An Investigation of Intention to Explore Business Intelligence Systems: A Psychological Engagement Perspective

Research-in-Progress

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Abstract

Prior research has generally found that firm-specific information technology (IT) knowledge, behavioral, normative and control beliefs, and team empowerment contributed to intention to explore IT. However, little attention is directed towards how the user experience, specifically user engagement, influences users' intention to explore IT, such as business information systems (BIS). Toward this end, this paper explores how user engagement affects users' intention to explore BIS and how user engagement is promoted by the cognitive fit between BIS interface and tasks and the regulatory compatibility between BIS interface and personal characteristics, such as style of information processing. We conducted a lab experiment to empirically test the hypotheses. This study may contribute to the extant information systems (IS) literature by uncovering the impacts of engagement experience on intention to explore and responding to the call for investigation of the BIS context where rich visualizations of the systems influence users' interactive experience.

Keywords: intention to explore BIS, engagement, cognitive fit, regulatory compatibility

Introduction

Business intelligence system (BIS) and its related areas have obtained increasing importance in the past two decades (Chen et al. 2012). BIS is a type of data-driven technology that can extract, convert, analyze, visualize, and present large data sets to assist strategic planning and managerial decision making (Deng and Chi 2012), and has been rated as one of the top 10 strategic technologies (Gartner 2009). According to a survey of the state of business analytics by Bloomberg Businessweek (2011), 97 percent of organizations whose revenues surplus $100 million use BIS to some extent. BIS handles large amount of unstructured data, supports a wide range of business decisions from operational to strategic, and helps identify new strategic business opportunities (Rud 2009). Therefore, organizations devote substantial resources to implementing BIS (Davenport et al. 2010; Li et al. 2013; Negash and Gray 2008). Different features in BIS provide access to different types of information and different ways of analyzing and making sense of the information. While BIS provides a myriad of features, it is the user's responsibility to use them and explore them. Two distinct system utilizations are exploitation and exploration that can coexist and play key roles in achieving considerable returns on information systems (IS) investments (Jasperson et al. 2005; Li et al. 2013). Exploitation refers to using IS in a standardized approach to support organizational work (Saga and Zmud 1994), whereas exploration corresponds to applying IS in a novel and explorative way (Ahuja and Thatcher 2005; Maruping and Magni 2015; Nambisan et al. 1999). Given the flexibility and enriched functionality of BIS, users who apply BIS in an explorative approach are more likely to use a broader scope of system features to support their work and develop capacity for better work performance (Ahuja and Thatcher 2005; Maruping and Magni 2015). Therefore, we focus on the exploration of BIS in this study, specifically users' intention to explore BIS which determines exploration behaviors (Marupning and Magni 2015).

Intention to explore refers to users' willingness and purpose to explore a new technology and find potential approaches to use a technology in their work (Maruping and Magni 2015; Nambisan et al. 1999). Extant studies on antecedents of intention to explore mainly examined firm-specific information technology (IT) knowledge (e.g., Nambisan et al. 1999), behavioral, normative and control beliefs (e.g., Sousa and Goodhue 2003), and team empowerment (e.g., Maruping and Magni 2015). While these studies have provided insights into different aspects related to user exploration, the extant research does not provide insights on how user experience of IS influences intention to exploration. Specifically, the human-computer interaction studies have emphasized the need to understand the engaging experiences of interacting with IS (e.g., Hassenzahl and Tractinsky 2006). User engagement promotes sales of an e-commerce site, transmission of information from an online forum, and users' interest in multimedia presentation (O'Brien and Toms 2008). Despite these positive outcomes of user engagement, there is limited understanding on how user engagement contributes to intention to explore. Thus, *our first research question pertains to how user engagement influences users' intention to explore BIS*. In the general work context, the idea of a "fit" between a person and a job affects the engagement experience (e.g., Cable and Judge 1996; Cable and DeRue 2002). Similarly, in the BIS context, the fit between BIS interface and tasks and the fit between BIS interface and users may also lead to an engagement experience. Hence, *our second research question involves how the fit between BIS interface and tasks and the fit between BIS interface and users affect user engagement, respectively*. Next, we present our theoretical background, research hypotheses, methodology, and finally make a conclusion of this study.

Engagement Theory

Conceptualizations of Engagement in the IS Use Context

In general work context, engagement is defined as a psychological state in which people feel dedicated and energetic towards their job (Bakker and Leiter 2010). Work engagement represents a positive and fulfilling state of well-being that is contrast to job burnout (Bakker and Leiter 2010). Engaged employees are energetic and actively involved in their work (Bakker et al. 2008). Besides its essential roles in general work context, engagement is also considered as a desirable user response to computer-mediated activities in the context of human computer interaction (Laurel 2013). Users describe their engaging experiences of interacting with IS as feelings that the system has caught, captured, and captivated their interest (Jacques et al. 1995). Users are engaged in a system when it "holds their attention and they are attracted to it for intrinsic rewards" (Jacques et al. 1995, p. 58). Engagement is an essential and appealing experience

sought after by both users and IS developers. A related concept of engagement is flow, but there are major differences between them. In particular, flow involves unawareness of the loss of time and the outside, while engagement still exists in the task performing and system utilization in the work environments (O'Brien and Toms 2008). In addition, flow is more related to voluntary use of a system, while engagement can occur during the non-voluntary use of a system (O'Brien and Toms 2008). Given that BIS is often mandatory in organizations due to the large investments on it, the notion of engagement is more appropriate for this study.

