

Mobile Manufacturer or Service provider? An Empirical Study on Consumers' Adoption Intention

Feng Hu¹ Xiaoyi Du² Yong Liu³

1. Zhejiang Normal University, Jinhua, China

2. Zhejiang Normal University, Jinhua, China

3. IAMSR, TUCS, Åbo Akademi University, Turku, Finland

1. zjh2006@126.com, 2. duxy@zjnu.cn, Yong.liu@abo.fi

Abstract

As mobile manufacturers today seek to attract consumers by increasingly integrating mobile services into their products, little research is available regarding whether and to what degree this new feature of mobile phone would motivate consumers' purchase intention. Concerning m-learning, this study investigates the relationship among users' intentions to adopt mobile service, service-enabled-phone as well as intention to pay for the new phone functionality. Based on 209 useful responses, this study suggests that users' intention to adopt m-learning would impact their intention to acquire facilitating conditions (specific m-learning enabled mobile phones). Theoretical and practical implications are discussed in the present paper as well.

Keywords: Mobile services; mobile phone; m-learning; adoption intention.

1. Introduction

In recent years, more and more mobile manufacturers integrate new mobile services into their handheld devices. This appears to be a market strategy increasingly adopted by mobile manufacturers to acquire market share and to generate new revenue. Taking Nokia for example, it has been back in retail services and launched its own online platform in order to compete with iTunes in 2007. The platform offered is termed as 'Ovi', a word meaning 'door' in Finnish. In this platform, a large amount of fantastic music and mobile games are provided to Nokia phone users. Google is also interested to integrate its service to handheld devices, such as in T-Mobile. Similarly, mobile manufacturers in China play a central role in offering m-learning products and services with an expectation to attract consumers' purchase of m-learning enabled phones. Currently, there are a number of online m-learning platforms with a wide range of m-learning services are offered to phone users. As technology-mediated education, such as e-learning, is mostly initiated by educational institutions, it is of practical significance to investigate consumers' responses to the m-learning service offered by mobile manufacturers.

As mobile manufacturers in general hold an expectation that consumers' intention to adopt a mobile service would impact their intention to acquire facilitating conditions, such as a new phone with required functionalities, this paper serves as a

first important step to investigate the consumers' responses to this market strategy. The paper is structured as follows: after introducing the theoretical background in the next section, research methodology and results are presented in section 3. Finally, conclusions and implications of the paper are discussed in section 4.

2.Theoretical Background

Current adoption research relating to mobile industry is mostly targeted on mobile services or physical mobile phone respectively. There is limited research offering insights on the relationship between the adoption of mobile phone and mobile services. A number of studies potentially viewed the possession of a mobile phone as a kind of facilitating condition to adopt a particular mobile service. Based on eight previous adoption models, Venkatesh et al. proposed the Unified Theory of Acceptance and Use of Technology (UTAUT), and defined facilitating condition as the availability of resources needed to engage in a behavior [1]. For instance, a consumer's ownership of a mobile phone enables the access to mobile services. It is well understood that behavior can not occur if objective conditions in the environment prevent it [2]. Lu et al. found that facilitating condition is a significant variable impacting perceived usefulness, which in turn influences consumers' intention to accept wireless mobile data services [3]. Regarding ICT adoption in the government organization, facilitating conditions were found to positively impact the use of the ICT [4]. In addition, facilitating conditions were found to significantly influence the use of health information technology [5].

Nonetheless, little research has been found to investigate a reversed impact. In other words, there is little understanding regarding whether consumers' willingness to use a mobile service would motivate them to adopt the facilitating conditions required, such as a new mobile phone. It is self-evident that people today no longer accept mobile phone merely for making and receiving calls. Instead, consumers intend to acquire advanced mobile phone with respect to a number of new functionalities, such as MMS, GPS and wireless connection. Consumers' preference of advanced mobile phone indicates that there might be a relationship from mobile service adoption to the adoption of corresponding mobile phone which enables the new mobile service. In addition, as mobile manufacturers add new value to their products by integrating new functionalities, it is important that consumers in general would perceive the value delivered and therefore would like to pay for the new phone functionality. In this light, we proposed following hypotheses:

H1: Users' m-learning intention is positively related to the (m-learning enabled) phone purchase intention.

H2: Users' m-learning intention is positively related to payment intention of the m-learning functionality.

H3: Users' (m-learning enabled) phone purchase intention is positively related to the payment intention of m-learning functionality.

Table 1. Definitions of variables

Variables	Definitions
M-learning intention (MLI)	Consumers' behavioral intention to adopt m-learning.
Phone purchase Intention (PPI)	Consumers' behavioral intention to purchase m-learning enabled phones.
Payment intention (PI)	Consumers' behavioral intention to pay for m-learning service or functionality offered by mobile manufacturers.

