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Impacts of Users' Extra-Role Behaviors on Bright Internet Policy Adoption

(Work in Progress)

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ABSTRACT

Cyberspace security has been one top issue for a society. The Bright Internet (BI) based on the five principles offers a viable solution. The adoption of BI is important to the implementation of BI. A majority of the previous studies have mainly focused on access-policy violations and compliance in the past decades, while the extra-role behaviors have obtained insufficient attentions. Based on the theories of social control and accountability, this study examines the impacts of extra-role behaviors on BI policy adoption. The research findings have implications for future research and practice.

Keywords: Bright internet policy adoption, Extra-role behaviors, Social control theory, Accountability theory

INTRODUCTION

Information security problem has always been one of the top concerns for a society. In order to solve this problem, a safer network system, the Bright Internet (BI) that is based on the five principles of origin responsibility, deliverer responsibility, identifiable anonymity, global collaborative search and privacy protection, was put forward by Lee (2015) . In addition to the technology aspect, the conceptual framework mainly consists of components of policy and global collaboration (Lee, 2016) . Therefore, in order to advance the implementation process of BI, it is imperative to improve the adoption of BI policy mentioned above.

As for the academic research on information security policy (ISP), the extant researches primarily focus on in-role behaviors, defined as a kind of behaviors specified in security policy lists (Lowry *et al.*, 2014) . Extra-role behaviors, referring to the security behaviors not specified in the policy lists and not dependent on the use of rewards or punishments to encourage conduct, have been scarcely researched recently (Hsu *et al.*, 2015) . However, organizational research shows that enhanced organizational outcomes can be achieved when employees help each other perform their duties well, rather than just performing their own duties myopically (Van *et al.*, 1994) . And at the same time, Hsu *et al.* found that both of the in-role and extra-role security behaviors could improve ISP adoption, which suggest that managers should encourage extra-role security behaviors to improve security and enhance employees' connections with their organizations (Hsu *et al.*, 2015) . These researches indicate the importance of extra-role behaviors for the development of the companies, especially in the context of information security management. In addition, previous study has found that the social control is the main driver of the extra-role behaviors (Hsu *et al.*, 2015) . On the other hand, perceived accountability has also been found to significantly decrease the intention to violate access-policy (Vance *et al.*, 2015) . Behavioral security researchers therefore need to consider the elements of perceived accountability when investigating the drivers of extra-role behavior.

Based on the analysis above, this study examines the impact of perceived accountability and social control on extra-role behaviors that may impact BI policy adoption. A scenario-based survey method is used to collect data and validate our research model. After data analysis using PLS, the research findings will be discussed with implications for future research and practice.

LITERATURE REVIEW

Social control theory (SCT), first proposed by Hirschi, is mainly used to research the extra-role behaviors. It identifies causes of social behaviors that conform to generally accepted social norms, which has been widely applied in the field of criminology research (Hirschi, 1950) . Hirschi classified the inhibitors of unwanted behaviors into four types: commitment, attachment, belief, and involvement (Hirschi, 1950) . Commitment in SCT refers to one's dedication to his/her role in society. Attachment refers to employees' associations with others around them. Belief refers to the extent to which individuals think that performing certain behaviors is ethically correct. Involvement refers to the time and effort one spends on conventional societal activities (Hsu *et al.*, 2015) . In the context of BI, we define the involvement as the extent to which users engage in the process of publicity and promotion of BI policy.

Accountability is a process in which a person has a potential obligation to explain his actions to another party, which has the right to evaluate his performance according to the observed behaviors (Chaiken & Maheswaran, 1994) . Accountability theory also proposes several mechanisms that increase accountability perceptions, including identifiability, expectation of evaluation, awareness of monitoring, and social presence (Vance *et al.*, 2013) . Identifiability is a person's "knowledge that his/her behaviors could be linked to him/her" and thus reveals his/her true identity (Williams *et al.*, 1981) . Expectation of evaluation is the belief that one's performance will be assessed by others according to some normative rules (Lerner & Tetlock, 1999) .

Monitoring is the process of watching or tracking a user's activities (Griffith, 1993) . Social presence is the awareness of other users in the system (Walther, 1992) .

As for the academic research on ISP, previous researches widely investigated the security related in-role behaviors based on deterrence theory, protection motivation theory and so on, concluding that managers should pay more attention to encourage employees to comply with the security related policies (Lowry *et al.*, 2014; Bovens, 2010) . Comparing to in-role behaviors, extra-role behaviors initiatively refer to the positive or prosocial behaviors in a collaborative working environment. Especially, Griffith (1993) emphasized the necessity of extra-role behaviors in the interdependent context, which has been scarcely researched in the environment of emerging new technology. Given for the limitation of existing literatures, we would like to investigate the impact of social control and perceived accountability on extra-role behaviors that may impact BI policy adoption.

RESEARCH MODEL

In our research context, BI has not been put into effect so far due to the higher adherence to the current internet system, difficult coordination among the global participants and so on. Therefore, uncertainty and interdependence are significant features of BI. Correspondingly, extra-role behaviors in our context could include preferring to conducting the highly uncertain tasks (i. e., initiative) and performing altruistic behaviors to aid others (i. e., helping).

