

A Proposed Study for Cultural Differences in Perceptions on the Success Factors of Mobile Devices for Commercial Activities : Case of U.S. and Korean Users

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ABSTRACT

Some constraints are existed in utilizing mobile commerce devices. One of the important factors deterring the diffusion of mobile commerce could be the differences in cultural background of the device users. To examine the effect of cultural differences on the perception for mobile shopping, the shoppers from two markedly different countries in their cultural background will be analyzed. The results of the study are expected to show how some of the verified variables would affect the user perception in mobile device use for commercial purpose.

Key Words : Cultural difference, Success factors, Mobile commerce

I . Introduction

The convergence of the Internet and wireless communication technology has promised customers anytime, anywhere access to the Internet. Therefore, mobile commerce, a form of “business to consumer”(B2C) e-commerce has grown substantially. While the term e-commerce refers to all online transactions, B2C applies to any

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business that sells its products or services to consumers over the Internet for his or her own use. A tremendous amount of increase in mobile access around the globe has been the main drive force for the growth of mobile shopping

Although the advancing information infrastructure makes the connectivity possible to reach almost anywhere in the world, it does not necessarily ensure a successful development of e-commerce. Many constraints are existed in information technology devices. The challenge will not come only from the technology, but also from the people who conduct business via Internet and the cultural environment in which the businesses operate. Thus, another important factor deterring the diffusion of mobile commerce could be the differences in each cultural background. Hofstede (1993) stated that people with one cultural background could react differently to the people with another cultural background for the same stimulus.

The purpose of the research is to examine the effects of cultural differences on the perception for shopping using mobile devices. Mobile device users from two markedly different countries in their cultural background - the U.S. and S. Korea - are chosen, and the perception for mobile shoppers of the U.S. users is contrasted with those of Korean users. Based on the researches on the characteristics on mobile shoppers, a conceptual framework of mobile users' satisfaction was developed to investigate the perception of mobile shoppers. With the usage factors previously identified, such as Cost, Security and Privacy, Ease of Use, Support, the theory of reasoned action (TRA) is applied to measure the user's satisfaction on mobile commerce. The authors conduct an exploratory study on users' perception on mobile commerce. The data collection from the study is conducted in the U.S. and S. Korea.

II. The Success Factors of Mobile Commerce Adoption

The concept of mobile commerce is to deliver business content and services to wireless handheld devices. Using the Web browsers embedded in, the mobile device enables mobile shoppers to perform many time-critical tasks such as checking

merchandise's price. Even though mobile services have many benefits, many success factors and constraints need to be considered for mobile commerce adoption. From the late 1990s, literatures have identified the success factors and constraints to the adoption of mobile commerce. As followed literature review will show, different studies have done for the success factors and constraints to mobile commerce adoption.

Vrechopoulos et al. (2002) proposed six critical success factors for accelerating mobile commerce diffusion in Europe; *Ease of Use, Security, Support, Price and Comfort of the Device*. It is often suggested that the main factors affecting mobile commerce adoption decisions are associated with ease of use and security features. According to this, consumers will be driven towards mobile commerce by the fact that what was previously simply a phone will now turn into a personal trusted device, through which all kinds of commercial activities and transactions can be managed. Of these factors, the *security* is perhaps the most widely cited too. Many authors also contended that lacking privacy and security could be a major constraint to the growth of mobile commerce (Li, 2002; Langendoerfer, 2002). Such contentions are also supported by empirical evidence.

Findings from a Finland-based survey by Ankar et al. (2003) suggest *Operating and Initial Cost, Data Transfer, Privacy, and Usefulness of Service* will be the most critical factors for consumers to use mobile Internet applications. Harris et al. (2005) found that significant factors of the mobile commerce in Hong Kong are the *Frequency, Usefulness, Satisfaction, and Cost*. Langendoerfer (2002) posits that technological issues such as the lack of infrastructure and mobile device will not be the major problem of mobile commerce, but that psychological aspects – especially privacy concerns – will be the reason why mobile commerce will not take off. Shuster (2001) speculates that pricing certainly will have an impact on adoption.

III. Conceptual Framework

User satisfaction defined as the extent to which users believe the information system

available to them meets their information requirements. User satisfaction is considered one of the most important measures of information systems success (DeLone and McLean, 1992; Ives and Olson, 1984). Employing user satisfaction in the evaluation of Information Systems effectiveness is certainly well established in many literatures.

Social psychologists attempt to understand the link between attitudes and behavior by focusing on the relationship between cognitions about the behavior and the creation of attitudes and /or intentions toward behavior. One of the popular approaches is the “theory of reasoned action (Ajzen and Fishbein, 1980). According to the theory, a person’s behavior can be predicted from the person’s attitude toward the behavioral action. Although this theory was not explicitly discussed in information system context, such thought can represent the IS user’s attitudes as a multi-attributes belief structure.