3. Research Methodology

To assess our research model, a survey was carried out in Zhejiang Normal University in China in November 2008. A total of 220 responses were collected from 230 undergraduate students giving a response rate of 95.7%. However 11 questionnaires were discarded as they were partially incomplete. More females (144) than males (65) took part in the survey. These respondents range from 18 to 23 years old. The questionnaire utilized a seven-point Likert-scale ranging from strongly disagree (1) to strongly agree (7) to measure each item. The scales for variable measurement were adapted from the instrument developed by Davis' [6].

Partial least square path modeling (SmartPLS 2.0) was used to evaluate the predictive research model. All the factor loadings are found to above threshold of 0.6 as shown in Table 2. The values of composite reliability (CR) and Cronbach's alpha (α) of all the constructs are greater than 0.7, indicating good reliability of the structures. The values of average extracted variance (AVE) satisfy the cutoff value 0.5 (Fornell and Larcker, 1981). In addition, the shared variances among the constructs are less than the square roots of AVE [7], as shown in Table 3. These values indicate that the convergent and discriminant validity of constructs are supported.

Table 2. Results of convergent validity and reliability test

	Factor loading	T Statistics	α	CR	AVE
MLI1	0.9384	86.5259	0.8676	0.9379	0.8830
MLI2	0.9410	97.5852			
PPI1	0.9005	46.5348	0.9467	0.9617	0.8625
PPI2	0.9306	73.5123			
PPI3	0.9546	114.8402			
PPI4	0.9285	71.2163			
PI1	0.7971	13.8936	0.8323	0.8872	0.6645
PI2	0.8424	26.9103			
PI3	0.7114	13.4114			
PI4	0.8982	64.3354			

Table 3. Correlation Matrix and Discriminant Assessment¹

Variables	Mean	SD	MLI	PPI	PI
MLI	4.80	1.37	0.939		
PPI	4.73	1.32	0.811	0.928	
PI	4.30	1.21	0.606	0.627	0.815

The findings provide significant support of all hypotheses. M-learning intention significantly influences both phone purchase intention ($\beta=0.81$, t-value=29.27) and payment intention ($\beta=0.28$, t-value=2.97). Phone purchase intention positively relates to payment intention ($\beta=0.39$, t-value=3.95). Furthermore, m-learning intention accounts for 65.8 percent of variance of phone purchase intention, which together explain 42.1 percent of variance of payment intention.

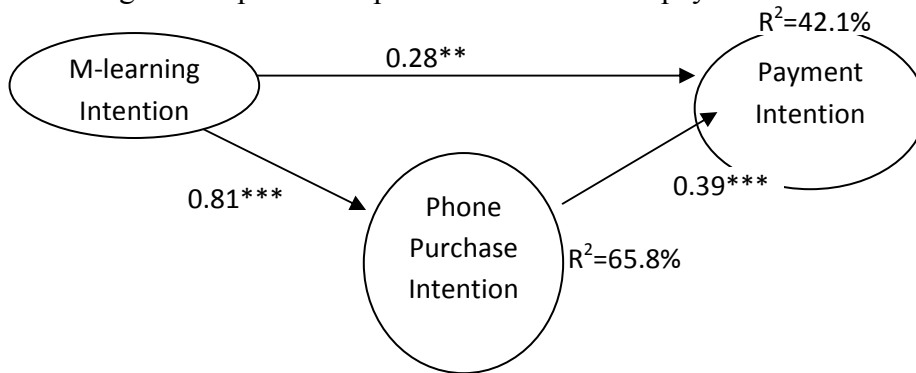


Fig 1. Results of PLS path modeling analyses

4. Conclusion and Implications

Our results provide evidences that a provision of mobile service would help mobile manufacturers to attract consumers to purchase mobile phone and to pay for the new functionality accordingly. In theory, this study provides evidences that there is a reversed relationship from service adoption intention to facilitating condition. In other words, a user's intention to adopt a mobile service would motivate them to adopt corresponding facilitating conditions, such as a proper mobile phone, even when the mobile service is offered by mobile manufacturers. Also this would increase consumers' evaluation of the whole value of mobile phone.

Further, even if consumers in general prefer new services for free, this study suggests that m-learning is a service that would lead to a new resource of revenue for mobile manufacturers, as the intention to adopt m-learning significantly motivate the intention to pay for the new m-learning functionality. Also the results indicate that it should be a feasible method to prosper m-learning by encouraging mobile manufacturers to offer m-learning products and services.

As this research only assesses the influence of m-learning on the mobile phone purchase, future research would take impacts of other mobile services, such as mobile music and mobile games, into consideration.

¹ The bold items on the diagonal represent the square roots of the AVE, off-diagonal elements are the correlation estimates.

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