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Research paper



Usability of mobile retailing application: personalizing women's attributes

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Abstract

Digital era has considerably changed the way of the management and execution of daily operation conducted in business. The advancement of technology and Internet has transformed the traditional marketing systems and methods where they enable retailers to stay connected to global buyers in a much faster and efficient way. This study focuses on the discovery of the women's attributes that influence the usability of the mobile retailing application. Apart from that, a prototype of DeLemari mobile retailing application has also been developed and evaluated as it can be an innovative way of offering products and services that specifically personalising women's needs. This study was conducted using mixed method: qualitative and quantitative methods approach. Without a doubt, mobile retailing application platform has dramatically transformed the way of conducting online businesses in order to reach out to women buyers, 24 hours and seven days a week. For that reason, this study needs to be conducted to explore how personalising women's attributes can contribute to successful mobile retailing among womenfolk, thus enhances its usability. Furthermore, the right interface of the mobile sites for retailing should be considered and customised based on these personalising factors such as personalization, connectivity, interfaces: navigation feature and design, ease of use, and reachability. Based on the result, the strengths of DeLemari are in terms of its minimal, feminine and elegant design that influenced most of the intended users.

Keywords: *Mobile; Retailing; Women's; Application and Personalizing.*

1. Introduction

This convergence of mobile technology has led to the development of a new paradigm, called mobile computing. In most technologically advanced countries, most individuals are often having more than one mobile phone as recorded therefore mobile phone diffusion rates have reached over 100 percent (BBC News, 2010). It is estimated that 500,000 new Android platform based devices are registered every day as announced by Google company, and obviously, this has shown the increasing number of mobile user worldwide (Reisinger, 2011). This explosive of growth on the Internet has been acknowledged to have revolutionized customers' transaction in many ways. Since 1973, when the first mobile phones were used until today, this fast growing technology has connected more than 4 billion people and in September, 2016 more than 7.8 billion mobile phones subscriptions have been recorded (Lin, Paragas, Goh & Bautista, 2016). Mobile device platforms allow users to get connected and have two-way communication with the use of Internet, by using several selections of services like sending messages, making a call, emailing, and performing others task (Davis, 2016). For the past few years, mobile phone technology has changed expressively in conjunction with this market trend. More sophisticated mobile devices are available in the market and hence, operating systems enhancement and variety of services being offered need to be identified. This mobile application usability should be studied more in a range of contexts and previous researchers have used a diversity of conceptualizations and measurement approaches to study the topic. Scholarly article noted that many researchers who are exploring mobile commerce facilities have ignored the users' needs (Chiang and Liao, 2012). Forrester Research in Chen (2012) estimated that there will be 350 million workers who will be using smartphones while 200 million of them will take the devices to the workplace around the world in 2016 because many businesses are using mobile communication devices in conducting their businesses.

Prototype which is named DeLemari Mobile application has been developed to support the aims of this paper, as the following objectives:

1) To identify women's personalizing attribute that influences the usability of the mobile retailing application.
2) To develop and evaluate the usability features of DeLemari mobile retailing application prototype that personalises the women's characteristics.

2. Literature review

To complement the use of mobile application in retail sectors, personalization can play a fundamental role in delivering precise services to the potential users at the right moment, supporting customers in many aspects with diverse applications. Personalization is referred as an indirect determinant of user's attitude towards using mobile phone services. At the same time, this criteria will cater to understand the attitudes of the users so that customized application can be developed. Hence, there is an

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impact of personalization towards the context on users' intention to adopt mobile services (Sheng, Nah & Siau, 2008). In this context, personalization is claimed to give positive impact on the user's purpose to utilize a service and taken as a single adoption factor (Bevan, 2011).

According to Risch (2007), personalisation will offer a predefined platform based on customer personal requirement. Similiarly, Deitel et al.(2001) defined personalisation as customization of customers in using the product, services and web-based application. In the same vein, Adomavicius and Tuzhilin (2005) noted that personalization presents the customer in terms of communication, content, services, product recommendations and electronic commerce collaboration by providing websites that are tailored to fit customer's needs. Context, content and profiles of the users are also the important attributes in the making of personalised mobile services (Chen, 2011). There will be positive effects of personalization, including engagement, performance, persistence, identity, social acceptance, and social status (Oulasvirta and Blom, 2008). In most of the studies, the focus of personalization is on the technical aspects of personalised mobile services. However, another stream of personalization research is to study user behaviours (Shuk Ying and Bull, 2010). Presentation and content personalization are the two most common types of personalization. The user modeling is playing a substantial role in understanding users and their needs. Besides that, mobility can also be a key adoption factor in mobile services (Nikou and Mezei, 2013). Moreover, the study showed that mobile services adoption is positively being accepted based on service functionality, quality of the service, usability, and application accessibility. It is assumed that personalization can enhance all these adoption factors.

