

Mobile User Behaviors in China

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INTRODUCTION

In order to better understand the meaning of mobile user behavior, it is necessary to define some key concepts above this title at the beginning of this article.

Firstly, the mobile phones we mentioned here including almost every kinds of mobile phones that existing in current Chinese mobile phone market. The market is now dominated by smart phones and function phones according to the data collected by Analysys International and Ministry of Industry and Information Technology of the People's Republic of China (2013). Consequently, we included those articles related to regular phones mentioned above but excluded those related to conceptual phones that has not popularized such as Tab-phones.

Secondly, the research of mobile user behaviors is to organize and analyze data collected from mobile phone users when they use services provided by mobile phones, and then acquire the need of customers or reduce the unnecessary consumption of mobile system (Hu et al., 2013). The analysis work contains what kind of applications mobile phone subscribers prefer to and what factors may affect the usage of mobile phones.

Finally, we intend to focus on those articles that attempted to explain the mobile user behaviors in developing but representative countries or areas that have a great potential for mobile industry, consequently, China in the title means the mainland of China.

Since the study of mobile phone user behaviors in China is a new research area, we examined the researches and journals carefully and found that Dr. Mowei Shen (Shen et al., 2006; Qiao et al., 2007) at Zhejiang University and Dr. Yonggui Wang (Wang & Lo, 2002) at City University of Hong Kong are among the leading experts in this area.

OVERVIEW

According to the literature we reviewed, we discovered that the first paper that concerned about the relationship between mobile users and mobile phones in China may be the one entitled "Psychology development of college students' phone addiction" by Han and Qi (2005).

In this paper, Han firstly defined the mobile phone dependence or addition as mental disorder and uncomfortable feelings caused by exceeding use of mobile phones. Five main behaviors that

caused by mobile addiction were summarized in his study. Then, Han attempted to explain the psychological causes of mobile phone addiction and how it affects college students' lives. By giving the psychological need of mobile phones, they illustrated the disadvantages of mobile phone addiction.

The later studies extended Han's contributions to a wide scope, not only in the field of mobile addiction but also the field of mobile regular use behaviors and mobile user behavior analysis.

Chen & Tang (2006) initiatively introduced the Unified Theory of Acceptance and Use of Technology (UTAUT) model to the field of mobile payment acceptance and usage and examined the key factors of mobile payment user behaviors. Moreover, they concluded that the social influence positively correlated to the use of mobile payment. Thereafter, many scholars applied those models to some other fields such as mobile commerce and mobile banking (Ren, 2007; Zeng, 2009; Zhou et al., 2010).

On the other hand, the developing of data mining makes large-scale data analysis possible. Based on this, Lü et al. (2005) applied K-means classification method to mobile user behavior analysis and pointed out the limitations of K-means method. Liu & Chen (2006) applied data mining to mobile consumer behavior analysis. Specifically, Gong et al. (2012) applied association rules to mobile Internet and concluded that connection degree could significantly predict user preferences and behaviors.

CURRENT SCIENTIFIC KNOWLEDGE IN MOBILE USER BEHAVIORS

The current study of mobile user behaviors mainly consists of 3 directions, which are mobile phone use, effects of mobile phone use and mobile phone user behavior analysis.

In the area of mobile phone use, scholars mainly attempt to determine mobile phone use for different influencing factors and different target

people. Yong Shen and his mentor Mowei Shen significantly promoted the development of this area. In the doctoral dissertation of Shen (2009), he systematically divided the psychological factors that influence user behaviors into four parts: user need, user experience, behavior control, social network. He attempted to describe how those factors work during the mobile phone use respectively. Then, he divided user behaviors into 5 categories: Internet use, entertainment use, express tool use, communication use and personal management use. Finally, correlations were examined between influencing factors and user behaviors. Shen et al. (2009) also checked the relationship between use intention and instant messaging use or preferences among college students.

In the area of effects of mobile phone use, the predominant researches lie in mobile addiction. Xiaoyun Wang and Anchun Wu promoted the researches in early years by putting forward several detailed researches. Wang & Wu (2012) discussed the causes of mobile addiction in perspective of objective factors and subjective factors, and then proposed some possible solutions. Afterwards, Wang & Wu (2014) verified the relationship between mobile addiction and the personality trait of sensation seeking through two corresponding questionnaires.

The current mobile user behavior analysis mainly conducted by some mentors and master students in Beijing University of Posts and Telecommunications. Here we briefly introduce some empirical studies conducted by them. Zheng (2010) developed an analysis system for mobile Internet users. Based on the system, the paper build related experimental environment and get the experimental results. Li (2012) proposed a samples reduction and density equalization algorithm based on KNN (K-Nearest Neighbor) method and analyze the mobile Internet user behaviors through three dimensions, including access time when users visit the Internet, the network flow, the preferences and habits of users. Sun (2012) established a data collection system to acquire the behavior information of mobile

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