on the situation those customers are in. Subsequently,^[35] Brown (1990) proposed a general convenience concept that contains five dimensions which are (1) time, (2) place, (3) acquisition, (4) use and (5) execution.^[13] considered alternative convenience dimensions that are aimed for the retail service convenience context in which there are four dimensions: (1) access, (2) search, (3) possession and (4) transaction. Accordingly,^[39] introduced an improved construct of service convenience dimensions where it is consisted of these dimensions: (1) decision, (2) access, (3) transaction, (4) benefit and (5) post-benefit convenience. Table 1 presents a summary of the chronological progression for the conventional convenience dimensions.

Table 1. Chronological Progression of Convenience Dimensions

References	Context of convenience	Convenience dimensions
[37]	Classification of convenience goods and services	Time utilization, portability, accessibility, handiness, appropriateness and avoidance of unpleasantness
[35]	General convenience	Time, place, acquisition, use and execution
[38]	General convenience	Time, place and effort
[13]	Retail service convenience	Access, search, possession and transaction
[39] [14]	Retail service convenience	Decision, access, transaction, benefit, post-benefit

Over time, the concept of convenience has further evolved as technology advancements and socioeconomic changes have caused the shopping behaviours of customers to change.^[40] Colwell *et al.* (2008) suggested service convenience dimensions that were tested for online customers retailing in order to ensure generalization capability. As was told, the dimensions of service convenience that were introduced by^[40] Colwell *et al.* (2008) are (1) decision, (2) access, (3) transaction, (4) benefit and (5) post-benefit convenience. Additionally,^[34] Beauchamp and Ponder (2010) also have compared the perceived dimensions of convenience for online customers. The authors employed four retail convenience dimensions (access, search, transaction and possession) for identifying the key differences and priorities in the online customers' context. More recently,^[36] have proposed several convenience dimensions that are specifically intended for the online shopping context. They argued that salient and underlying dimensions of convenience that makes up the online shopping experience of customers are less investigated as past studies were more concerned on the service quality in online shopping

that alludes to the aspect of convenience within this particular shopping medium. They have further established six key dimensions that represent the service convenience of customers within the online shopping context which are (1) access, (2) search, (3) evaluation, (4) transaction and (5) possession / post-purchase convenience. Table 2 presents a summary online shopping convenience dimensions.

Table 2. Dimensions of online shopping convenience

References	Convenience dimensions
[40]	Decision, access, transaction, benefit, post-benefit
[34]	Access, search, transaction and possession
[36]	Access, search, evaluation, transaction, possession and post-purchase

3. VARIABLES OF MOBILE SHOPPING ADOPTION

Table 3 provides a holistic view on variables available in technology adoption models (TAM, UTAUT and IDT) and the convenience concept. These variables are presented based on collection of past studies within the literature that are related to the mobile shopping environment which include mobile payments and mobile ticketing. It should be particularly noted that the convenience construct in the findings for mobile shopping construct is uni-dimensional, where a lack of literatures on the effect of multi-dimensional convenience effect on mobile shopping still exist.

For this reason, mobile shopping is considered to be a branch of mobile commerce which also includes other types of services such as mobile banking, mobile Internet and mobile entertainment^{[41][5]}. Additionally, there are significant distinctions between PC-based and mobile-based online shopping. The distinctions between these two online shopping medium will also include network infrastructure, devices used, usage environment and value propositions^{[5][29]}. Therefore, based on these distinctions, mobile shopping can be defined as the activity of purchasing products or services online through the use of mobile devices^{[42][29][4]} which merits the inclusion of mobile payment and mobile ticketing.

