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The prediction of Internet utilization behavior of undergraduate agricultural students: An application of the theory of planned behavior

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Theory of planned behavior

Abstract The theory of planned behavior has received significant attention more recently. This study used a survey to apply the theory of planned behavior to predict the Internet utilization behavior among 214 undergraduate agricultural students in Iran. Coefficient correlations and linear regressions were employed to analyze relationships among constructs. Results revealed that subjective norm and intention were the strongest predictors of the Internet utilization behavior, which explained 57% of the variance. Perceived behavioral control was the most significant predictor of the Internet use intentions. Subjective norms, to a lesser degree also had important influences on intention. Attitude did not surface as an effective direct predictor of the Internet utilization behavior. Finally, the theory of planned behavior was supported as an effective model explaining the Internet utilization behavior. The most prevalent reason to stop using the Internet was that they were experiencing problems getting access to the Internet.

Introduction

Students are increasingly moving away from the library (card catalogs and printed indexes) and toward cyberspaces to obtain information for completing class assignments and doing research. In the emerging electronic environment, knowledge about the information seeking of students through the Internet is crucial for those wishing to help them effectively meet their information needs. The Theory of Planned Behavior (TPB) has been successfully applied to predict behavior and intentions in various situations. The literature shows that most studies (e.g., Chizari, Movahed, & Lindner, 2003; Gurol, 2010; Kaur & Manhas, 2008; Omotayo, 2006; Saiti & Prokopiadou, 2008) on the use of the Internet among students have been either descriptive

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or have used correlation analysis. Although a number of studies have examined the causal relationships between some independent variables and the Internet usage by students (e.g., Memarbashi & Zamani-Miandashti, 2013; Sookhtanlo, Movahed Mohammadi, & Rezvanfar, 2009), the TPB model has rarely been used to predict factors influencing the Internet usage by students. The closest studies to this research that employed the TPB for understanding college students' intention to use and/or the Internet usage are Bidin, Hashim, Sharif, and Shamsudin (2011), and Fusilier and Durlabhji (2005). The differences in the nature of the target behavior, the population under study, and the contexts in which the TPB has been used warrant further study on the application of the TPB in students' Internet usage behavior, to develop cumulative knowledge in this area.

To the best of our knowledge, no studies thus far have specifically examined the Internet utilization behavior of Iranian undergraduate students under the framework of the TPB. In fact, very few studies (e.g., Chizari et al., 2003) have even investigated the Internet utilization behavior of a sample consisting only of agricultural students. Investigating this population is necessary when considering an increasing number of students who are studying agricultural sciences in Iranian universities, coupled with concentrated efforts by educational institutions to improve the Internet access for students. The Internet and other information and communication technologies can enhance human capital through increasing access to learning opportunities (Rice & Katz, 2003). Today's information-intensive agriculture prefers individuals who have mastered information literacy skills; therefore, studies aimed at the improvement of the situation of agriculture with information and communication technologies must focus on the human element (Csoto, 2010). An information literate agricultural graduate with strong analytical and critical thinking problem-solving skills will doubtless be a relevant agricultural professional that could contribute to agricultural development.

The objectives of the present study were: 1) to investigate the application of the TPB in predicting the Internet usage among undergraduate agricultural students, 2) to determine the motivations for the Internet usage, and 3) to determine the main obstacles faced by the respondents for an effective use of the Internet. The TPB was used to explain intention to use as well as utilization of the Internet among undergraduate agricultural students by examining factors including attitudes, subjective norms, and perceived behavioral control. Addressing important factors that predict the Internet utilization behavior of students may contribute to improved effectiveness of educational efforts targeted to this population. This manuscript hopes to add to existing knowledge on how agricultural students currently make use of the Internet and what determines their Internet usage. The research is of potential value to library and information science professionals, library personnel, information technology service providers and policy makers, students, professors, and any other interested parties. The current study adds Iran's perspective to the literature, examining why Iranian college students use the Internet, how they use it, and what problems they have with the Internet usage. Iran's perspective is important because Iran seeks to reduce US influence over the Internet and tries to disseminate Islamic culture in cyberspace. This research also provides an assessment of the infrastructural situation at Shiraz University, bearing in mind that effective Internet information seeking is dependent on the existence or availability of optimal ICT infrastructure.

Theory and past research

Dominant information technology utilization models

A wide variety of theories and models (e.g., the TPB, the Unified Theory of Acceptance and Use of Technology (UTAUT); the Technology Acceptance Model (TAM); the Model of PC Utilization (MPCU); and the Innovation Diffusion Theory (IDT)) have been developed and/or used to facilitate research on information technology adoption and usage. But probably the most well known and widely applied models in understanding the acceptance and usage of information technology include the TAM, and the TPB.

The TPB is an important social cognitive model for identifying predictors of a behavior of interest, and it has been applied for understanding a wide range of behaviors. It is an extension of the Theory of Reasoned Action (TRA) (Ajzen, 1985, 1991). The TRA has been criticized for neglecting non-volitional factors (e.g., resources and opportunities). Critics (e.g., Lam & Hsu, 2004; Park, 2003) believe that the TRA only adequately predicts a person's intention under conditions of volitional control, in that the individual can decide whether or not to perform the behavior. However, the performance of many behaviors is constrained by the lack of appropriate skills, opportunities and resources (Liska, 1984). Therefore, the major difference between these two models is that the TPB, a more comprehensive version of the TRA, includes an additional dimension of perceived behavioral control as the determinant of behavioral intention. Perceived behavioral control increases predictive power of the model by accounting for intention/behavior that is not under complete volitional control or that stem from non-volitional factors (Lam & Hsu, 2004; Lee & Back, 2007). The TPB model posits that intentions predict behaviors. Furthermore, the TPB suggests that intentions are determined by three constructs: attitude, subjective norm, and perceived behavioral control.

Similar to the TPB, the TAM is also an extension of TRA, but it has a clear focus on technology acceptance behavior of computer users (Yayla & Hu, 2007). The TAM proposes that two beliefs including perceived usefulness and perceived ease of use influence user's behavioral intention to use, which, in turn, will determine an individual's system usage. The TAM initially included attitude, but this was later omitted from the model because of its weak role as a mediator between beliefs and behavioral intention.

These models have been compared by some scholars. Based on the Mathieson's (1991) comparison of two models of the TAM and the TPB with student subjects, the TAM only provided very general information about users' opinion about a system, while the TPB provided more detailed information that could be utilized to improve information seeking behavior.