We argue that social control could boost the extra-role behaviors from the perspective of commitment (Wiener, 1982; Scholl, 1981; Mowday *et al.*, 1979) , attachment (Dyne *et al.*, 1994) , internalized belief and involvement based on SCT (Irvin & Stansbury, 2004; Allen & Meyer, 1990) . According to the same logic, we expect that accountability related to organizational security is positively associated with extra-role security behaviors towards BI policy through identifiability, expectation of evaluation (Hochwarter *et al.*, 2007; Sedikides *et al.*, 2002; Lerner & Tetlock, 1999; Geen, 1991) , awareness of monitoring (Vance *et al.*, 2015; Bond & Titus, 1983) and social presence based on accountability theory (Robert *et al.*, 1991; Guerin, 1986; Bond & Titus, 1983) .

According to SCT and accountability theory, we argue that the relationship between involvement and expectation of evaluation could be interactive with each other (Hsu *et al.*, 2015) ; We also propose that the user's prosocial behaviors could be improved due to the increasing level of social presence, especially with the existence of his intimate relatives (Vance *et al.*, 2013; Walther, 1992) . Individuals who have strong beliefs are more likely to generate favorable attitudes toward extra-role behaviors, especially when being monitored, because they want to present their internalized belief by means of being observed by the others; Finally, when individuals sense that they are distinguishable within a group, their commitment to the organization would be increased because some scholars argue that commitment drives employees to perform altruistic behaviors by promoting their identification with the organization (Organ & Ryan, 1995; Wiener, 1982; Mowday *et al.*, 1979) , which could increase their extra-role behaviors towards BI policy.

In the process of BI policy adoption, the extra-role behavior of BI may be important. When employees perform initiative behaviors as well as help some employees who don't understand the content of BI policy, they may hold a positive attitude or perceive a higher level of behavioral control, which would probably increase the adoption of BI policy (Chang *et al.*, 2012; Ajzen, 2002) .

Based on the analysis, we propose that the two mechanisms, the social control and accountability, may impact extra-role behaviors positively, leading to a higher level of BI policy adoption. The research model is shown below.

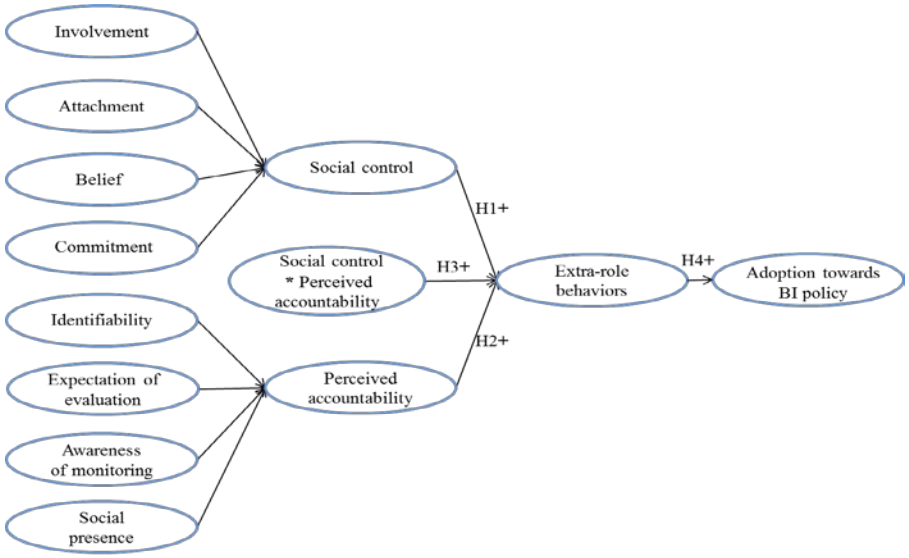

Fig. 1. Modified Research Model

METHODOLOGY

We would like to adopt the scenario method, which has more advantages than the traditional survey. As for the scenario instruments, it will involve pre-scenario items, an instructional scenario and post-scenario items, all of which will be adjusted from the existing instruments. In this study, we treat the social control as a second-order formative construct including four reflective constructs. Commitment was measured with three items adapted from Meyer and Herscovitch (2001) . Involvement was assessed with five items developed by Lee (2016) . Attachment was assessed with three items adapted from Chiu *et al.* (2006) . Belief was measured with three items adapted from Ajzen (2002) . Identifiability, expectation of evaluation, awareness of monitoring, and social presence, all of which are components of accountability, were measured by items adapted from Vance (Vance *et al.*, 2015; Vance *et al.*, 2013) . The measures for adoption towards BI policy were adapted from Woon and Kankanhalli (2007) . After refining the measurement scale, we will collect data through Questionnaire Star, which is a well-established questionnaire collection platform in China to validate our proposed model.

DISCUSSIONS

Theoretical Contribution

There may be two main contributions of the current research. First, this study examines the effect of perceived accountability and social control on employees' extra-role behaviors, while most previous researches mainly focused on studying the intention to violate or comply with ISP. Second, the proposal investigates the interaction effect of social control and perceived accountability on employees' extra-role behaviors, which has not been researched in the literature.

Practical Contribution

This study could improve the extra-role behavior of BI policy, and then probably promote the possibility of successful application of BI.

CONCLUSIONS

This work significantly contributes to the information security field by identifying potential determinants of BI policy adoption from a different perspective. By using social control theory and accountability theory, this study discusses that only combining social control and accountability together, could the extra-role behavior be improved greatly, then resulting in the increased level of perceived adoption towards BI policy.

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