Table 3. Variables of Mobile Shopping Adoption

Variable	References
Perceived Usefulness (PU)	[43] [44]; [42]; [46]
Perceived Ease of Use (PEOU)	[45]; [1]; [44]
Performance Expectancy (PE)	[48]; [49]; [29]
Effort Expectancy (EE)	[48]; [49]; [45]; [29]
Relative Advantage (RA)	[15]; [47]; [50]
Compatibility (COMP)	[44]; [47]; [41]; [50]
Convenience (CONV)	[51]; [15]; [16]

4. PROPOSED VARIABLES FOR MOBILE SHOPPING ADOPTION

In order to fulfil the first research problem, this paper proposes that the variables in previous section are integrated and re-introduced to fit the concepts of Lazy User Theory, utilitarianism and utilitarian shopping values as illustrated in Table 4.

Table 4. Proposed Variables for Mobile Shopping Adoption

Proposed Variable	Originating Variable (s)	Rationale
Least Effort Expectancy	Perceived ease of use (TAM) Effort expectancy (UTAUT)	<ul style="list-style-type: none"> This follows the principal of least effort in which mobile-based online shopping would arguably require less effort from customers to perform along while allowing for easier shopping experience with the availability of

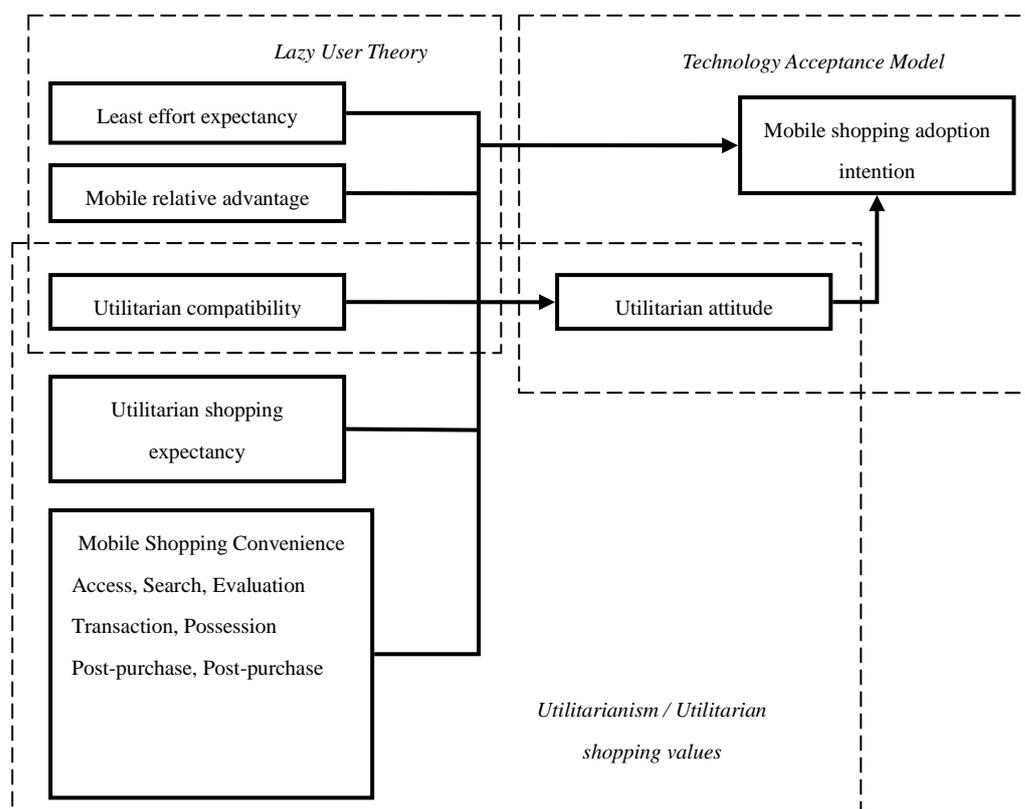
			<ul style="list-style-type: none"> specialized applications, personalization and alternative payment methods^{[43] [15] [47]} Past studies found the level of effort required by customers in using mobile devices to shop online is relatively lower than what is required by PC-based shopping^{[45] [29]}
Utilitarian Expectancy	Shopping Performance (UTAUT)	Perceived usefulness (TAM) expectancy	<ul style="list-style-type: none"> To illustrate utilitarian-based functionalities of mobile devices that customers find useful in order to fulfil their needs for online shopping experience that focuses on expediency and efficiency. The utilitarian performance expectancy and perceived usefulness of mobile shopping assist customers in comparing prices of products or services, obtain relevant information through their mobile devices at any point of location / time and increase overall online shopping performance^{[46] [29]}
Utilitarian Compatibility	Compatibility (IDT)		<ul style="list-style-type: none"> Represent the notion of utilitarian shopping value and principal of least effort that exists within mobile shopping. The technology cluster model posited that technology possessing the same capability or functionality as its predecessor is more likely to be adopted by users. Customers with past PC-based online shopping will find it easier and compatible to adopt mobile shopping as past experiences and values of shopping online through PC would be aligned and translate well in the mobile channel^{[44] [50]}
Mobile Relative Advantage	Relative advantage (IDT)		<ul style="list-style-type: none"> Follows the principal of least effort within Lazy User Theory^[18] The relative advantage of mobility offered by a mobile device while providing the same or more effective online services compared to PC makes it the preferred choice among customers to shop online as the device can be easily carried by customer anywhere and anytime^{[15] [50]}
Utilitarian Attitude	Attitude (TAM) Utilitarian attitude [26]		<ul style="list-style-type: none"> Refers to customers' attitude towards mobile shopping from the perspective of utilitarian based shopping value. It is important to distinguish attitude from other proposed utilitarian-based constructs as attitude can mediate the effect of perceived usefulness and performance expectancy while being able to stand as an independent construct altogether^{[49] [29]}