Past studies have examined the relationship between gender and attitudes towards computers (Bujang, Suki & Suki, 2016). This served as a foundation for the study of gender differences and m-commerce usage activities. Finding by Lee (2011) added that women are the majority users of Internet application where they spend 30% more time on these sites compared than men, while women's mobile social network usage is 55%. Kaefer (2014) summarized that women spend more time than men in accessing the mobile web and using the application. This study also found that women have more computer anxieties, less computer self-efficacy, and females are often found to be more fearful about using computers when compared to males.

Yang (2005), in a study of m-commerce adoption among Singaporean users, found that men in general viewed mobile commerce more favorably when compared to women. Past literature also claimed that males have more favorable attitudes towards computers compared than females (Schumacher & Morahan-Martin, 2001). Jackson et al. (2001), in their study on gender differences when using the Internet, found that women use email more frequently when compared to men that prefer use the web more frequently than females. However, user satisfaction improvement using personalised mobile acilities are valuable for the success of mobile retailing (Kim et al., 2009). Shoppers have progressively become more sophisticated and discerning therefore it is essential to consider personalise mobile application to tailor women consumers.

3. Overview of personalization

Knowledge regarding the personalization concept vital in designing attribute can encourage the acceptance level in using information and communication technology (ICT) (Oulasvirta and Blom, 2008). Users' needs and requirements need to be gained to overcome the limitations of diffusion research (Carlsson et al., 2007). Meanwhile, Kargin and Basoglu (2006) claimed that personalization could affect the attitude towards the use of the term of the intention to use mobile facilities. Personalization can be described as customising made by the users to meet their specification that satisfied (Barkhus and Dey, 2003). According to Ricken (2000), it is an effort to tailor consumers' preferences by building balanced relationship according the customer needs and at the same time, fulfils an objective that productively cater to address every individual's need. Fan and Poole (2006) have listed three scopes of personalization from design perspectives as they are: What to personalize in term of content, user interface, channel or information access and functionality. Secondly, to whom to personalize (individual or group) and lastly, who does the personalization (adaptive or adaptable). Yan et al. (2004) found that by personalising their mobile advertising through short mesangges (SMS), advertisers might have a chance reaching the focus group of consumers by advertising specifically to their targeted customers through personalization, in which the advertisers can reach out to their customers personally and accordingly. The retailers need information regarding their clients' demographics and areas, while some examinations expressed that nearby time and area are important parts to get consideration from consumers in regards to SMS advertising (Balasubramanian, Peterson & Jarvenpaa, 2002). Hence, if the advertisement meets the consumer's time and location, it is likely to have positive attitudes from consumers (Watson, Berthon, Pitt & Zinkhan, 2013).

4. Overview of mobile application usability

Usefulness is defined as values that derived from using a new technology (Kim, Chan & Gupta, 2007), while usability inspection, a common term for a set of cost effective methods is adapted in assessing the user interfaces to discover the usability problem (Nielsen, 1994). Likewise, usability is described as a person's perceptions and responses that result from the use and/or anticipated use of a product, system or service (Bevan, 2009).

There are three aspect need to be consider in term of mobile application usability such as efficient to be use, easier to learn and meet end user requirement and expectation (Nayebi, Desharnais & Abran, 2012). Venkatesh & Morris (2000) added that usefulness focuses on task accomplishment, and it shows the reflection of an individual commitment in an activity because of external rewards (Kim, Chan & Gupta, 2007) Meanwhile, Jeyaraj et al. (2006) in their study on predictors of IT adoptions, found that perceived usefulness is one of the most repeatedly studied variables and has been consistently shown to have a significant influence on the adoption of ICT Technologies. To add, Lee and Benbasat (2013) used seven design elements in e-commerce sites, namely context, content, community, customisation, communication, connection, and commerce to consider mobile application usability.

Purchasing on a mobile device might be difficult for a new and inexperienced user, therefore there is a need in developing the application that can easily be used. Mobile retailing application developers also need to balance between the ease of use and the functions of the applications, besides considering the physical characteristics of mobile devices (e.g. small display screens, difficulty in keying in data) can also serve as a constraint to mobile retail.