According to TRA, a person’s performance of a specified behavior is determined by his or her behavioral intention (BI) to perform the behavior, and BI is jointly determined by the person’s attitude (A) and subjective norm (SN) concerning the behavior in question (Figure 1).

$$BI = A + SN$$

BI is a measure of the strength of one’s intention to perform a specified behavior. A is defined as an individual’s positive or negative feelings about performing the target behavior (Fishbein and Ajzen, 1975). Subjective norm refers to “the person’s perception that most people who are important to him think he should or should not perform the behavior in question. Based on the model suggested by the studies, a conceptual framework of mobile commerce user satisfaction was developed to investigate Korean and the U.S. mobile users. Figure 2 illustrates the relationships between the mobile user’s satisfaction and satisfaction variables found.

In using the mobile technology, it is important to know what factors the mobile devices can offer to the users. Some of the critical factors for the mobile technology were identified by investigating researches. The variables used in this model which influence the user’s attitude or perceived value are: Cost, Ease of Use, Security and Privacy, and Support.

Attitude is defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly & Shicken, 1993). Attitude in this model included mobile device user’s attitude. Subjective norm refers to “the person’s perception that most people who are important to him think he should or should not perform the behavior in question” (Ajzen and Fishbein, 1975).

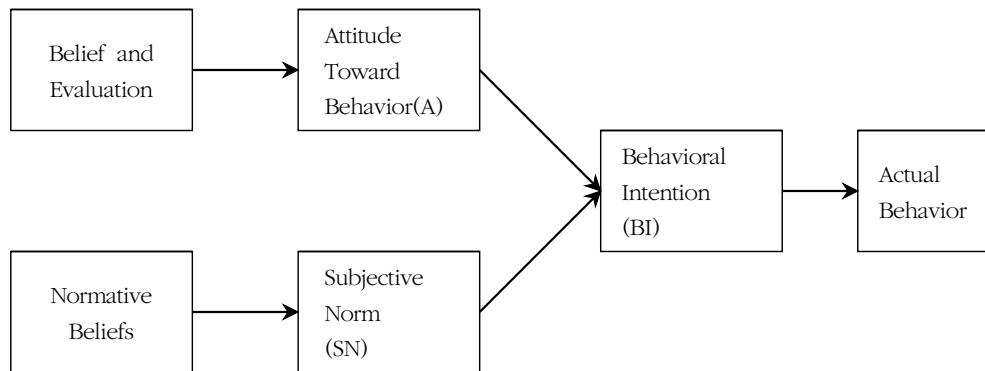


Figure 1. Theory of Reasoned Action

Subjective norm which considered for this model was distinguished for the mobile users in two different cultural backgrounds. Behavioral intention or Motivation is a measure of the strength of one’s intention to perform a specified behavior. For this model, Motivation is jointly determined by the person’s attitude.

Culture is a shared system of meanings that dictates what we pay attention to, how we act and what we value (Trompenaars and Hampden-Turner, 1998). National culture is collective programming of the mind that distinguishes one nation from another (Hofstede, 1998). In order to develop an appropriate cultural study model of user satisfaction for mobile commerce activity, Hofstede’s model of national culture is used for applying the difference of subjective norm for mobile users in different cultures.

The five dimensions from Hofstede (1980, 1991) is the most commonly used model in the field of international management and international marketing (Shackleton and Ali, 1990; Barkema and Vermeulen, 1997; Schuler and Rogovsky, 1998). Cultural dimensions are defined as follows.

