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How to satisfy citizens? Using mobile government to reengineer fair government processes

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ABSTRACT

This paper examines how mobile and wireless technology (MWT) characteristics affect user satisfaction in the mGovernment field to which mGovernment literature thus far has paid little attention. Specifically, we identify seven MWT functions of mGovernment and explore the underlying process through which the seven MWT functions affect user satisfaction. By integrating the task-technology fit perspective and theory of procedural fairness, we develop a research model to demonstrate that the seven MWT functions of mGovernment reshape three characteristics of fair decision procedures and increase the procedural fairness of governmental services, which, in turn, improve user satisfaction. A total of 449 experienced users in China responded to a survey. The results indicate that 1) two time-critical functions of mGovernment improve transparency, 2) a location-sensitive function and a mobile multimedia function promote information accuracy and 3) three personal control functions increase voice opportunity. Further, the three fair procedural characteristics (i.e., transparency, information accuracy and voice) increase procedural fairness of governmental services, which, in turn, increases user satisfaction. This study results in a theoretical contribution to e/mGovernment and mobile service literature by explaining "which" and "how" MWT functions affect user satisfaction. Moreover, it applies and complements theory of procedural fairness in the context of mGovernment. This study also suggests guidelines for government agencies and system developers on selecting a suitable portfolio of MWT functions to fit government's various task needs and to improve user satisfaction.

1. Introduction

The ubiquity and rapid development of mobile and wireless technology (MWT),[1] such as mobile phones, Wi-Fi, and 4G, has created potential opportunities for improving mobile government (mGovernment), which refers to government's use of MWT to deliver its services. Although mGovernment is a subsection of electronic government (eGovernment), it is possible that mGovernment services will become more popular than eGovernment services [3,8,48,54]. Statistics indicate that the usage of M-internet (mobile internet) has overtaken that of PC-internet (Personal computer internet) [48], which offers mGovernment a bigger user base than does eGovernment. Moreover, the mobility of mGovernment facilitates citizen access to ubiquitous services, which eGovernment cannot provide [33]. With mobile penetration rates exceeding 100% in more than 30 countries, it is imperative for governments to re-evaluate the advantages of using M-internet.

Governments are vigorously developing mGovernment services. Both First-time adoption and continued post-adoption usage of these services are pivotal to mGovernment success [2]. However, extant mGovernment literature focuses more on first-time adoption issues rather than on continued post-adoption usage issues [25,27,36,48,50]. To fill this gap, this study focuses on user satisfaction with mGovernment services, which is a critical predictor of post-adoption usage of mGovernment services [10].

An increasing number of studies discuss user satisfaction with eGovernment [2,13,18,40,57]. However, the results cannot be transferred to mGovernment, as mGovernment has unique features [59]. These studies identify various social issues (e.g., information quality, trust, perceived risk and social value) as antecedents of user satisfaction toward eGovernment [2,13,18,40,57], but ignore the effects of technological functions (e.g., user interface design) on user satisfaction [59]. In mobile service literature, several studies adopt the "utilitarian value" perspective to identify various economic values of mobile services as predictors of user satisfaction, but they rarely pay attention to the effects of functional values, therefore deviating a little from the perspective of the IS discipline [6]. To fill this gap, this study explores "how MWT characteristics of mGovernment affect user satisfaction."

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[1] MWT is an abbreviation for mobile and wireless technology.

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An important objective of mGovernment application in many countries (e.g., China) is using MWT to reengineer the processes of governmental services (also called "administrative reform" or "*xing zheng ti zhi gai ge*" in Chinese) in order to improve citizen satisfaction toward governments [37]. Specifically speaking, the "rule of man" in traditional processes of governmental services gives rise to kickbacks, corruption, unfair decisions and resource distribution, thus incurring citizen dissatisfaction [8,9]. Information services of mGovernment are expected to facilitate information flow between government agencies and citizens. This is critical for creating a fair and transparent decision procedure [8,9,37]. It is the procedural fairness of government decision making that is expected to improve user satisfaction. Although mGovernment services include information and transaction, this study focuses on the former, as mGovernment in many countries- especially in developing countries (e.g., China) — is still at the embryonic stage, mainly providing information services [48,54,59].

Some IS researchers propose that the use of ICTs in public administration benefits fairness of government decisions and services [8,9], while others imply that the user fairness perception may improve satisfaction with IS [14,15]. However, none of the above studies has empirically examined how technical functions improve user satisfaction through reengineering fair decision procedures. This paper thus investigates two research questions: 1) What are the MWT functions of mGovernment? 2) From the perspective of reshaping procedural fairness, what is the mediating process through which the MWT functions improve user satisfaction with mGovernment?

