



The user multifaceted expertise: Divergent effects of the website versus e-commerce expertise



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ABSTRACT

Expertise is a key factor in user's adaptation and evaluation of the IT artifact. To date however, research has widely disregarded the notion that expertise is multifaceted and, consequently, its effects should vary according to the facet measured. To address this gap, the present research shows the effects of a facet of expertise rarely studied – expertise with the artifact such as an e-commerce site (website expertise) – besides the effects of expertise with the artifact class (e-commerce expertise). It is stipulated that site expertise shapes the site use and acceptance differently and more profoundly than e-commerce expertise. The results show that users with low (vs. high) site expertise perceived the site as less easy to use, and their site acceptance was more (less) strongly influenced by the site information quality. Alternatively, e-commerce expertise played a different moderating role in the acceptance process, and users with low e-commerce expertise did not perceive the site as less easy to use. The results were replicated in a second study conducted in a different culture. The findings support the research main thesis that expertise is multifaceted and, therefore, considering the different facets is necessary to understand the process of user acceptance of the IT artifact.

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1. Introduction

Studying the process of user acceptance of the artifact is vital because it helps predict IS outcomes (Kock, Lynn, Dow, & Akgün, 2006). Little quantitative research however has examined how users adapt and accept the IT artifact. Many of the conceptual frameworks proposed in the relevant literature have adapted reductionist models such as TAM; moreover, they generally have not theorized or empirically examined the acceptance behaviour (Benbasat & Barki, 2007). Concomitantly, whereas research has studied several factors influencing user acceptance and attitude toward the IT artifact, it has not adequately theorized about the role of user expertise.

The e-commerce website is an example of a frequently encountered IT artifact. Online shoppers in the United States are expected to spend \$371 billion in 2016 (excluding travel), up 41% from 2013; accordingly, online retail will account for 11% of total retail sales in 2016 (Forrester, 2015). The growing popularity of Internet shop-

ping drives companies to focus on designing websites that perform better. Research suggests that the perceived ease of use (EOU) of a website and other site-related factors influence its acceptance. Johnson, Bellman, and Lohse (2003) showed that websites that are easier to learn how to use show higher rates of purchasing. A website that is easier to use and that delivers a compelling experience motivates visitors to use and return to it—i.e., to accept it (Kwon & Lennon, 2009).

The user level of expertise is a key factor in user's acceptance and evaluation of the artifact. The likelihood of an optimal experience is dependent on the interplay between the person, the task, and the artifact (Finneran & Zhang, 2003). Expertise was considered a central factor that should be accounted for when studying user online behaviour (Novak, Hoffman, & Yung, 2000). To date however, research in general has underestimated the role of expertise. Importantly, research has widely disregarded the notion that expertise is multifaceted and, consequently, its effects on the acceptance process should vary according to the facet considered.

Expertise is a construct that continues to gain prominence due to development in the cognitive psychology and artificial intelligence fields (Chi, Glaser, & Farr, 2014). Expertise (at times referred to as prior knowledge, familiarity, and skill) has been widely considered unidimensional. In their seminal work however, Alba and Hutchinson (1987) indicated that product expertise

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is multifaceted. Considering expertise in user studies, and differentiating between its facets, is thus vital. Disregarding contextual and user-related factors results in poor external validity for models developed in experimental settings (Gallivan, 2001). Furthermore, applied research showed the importance of considering expertise. Paris (1988) discussed how a model that considers user expertise to generate personalized answers outperforms other models. Nonetheless, the little research that showed the influence of online expertise has resulted in inconclusive results (e.g., Chang, Cheung, & Lai, 2005).

In order to respond to the question of whether user expertise is a critical, multifaceted factor in acceptance and usage studies, the current research (1) theorizes and empirically examines the role played by the artifact-specific expertise (website expertise) versus generic expertise (e-commerce expertise), (2) shows how user adaptation and acceptance of the artifact can be better understood by considering the different facets of expertise, and (3) discusses the importance of taking into consideration the multifaceted nature of expertise and the need to develop measures to capture its facets in future work.

2. Theoretical background

2.1. Underlying conceptual framework

The Technology Acceptance Model (TAM) focuses on the influence that perceived usefulness and perceived EOU have on the artifact acceptance; TAM is considered to be one of the most influential theories in organizational research (Benbasat & Barki, 2007). Although TAM is based in part on the Theory of Reasoned Actions (TRA; Fishbein & Ajzen, 1975), the two approaches differ in that TAM takes into consideration only two salient user beliefs concerning a given artifact: usefulness and EOU. Building on TRA and TAM, we propose that artifact-related factors influence ease of use and attitude toward the artifact. Attitude, in turn, drives behavioral intentions.