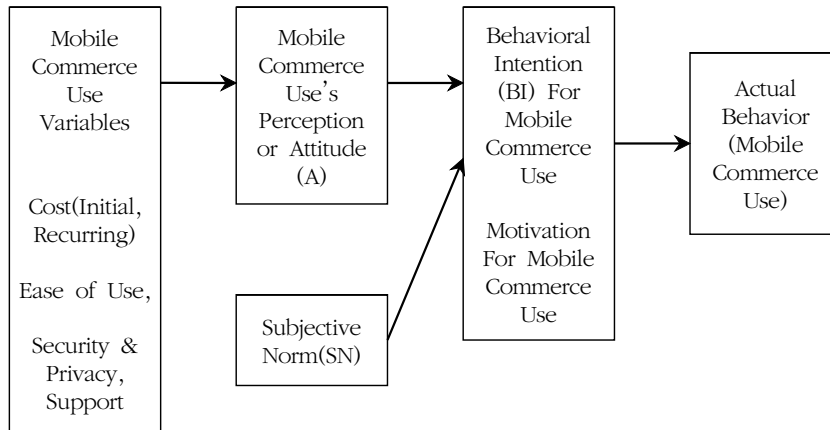


Figure 2. The Model of the Mobile Commerce User' s Satisfaction

- 1) Power distance : Power distance refers to the centralization of authority within the organization. Large power distance means that members on the organization accept the inaccessibility of their superiors. Small power distance means that members expect their leaders to be similar to themselves. Thus, the member of high power distance society would likely to follow the behavior of their superior
- 2) Individualism/collectivism : Individualism refers to emotional independence from organizations and groups, while collectivism refers to a tight social framework. Individualist is prefer to act and work alone, while collectivists prefer to act and work as members of a group.
- 3) Masculinity/femininity : Masculinity refers to the extend that “tough” values, such as competition and assertiveness, prevail over “tender” values, such as nurturing and quality of life. In feminine societies both men and women have strong nurturing values. In masculine societies, men are even more assertive, so that gender roles differ to a greater extent.
- 4) Uncertainty avoidance : Uncertainty avoidance refers to the degree that people are uncomfortable with ambiguity. People in high uncertainty avoiding societies are more nervous when faced with unstructured situations. They like to adhere to strict rules, safety and security measures and a belief in the absolute truth.
- 5) Long-term orientation : Long-term orientation refers to a set of ethical values for daily life. Long-term orientation represents the values of persistence, perseverance,

status and thrift, saving for the future and having a sense of shame. In contrarily, short-term orientation values personal steadiness and stability, protecting your image, respect for tradition, concern for the past and present, good manners and the trading of gifts, greetings and favors.

IV. Research Methodology

In order to reach a proper subset of mobile commerce users, a hundred users are randomly selected in the U.S. and S. Korea for this study. To determine the extent to which mobile commerce is being practiced, the authors developed a questionnaire. The ten items were designed to find out the perceptions in mobile use. A five-point Likert scale was employed with “Strongly disagree” on one extreme and “Strongly agree” on the other.

Based on the questionnaire explained above, three groups of research variables were identified.

1. Ease of Use

The quality of mobile services is not like the traditional PC-enabled Internet service yet. Inconvenience can be caused by small screens for content display, and slow data input. Since data networks operate from the best effort service different from the guided media network, Ease of use has been in the center of the issue.

The user’s perception on the ease of use was measured on a five-point scale ranging from “Strongly disagree” to “Strongly agree.” The statement, “I did not realize any use problem in using mobile system,” was used to test the user’s perception.

2. Cost

As discussed, there are serious amount of set-up and recurring cost involved when a mobile user want to maintain the mobile system. The statement, “The initial set-up and

recurring cost for Mobile system is too much to sacrifice.” and reverse statements were used to test the user’s perception.

3. Security and Privacy

Despite of its mobility, mobile commerce is considered very weak for security breach. The statement, “The possibility of security breach and privacy problem in using mobile system is high” was used to test the user’s perception.

4. Support

Technical support for using mobile equipment in proper way is chosen for another critical success factor. The statement, “Technical support for the problem in using mobile system was very helpful” was used to test the user’s perception.

V. Expected Findings

Mobile technology has many benefits as well as disadvantages for daily use. However, the trends of the industry and the impacts on the customers of mobile commerce can not be ignored. The big numbers on mobile devices use shows that the statement is based strong evidences. Therefore, it is possible that one day all the e-commerce activity will be changed to mobile-based practices. The benefit of making the move is attractive but you need to consider the risk. The providers and equipment manufactures have to provide more strong solution for the quality and the security problems to expand the use of mobile devices.

The future success of mobile commerce will depend on recognizing the multiplicity of mobile devices user behaviors, as well as identifying methods of satisfying the consumer’s needs in the mobile device using environment. The results of the study are expected to show how some of the verified variables would affect the user perception in mobile device use for commercial purpose. Therefore, the findings of this study can

provide useful insights for both the academic and practitioner community. For the IS research community, this study may suggest several opportunities for further research into the variables which impact mobile commerce user satisfaction. For practitioners, this study can help mobile shopping firms to develop better marketing platforms and strategies, which promote more mobile practice for the on-line buyers with different cultural backgrounds.

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■ 요약

모바일상거래에 사용되는 기기들을 이용하는 데 있어서는 몇 가지 제한 요인이 존재한다. 그 중 중요한 요인 중의 하나로 기기사용자들의 문화적 차이를 들 수 있다. 문화적 차이에 의한 모바일쇼핑에 대한 인지도차이를 살펴보기 위해 문화적으로 전혀 다른 두 개의 국가를 대상으로 본 연구가 진행되었다. 본 연구의 결과로써 상업적인 목적에 이용되는 모바일기기들에 대한 사용자들의 인지도에 영향을 주는 요인들을 규명할 수 있을 것으로 기대된다.

핵심주제어 : 문화적 차이, 성공요인들, 모바일상거래

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