In order to address these research questions, we borrow the tenets of the task-technology fit (TTF) and theory of procedural fairness (TPF) to propose that the MWT functions of mGovernment promote the formation of the fair procedural characteristics of mGovernment services, which, in turn, improve procedural fairness of governmental services and user satisfaction toward mGovernment. First, TTF suggests that technology features of an IS system should match with the characteristics of the tasks that the IS system supports [22]. In the mGovernment context, an important task of MWT is to shape fair procedures of governmental services. Thus, MWT functions (technological characteristics) are expected to improve the formation of the characteristics of fair governmental procedures (task characteristics). We adapted a traditional classification of mobile functions [4,61] to identify seven MWT functions of mGovernment, and adopted TPF [34,47] to identify three procedural characteristics of mGovernment services (i.e., transparency, information accuracy and voice opportunity). Based on the tenet of TTF, we tested whether the seven MWT functions improve the three fair procedural characteristics. Second, based on the tenet of TPF, which claims that several characteristics of fair procedures affect procedural fairness and individual attitudes, we hypothesized that the three procedural characteristics improve both the procedural fairness and user satisfaction of mGovernment.

This research contributes to literature in three major ways. First, prior mGovernment research focuses mainly on first-adoption, rather than on post-adoption, issues. To fill this gap, this study focuses on user satisfaction, a typical post-adoption issue. Second, prior eGovernment or mobile services literature primarily identifies behavioral, rather than technical, issues as antecedents of user satisfaction. This study fills this gap and identifies MWT technical factors as antecedents of user satisfaction toward mGovernment, thus broadening the scope of antecedents that predict user satisfaction toward eGovernment and mobile services. Third, this pioneering study applies TPF and sheds light on the underlying processes through which MWT artifacts affect outcomes from the perspective of procedural fairness in the mGovernment context. Finally, we identify seven MWT functions as predictors of three procedural characteristics to complement TPF. In addition, our results will enlighten government agencies and system developers in designing mGovernment services that satisfy users.

The remainder of this study is organized as follows. Section 2 is a comprehensive literature review and theoretical background. Section 3 presents the research model and hypotheses. Section 4 describes the research method and Section 5 reports data analysis and findings. Theoretical and practical implications are discussed in Section 6 and Section 7 concludes the study.

2. Literature review and theoretical background

2.1. TTF perspective

TTF refers to the congruence between IT functionalities and the requirements of tasks that IT supports [22]. The TTF perspective can be broadly applied to any situation in which technology is used to accomplish specific tasks [39]. For instance, Maruping and Agarwal [39] adopted the TTF perspective to explore how various IT functionalities (e.g., immediacy of feedback) match the characteristics of different team tasks (e.g., conflict management) in virtual teams. Zigurs and Buckland [63] developed propositions that link the fit between IT functions and task characteristics in the context of group decision systems. Given our emphasis on mGovernment, we adopt the TTF perspective to develop hypotheses that link the fit between MWT functions and task characteristics of mGovernment.

How does technology fit a task in the mGovernment context? A task of MWT is to assist government officials in reengineering fair procedures of services in the mGovernment context [37]. The task of reengineering fair procedures is characterized by specific characteristics, such as increasing transparency [34,47]. As these task characteristics vary in their nature, MWT functions differ in the extent to which they are able to support these characteristics. For instance, transparency might be improved by MWT functions that enable real-time information exchange. This suggests that specific MWT functions are expected to improve different procedural characteristics in the mGovernment context.

However, the TTF perspective does not specify technical and task characteristics in mGovernment. In addition to identifying MWT functions based on the literature review, this study draws on TPF to identify the characteristics of reengineering fair procedures. According to the TTF perspective and TPF, we test the effects of seven MWT functions on three specific procedural characteristics.

2.2. mGovernment services

Despite the rapid growth of mGovernment becoming more popular than eGovernment, extant literature focuses less on mGovernment than on eGovernment [3,8,36,54,57,59]. Among the few mGovernment studies, researchers focus mainly on the determinants of initial adoption or usage of mGovernment [27,36,50]. For instance, Hung, Chang and Kuo [27] identified perceived usefulness, ease of use, trust, interactivity, attitude, subjective norm and perceived behavior control as antecedents of first-time adoption of mGovernment. Liu and colleagues [36] found that ease of use, long-term usefulness and social influence improves the intention to use mGovernment services. However, understanding continued post-adoption usage of mGovernment is more important than initial-adoption for mGovernment service providers because the cost of acquiring a new user is several times more than that of retaining an existing user in the mobile service industry [16]. In spite of the importance of user continued post-adoption usage research, the determinants of post-adoption usage has received little attention in the mGovernment field. This study fills this gap and focuses on user satisfaction toward mGovernment because user satisfaction is the most important determinant of user continued post-adoption usage of mGovernment [10].

In eGovernment literature, several studies [2,13,18,40,57] have explored the predictors of user satisfaction; for instance, Alawneh and colleagues [2] proposed that security, privacy, trust, accessibility and service quality may affect satisfaction toward eGovernment. Welch, Hinnant and Moon [57] found that transaction, transparency and interactivity directly affect satisfaction toward eGovernment. Carter and Belanger [13] report that relative advantage, image and compatibility