5. PROPOSED MOBILE SHOPPING ADOPTION FRAMEWORK

Supply chain coordination has become the key strategic area that has direct impact over the success of any enterprise in today's highly competitive business environment.

As the paper presented these newly proposed variables for examining the mobile shopping adoption intention, it is only fitting for the study to present the complete research framework that will be evaluated. Conclusively, the framework developed (Figure 1) within this paper have several key points:

1. The variables least effort expectancy and mobile relative advantage are derived from the Lazy User Theory by ^[18].
2. The variables of utilitarian shopping expectancy and dimensions of convenience is representative of both utilitarianism and utilitarian shopping values.
3. The variable of utilitarian compatibility is overlapped and represented by the Lazy User Theory, utilitarianism and utilitarian shopping values.
4. The dimensions of online shopping convenience by ^[36] are representative of both utilitarianism and utilitarian shopping values.
5. Utilitarian attitude is intended to mediate the relationship between the proposed new variables and dimensions of convenience with the mobile shopping adoption intention.
6. The relationship between utilitarian attitude and mobile shopping adoption intention was derived from TAM.



Additionally, this paper presents the proposed proposition for the relationships between the variables as such:

Proposition Proposition Statement

Proposition 1 There is a significant relationship between independent variables (least effort expectancy, mobile relative advantage, utilitarian shopping expectancy, mobile shopping convenience dimensions) and

dependent variable (mobile shopping adoption intention).

Proposition 2 There is a significant relationship between independent variables (least effort expectancy, mobile relative advantage, utilitarian shopping expectancy, mobile shopping convenience dimensions) and mediating variable (utilitarian attitude).

Proposition 3 The mediating variable (utilitarian attitude) mediates the relationship between independent variables (least effort expectancy, mobile relative advantage, utilitarian shopping expectancy, mobile shopping convenience dimensions) and the dependent variable (mobile shopping adoption intention).

6. CONCLUSION

The paper has discussed the problems related with the application of technology adoption models and multidimensional convenience construct in investigating the mobile shopping adoption of customers. To solve the problems, the paper has proposed a framework that attempted to integrate the models of TAM, UTAUT and IDT while incorporating the multidimensional construct of convenience. The underlying theories and concepts utilized in the paper are the Lazy User Theory, utilitarianism, utilitarian shopping values and the concept of multidimensional convenience. The next phase planned would be to empirically investigate the validity of the framework by employing quantitative analysis such as field survey, focus group, cross-sectional studies and longitudinal studies to support the variables and their propositions.

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