M-Commerce Security:

Assessing the Value of Mobile Applications Used in Controlling Internet Security Cameras at Home and Office – An Empirical Study

Ahmed Elmorshidy, Gulf University for Science and Technology, Kuwait

https://orcid.org/0000-0002-2078-555X

ABSTRACT

This paper aims to evaluate the factors affecting mobile applications used to access and control security cameras at home and office. Survey data from 397 mobile applications users in Southern California, USA were collected to test the proposed research model and hypotheses through structural equation modeling. This study finds that system quality, information quality, and service quality of mobile applications have a positive effect on the perceived usefulness and perceived ease of use of these applications and introduce several net benefit represented in increased control of users' security, increased convenience and flexibility and privacy when using those mobile applications for access their security cameras at both home and office. There is a lack of researches in this area which makes this study among the first to attempts to fill this gap by empirically investigating the factors affecting mobile applications of home and office security cameras as well as the benefits they introduce to uses.

KEYWORDS

E-Commerce Security, Information Systems Evaluation, Information Systems Privacy, Information Systems Security, M-Commerce Security, Mobile Applications

1. INTRODUCTION

There is a growing trend in using security cameras at both homes and offices. Several mobile applications are designed to access and control security cameras remotely. Features include live viewing, motion detection, video alerts, night vision, cloud storage and many more. However these benefits introduced to the user of those mobile applications have not yet validated by empirical studies. Also factors affecting the use of these mobile applications are not clear in research. This paper is among the first to try to fill this research gap by empirically examining the factors affecting the use of mobile applications for security cameras at home an office. Furthermore, this paper investigates the expected benefits associated with utilizing these mobile application used to access and control security cameras at home and office. The paper is concerned with answering the two following research questions:

1. What are the factors that affect mobile applications used to access remote security cameras at home and office?

2. What are the benefits associated with using mobile applications used to access remote security cameras at home or office?

The study used both the technology acceptance model (TAM) (Davis, 1989) and the information systems (IS) success model (DeLone and McLean, 2003) as theoretical frameworks and to build the study research model. Survey data from 397 mobile applications users from Orange County and San Bernardino County in Southern California, USA were collected to test the proposed research model and hypotheses through structural equation modeling.

The results and findings of this research should have important implications at both the theoretical and practice level. At the theoretical level, it will fill out a research gap by empirically investigating the factors affecting the use of mobile applications for security cameras at home and office as well as examining the benefits associated with using these mobile applications. At the practice level, the findings of this study should provide helpful insights for designers and developers of mobile applications to focus on the features that users see most beneficial when accessing and controlling their home and office security cameras. Developers of mobile application can then redesign those applications to be more tailored and responsive to users' needs and requirements.

This paper starts by reviewing literature that leads to the development of the research hypotheses pertaining to the effect of information quality, system quality, and service quality of mobile applications and how they by their turn affect perceived ease of use, perceived usefulness, attitude, behavioral intention, and actual use of these applications. The paper then discusses the research methodology including the research model and sampling. The research results and finding are then provided and analyzed. The conclusion section at the end of the paper discusses theoretical contributions, implication for practice and the limitation of the study as well as recommendations for future research.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Information Quality

Information quality of a system is defined as the quality of the content of the information systems. The more useful is the content, the more quality is the information. Budiardjo et al (2017) empirically examined the influence of knowledge management system quality on users' continuance intention to use in three companies that had implemented a knowledge management system (KMS). The study demonstrated that both system quality and information/knowledge quality influence all the factors that drive the continuance intention regarding KMS usage, namely perceived usefulness, satisfaction, and trust. Wang and Chien-Liang (2012) empirically investigated the influences of perceived playfulness and information systems (IS) quality on mobile phone subscribers' intentions to use the service. The results confirmed that information quality, system quality, and service quality serve as important antecedents of perceived ease of use and usefulness among mobile phone subscribers. Sumida et al (2017) compared the preference of social media sites and institutional communication channels of higher education institutions by confronting elements that form perceived usefulness and user satisfaction with the system in Brazil. The study revealed that information quality has a positive effect on perceived usefulness and perceived ease of use. This discussion suggests the following hypotheses:

H1: Information quality of mobile applications of security cameras has a positive effect on perceived usefulness of these applications

H2: Information quality of mobile applications of security cameras has a positive effect on perceived ease use of these applications

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