A Model for Usability in E-Commerce Services:
Theoretical Concept and Empirical Evidence

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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. Among others, consumers are able to shop at any time, do not have expenses for driving to shops, and goods are directly delivered to their homes. It is therefore not surprising that market and consumer studies indicate that US online retail sales accounted for almost 9% of the $3.2 trillion total retail market in 2013 and will continue to grow at a compound annual growth rate of nearly 10% through 2018. (Forrester Research, 2014).

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 achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use (ISO 9241-11; Venkatesh & Agarwal, 2006). Theory and research suggest that usability is critical for the adoption or rejection of e-commerce applications in several fields of application (e.g., Pavlou & Fygenson, 2006; Song & Zahedi, 2005). Despite the significance of usability in product oriented B2C e-commerce (Koufaris, Kambil, & La Barbera, 2002; Pavlou & Fygenson, 2006; Song & Zahedi, 2005) as well as in B2B (Business-to-Business) e-commerce, which make use of Internet and web technologies for interorganizational business transactions (e.g., Konradt, Lueckel, & Ellwart, 2012), effects have rarely been demonstrated for online suppliers of services. E-commerce of services refers to the purchase and sales of services via electronic channels, such as the Internet. Even though the difference between services and products or goods is not always clear-cut and distinctive, services are intangible and production and consumption of services cannot be separated (de Jong & Vermeulen, 2003). Because of these characteristics, services are considered to be high in so-called credence qualities, which consumers find difficult to evaluate. Hence, they must rely on the supplier to be served properly. Physical goods, in contrast, are high in search qualities and experience qualities. That is, customers are able to assess the quality of products before a final purchase and make valid experience-based evaluations afterwards. This kind of evaluation is not possible in e-commerce of services, and consumers have to collect other cues for information that promise service quality, for example, the usability of the e-commerce website for services. Research by Konradt, Held, Christophersen, and Nerdinger (2012;

see also Christophersen & Konradt, 2011; Konradt & Christophersen, 2013) indicates that website usability is much more predictive of the intention to use in respect to commercial services than products. An explanation of this effect might be that a website's usability provides cues for the competence and trustworthiness of the supplier, and thus mediates the relation between trust and intention to use or buy of the service.

Thus, we aim to highlight the major importance (or implications, significance?) of website usability for online suppliers of services, suggest a theoretical model of usability in e-commerce services, and provide empirical evidence supporting the validity and predictive value of the model. Despite manifold theoretical and empirical research on e-commerce success (e.g., Song & Zahedi, 2005; Venkatesh & Agarwal, 2006), a closer look reveals several shortcomings with regard to its application for service oriented e-commerce. First, previous theory and research avoids examining the impact of usability within a nomological network of e-commerce (generally or in services). A nomological network refers to a system of theoretical links between the focal construct and other constructs (Cronbach & Meehl, 1955). Given the variety of factors that influence online consumers' behavior (e.g., Venkatesh & Agarwal, 2006), the integration of multiple variables and their relations into a nomological network would reduce the risk of overestimating single variables' effects, broaden the theoretical understanding by preventing a too simplistic view, and finally advance the development of more extensive theories.

Second, the majority of research regarding consumers' behavior in e-commerce focus on success factors which predict pertinent attitudes and intentions of purchase behavior (e.g., 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 in various fields of application (e.g., Lohse & Spiller, 1999; Lowengart & Tractinsky, 2001), previous research on e-commerce services has hardly addressed these issues.

Third, most e-commerce and human-computer interaction research use reflective measures of usability in their models, while a growing body of research (Ellwart & Konradt, 2011; see Diamantopoulos, Riefler, & 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 management research has rarely considered the distinction between reflective and formative measures (e.g., Jarvis, MacKenzie, & Podsakoff, 2003; MacKenzie, Podsakoff, & Jarvis, 2005), resulting in misspecifications of models, inconclusive tests, and biased estimates. To consider the different approaches, we use reflective and formative usability measures, which were recently provided by Christophersen and Konradt (2012).

The purpose of this paper is to contribute to usability research in terms of the impact of the usability of the websites of suppliers of commercial services on intention to use. Specifically, we develop an extensive model that includes usability, trust, perceived fun, reputation, product involvement, and a number of user characteristics to allow researchers to make more valid predictions regarding a consumer's decision to choose. We also provide convincing evidence on several mediational processes by including user satisfaction and the individual's intention in our model. The model is presented in Figure 1. In the following, we outline the conceptual components of the model and propose fundamental assumptions. In the second section, we present initial empirical research relevant to the model. In doing so, we refer to a systematical conceptualization of the usability construct by using formative and reflective usability measures.

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