By applying this theory to the context of the commercial website, we advance that site-related factors should influence the EOU and attitude toward the site (Fig. 1). Website information quality, interactivity, aesthetics, and trust are well established site-related factors that have been found to correlate with the site attitude and behavioural intentions (Dickinger & Stangl 2013; Kim, Williams, & Lee, 2004; Lee & Kozar, 2006; Poddar, Donthu, & Wei, 2009; Appendix A for the definition and measure of each construct).

The main effects in Fig. 1 have been established in research. Kim et al. (2004), for instance, suggested that there are positive relationships between the information quality, trust, aesthetics, and EOU of a site with the user attitude toward that site. Nonetheless, little work has focused on the potential moderators to the acceptance process. A main thesis of this paper is that the facets of user expertise differently affect site acceptance and, therefore, considering the multifaceted nature of expertise is vital to shed light on the process of user adoption and acceptance of the IT artifact. The expertise facets are hypothesized to differently moderate the model's main effects.

An examination of the factors that moderate the relationships between EOU and attitude and their antecedents is pivotal as it helps reveal boundary conditions and contributes to an in-depth understanding of the acceptance process. As suggested by Benbasat and Barki (2007), studies that examine the antecedents of the two salient beliefs comprising the TAM (EOU and usefulness) will help establish guidelines for the design of better IT artifacts. Elie-Dit-Cosaque and Straub (2011) discussed how the user acceptance and adaptation of the IT artifact has been treated as a black box. They extended the Coping Theory, as developed by Beaudry and

Pinsonneault (2005), to explain the user adaptation phase of technology. Nonetheless, this and other research in the domain have underestimated or overlooked the expertise factor.

2.2. Role of expertise

The mitigating role of expertise has been shown in various contexts. Level of expertise was found to influence product evaluation. Expertise was found to affect the evaluative responses to product information (Sujan, 1985). Bettman and Sujan (1987) found that in a choice of comparable alternatives, priming an attribute such as reliability affected novices' choices but not those of experts. When product information was unambiguous, low expertise consumers based their evaluations on country of origin, while high expertise consumers based their evaluations on attribute strength (Maheswaran, 1994). Users with less expertise perceive a higher risk in decision making (Heilman, Douglas, & Gordon, 2000). Research also investigated the impact of expertise on information acquisition and retrieval. For instance, men's use of online reviews depended on their level of expertise (Kim, Mattila, & Baloglu, 2011).

The importance of studying expertise stems from the essential challenge/skill balance factor (Csikszentmihalyi, 1988), which measures a user's perception of how challenging the task is compared to how skillful the user is in performing the task. Perceived ease of use is actually the user's perceived skills relative to the challenge posed by the artifact (Venkatesh & Davis, 2000). The Person-artifact-Task model, proposed by Finneran and Zhang (2003), underscores the importance of user's expertise and attitude in shaping artifact usage. To evaluate a computer, experts focus on technical attributes, whereas novices focus on simple benefit information (Maheswaran & Sternthal, 1990). These authors, however, measured expertise by objective knowledge. Focusing as well on objective knowledge, Moreau, Lehmann, and Markman (2001) indicated that the effect of expertise on the adoption of a new product is complex.

Mandel and Johnson (2002) showed that expertise moderates product search behaviour. Navarro-Prieto, Scaife and Rogers (1999) studied cognitive strategies in searching the Web. They found that expert searchers plan ahead, while novice searchers do not have a clear plan and are more driven by external representations (what is experienced on the screen). Klein and Ford (2003) focused on objective and subjective expertise to study online information search. They found that high expertise users perform more information search than users with a moderate level of expertise, but less information search than users with low expertise.

Lucassen and Schraagen (2011) considered domain expertise and showed that trust judgments of domain experts (vs. novices) are influenced (not influenced) by accuracy. In an e-learning context, Lin (2011) highlighted that perceived ease of use has a stronger effect on the intention of the novice user, whereas perceived usefulness has a stronger effect for the expert user. Lin also found that the impact of satisfaction on intention is stronger for the novice user. Indeed, expertise was shown as a significant moderator within the Unified Theory of Acceptance and Use of Technology UTAUT (Venkatesh, Thong, & Xu, 2012).

2.3. E-Commerce expertise and the website expertise

The multifaceted nature of expertise has been underscored. In the marketing context, Alba and Hutchinson (1987) indicated that product expertise has five dimensions (cognitive effort, cognitive structure, analysis, elaboration, and memory). Kadan, Madureira, Wang, and Zach (2012) differentiated between two facets of an analyst's expertise (within-industry expertise versus across-industry expertise). Dane, Rockmann, and Pratt (2012) focused on domain expertise and showed how it contributes to intu-

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