The Role of Usability in E-Commerce Services

Udo Konradt, Institute of Psychology, University of Kiel, Kiel, Germany
Gunther Held, Schickler Personnel Consulting, Hamburg, Germany
Timo Christophersen, Otto GmbH, Hamburg, Germany
Friedemann W. Nerdinger, Institute of Business Administration, University of Rostock, Rostock, Germany

ABSTRACT

The authors examined the impact of perceived usability of websites of commercial service vendors on consumer’s affective, intentional, and behavioral variables. Reflective and formative usability measures were used within a nomological network of predictors (trust, reputation, and perceived fun), mediators (user satisfaction, and intention to use), decision to choose as the criteria, product involvement as a moderator, and controls. Results from structural equation modeling revealed that usability holds both direct and indirect paths, via trust and perceived fun, to user satisfaction. User satisfaction was positively related to the intention to use and partially mediated the relation between usability and intention to use. Furthermore, product involvement does not moderate the relation between usability and intention to use and the relation between user satisfaction and intention to use. Finally, intention to use provided an excellent prediction of the decision to choose. Limitations and suggestions for future research are discussed.

Keywords: E-Commerce, Formative and Reflective Measurement Models, Product Involvement, Usability, User Satisfaction, Web Services

INTRODUCTION

B2C (Business-to-Consumer) e-commerce which involves the marketing and distribution of products and services to consumers via the Internet has advantages both for retailers and consumers. Consumers can shop at any time, do not have expenses for driving to shops, and goods are directly delivered to their homes. Market and consumer studies indicate that the average customer spent more than 1,000 US dollars on online purchases per annum (Forrester Research, 2010; TNS Infratest, 2007). The internet is also used for providing commercial services and product information. For example, with regard to the health sector, 40% of internet users regularly retrieve information on health and health insurances via the Internet (ACTA, 2004).

An important factor in the B2C e-commerce success is the usability of the shopping interface, which refers to a website’s ability to be used to

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achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use (ISO 9241-11) (Soopramanien & Robertson, 2007; Venkatesh & Agarwal, 2006). Empirical results indicate that usability is critical for the adoption or rejection of e-commerce activities (Pavlou & Fygenson, 2006; Song & Zahedi, 2005; Venkatesh & Agarwal, 2006). Despite efforts of theoretical and empirical research on e-commerce success (e.g., Song & Zahedi, 2005; Venkatesh & Agarwal, 2006), a closer look reveals several shortcomings.

First, most studies avoid examining the impact of usability within a nomological network (Cronbach & Meehl, 1955). Given the variety of factors that influence online consumers’ behavior, the integration of multiple variables and their relations into a nomological network would reduce the risk of overestimating single variables’ effects, broaden our theoretical understanding by preventing a too simplistic view, and advance the development of more extensive theories.

Second, the majority of studies regarding consumers’ behavior in e-commerce focus on success factors which predict pertinent attitudes and purchase behavior (e.g., Gefen, 2000; Gefen & Straub, 2000; Jarvenpaa, Tractinsky, & Vitale, 2000; Koufaris & Hampton-Sosa, 2002). Despite the relevance of cognitive and motivational mediating processes which might explain consumer behavior (Lohse & Spiller, 1999; Lowengart & Tractinsky, 2001), previous research has hardly addressed these issues.

Third, most studies in e-commerce and human-computer interaction research use reflective measures of usability in their models, while a growing body of research (see Diamantopoulos, Riefler, and Roth, 2008, for a review) suggest taking a more nuanced methodological view. Manifest variables that form a construct are called formative variables, while variables that reflect the construct are called reflective variables. Reviews show that previous research has rarely considered the distinction between reflective and formative measures (e.g., Jarvis, MacKenzie, & Podsakoff, 2003; MacKenzie, Podsakoff, & Jarvis, 2005), resulting in mis-specifications. Recently, Christophersen and Konradt (2012) provide reflective and formative measurement usability measures which should be examined in this study.

This study contributes to usability research in terms of the impact of the usability of the websites of suppliers of commercial services on intention to use, by developing an extensive research model that includes usability, trust, perceived fun, reputation, product involvement, and a number of user characteristics, in order to make more valid predictions regarding the decision to choose. We also provide convincing evidence on mediational processes by including user satisfaction and the individual’s intention within our research model. In doing so, we refer to a systematical conceptualization of the usability construct by using the differentiation between formative and reflective usability measures.

DEVELOPMENT OF A NOMOLOGICAL NETWORK AND HYPOTHESES

Usability is a multifaceted construct that has been conceptualized in many different ways. Often, usability is conceptualized as a latent construct which assumes that each observable item can be viewed as a reflection of the underlying latent construct (cf. Bollen & Lennox, 1991), where meaning flows from the latent construct to the indicators (cf. MacKenzie et al., 2005). However, research widely ignored a complementary alternative to the reflective measurement specifications, namely formative indicator scales (Bollen & Lennox, 1991). Unlike in reflective scales, in formative indicator models the items (i.e., indicators) are combinations that form the composite latent variable (e.g., Jarvis, MacKenzie, & Podsakoff, 2003; Konradt, Christophersen, & Schäffer-Kuelz, 2006). Several authors underline the importance to differentiate between formative and reflective measurement models because of statistical and conceptual reasons (see Diamantopoulos
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