5. Methodology

This study uses mixed methods: quantitative (questionnaires: demographic and accesibility to mobile platforms) and qualitative (interview), in which 60 female participants were involved. According to Macefield (2009), 3 to 20 participants are considered as valid, and 5-10 participants are sensible baseline range. To add, these convenient sampling participants used android based smart phones and they had ample experiences in online purchasing, including DeLemari mobile application for the duration of 5 months. DeLemari is a prototype mobile application, designed to observe the usage and acceptance behaviours among women, utilising prototype development methodologies that consist of five

phases: requirements, design, implementation, verification and maintenance (adapted from Hughey, 2009).

6. Results and discussion

Table 1 indicates that most of the respondents are females who use mobile retailing application and have experiences in purchasing online. They are being chosen conveniently based on their online shopping experiences, mainly DeLemari application. This table also indicates the age of the respodents, where most of the respondents are at the age between 19 to 25 years old and 26 to 35 years old which are equivalent to 76.7% of the total respondents.

Table 1: Respondent Demographic

Items	Percentage (%)
Gender	
Female	100.0
Age	
≤ 18 years old	10.0
19 – 25 years old	50.0
26 – 35 years old	26.7
> 35 years old	13.3

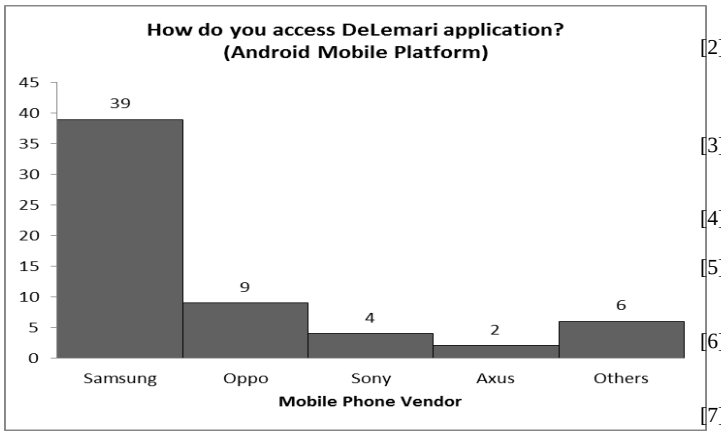

Fig. 1: Types of Android Mobile Platform Used by Users.

Figure 1 indicates the mobile platform used in accessing DeLemari mobile application among users. About 39% of the respondents are the users of Samsung mobile.

The next part of the finding summarises the interview results in which focuses on the usability of DeLemari mobile application. Most of the respondents stated that this application is easy to use in getting tangible product items without going through logistic tiredness. As a result, customers could reduce time taken to get product within a short period of time because the product will be delivered to their home address. In order to serve well the customer, the application creator provides users with bilingual command of languages. The graphic designs and interfaces such as its femininity components like the choice of colors and other similar elements are created in order to create feminine vein while using the application. Most of the respondents rated this application design highly that is believed to have eyes capturing entities that grab the customers 'attention to try to use it and continue using it.

Ease of navigating would be one the main focuses in developing this application where customers' preferences become an anchor that need to be blended successfully with what technology has offered. This app is reachable because this application is available and can be installed from Google store and directly can be used in mobile devices. Most of the respondents stated that this application gave them an easier way to browse pages to pages with clear and smooth navigation function. Other application interfaces include the selection of buttons which is easier to understand, due to the use of simple English language and simplification method in wording. The use of icons, symbols and images for this application are also easy to comprehend, resulting understanding of the visual literacy theory and user legibility

7. Conclusion

This application gives a delayed platform for customers to add their desired product in a cart or bookmarked product as a favorite item for future reference. A good thing about this function is it would enable customers to retrieve system history and yet, reduce time taken for them to make decision in purchasing product in the future. The familiarity of the customers with online shopping becomes one of the main reasons for people to have the tendency to use DeLemari as it is quite similar to some well-known application. The DeLemari takes the action of creating uniqueness by adding value to the existing application and it personalizes women's attributes. In terms of usability, this app is practical in terms of its women's personalization, connectivity, reachability, the ease of use and navigating, reachability, graphic interfaces and designs. Moreover, the strengths of DeLemari are its minimal, feminine and elegant design that influenced most of the intended users.

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