When interacting with IS, an engaging experience involves sensual and emotional threads of experience (O'Brien and Toms 2008). A typical attribute in the sensual thread of experience is aesthetics of the system (Laurel 2013; Overbeeke et al. 2003). Aesthetics refers to the visual appearance of an interface that conforms to design principles (i.e., symmetry, balance, emphasis, harmony, proportion, rhythm, and unity) (Beardsley 1982). Users' perception of aesthetics consists of two dimensions: classic aesthetics that emphasizes orderly and clear design and relates to many of the design rules, and expressive aesthetics that pertains to the creativity and originality of a design (Lavie and Tractinsky2004). Given the functional complexity of BIS, we also investigate the challenge users receive from the system that is also within the sensual thread. The challenge experienced can be manifested by cognitive effort (Garbarino and Edell 1997), defined as the psychological costs of performing the task of obtaining and processing the relevant information in order to arrive at one's decision (Pereira 2000). A consistent finding is that humans have limited cognitive resources and allocate them cautiously (e.g., Payne 1982; Russo and Dosher 1983). Cognitive effort is conceived as costly and humans expend only the effort necessary to make a satisfactory rather than optimal decision. For instance, in the context of decision support system, decision makers aim to maximize decision quality and minimize effort (Todd and Benbasat 1999). In addition, the emotional thread of experience can be manifested by perceived enjoyment, which refers to the extent to which the activity of using IS is perceived to be enjoyable in its own, apart from any performance consequences that may be anticipated (Davis et al., 1992). Perceived enjoyment can be characterized as an intrinsic motivation derived from the interaction with the system (Brief and Aldag 1977). Thus, in this research, we will examine the dimensions of aesthetics, enjoyment and cognitive effort for the engagement experience.

Antecedents of Engagement

In the work context, a model of job-person fit is a well-established framework for understanding the antecedents of engagement (e.g., Brkich et al. 2002; Finnegan 2000). Specifically, the greater the job-person fit, the greater the likelihood of job engagement. Recent work by Leiter and Maslach (2008) identifies that job-person fit regarding the workload contributes to the job engagement, and workload pertains to the demands and efforts required by the job (Leiter and Maslach 2008). A paralleled concept in the IS literature is cognitive fit which also involves the cognitive load when performing tasks with IS. In IS literature, the cognitive fit is defined as a match between IS interface design and tasks (Vessey 1991). The cognitive fit between query interface and task complexity has been found to influence users' subjective mental workload (Speier and Morris 2003). In the e-commerce context, the cognitive fit has been shown to affect website users' cognitive decision efforts for shopping and their attitude towards (e.g., the feeling of enjoyment) (Hong et al. 2004).

In addition, Keller and Bless (2008) posits that a regulatory compatibility between contextual factors and individual factors can contribute to individuals' engagement experience. In the BIS context, we narrow down the regulatory compatibility to the fit between BIS interface (a contextual factor) and style of information processing (an individual factor). Style of information processing refers to individuals' propensity to process information in a visualized or verbalized manner (Childlers et al. 1985). Specifically, if an individual prefers visual style of processing, he/she is more likely to experience regulatory compatibility with the BIS interface given the richly visualized BIS interface. Individuals who experience a regulatory compatibility are intrinsically motivated to engage in the activities or tasks, and enjoy the experience of conducting activities (Deci 1975; Keller and Bless 2008). Taken together, in this research, we will investigate the impacts of cognitive fit between BIS interface and tasks and the regulatory compatibility between BIS interface and individual style of processing on the engagement experience toward the BIS.

Outcomes of Engagement

In the work context, engaged employees find their work more enjoyable, and thus turn this enjoyment into effective actions. Engaged employees tend to bring their full capacity to solving problems, connecting with people, and developing innovative services (Bakker and Leiter 2010). The energy and focus derived from the work engagement allow employees to bring their full potential to the job (Gruman and Saks 2011). This energetic focus enhances the quality of their core work responsibilities, since employees will be more capable and motivated to concentrate on their core job. Further, employees go beyond the core responsibilities of their work and take the initiative to support the organization through mentoring, volunteering, developing new professional skills (Bakker and Leiter 2010). Through these extra-role behaviors, employees dynamically adapt to the ever-changing organizational environment and gain competitive advantages. Work engagement is consistent with the broaden-and-build perspective proposed by Fredrickson (2001). Research on cognitive broadening demonstrates that positive emotions (e.g., engagement) increase the cognitive flexibility (Isen and Daubman 1984), creativity (Isen et al. 1987), integration (Isen et al. 1991), and efficiency of thought (Isen and Means 1983). A positive emotion state like engagement can go beyond the general motivating properties of pleasant feelings, and be translated into cognitive processes which open possibilities that people overlook under the condition of pressure or distress.

When users are engaged in interacting with a system, enjoyment makes individuals "underestimate" the difficulty associated with using the system since they simply enjoy the process itself and do not perceive it to be arduous (Venkatesh 2000). Individuals who experience pleasure or enjoyment from using IS are more likely to form intentions to use it than others across contexts, including educational settings (Davis et al. 1992), game-based training (Venkatesh 1999), home use (Brown and Venkatesh 2005; Hsieh et al. 2008), e-commerce transactions (Kamis et al. 2008), mobile services (Fang et al. 2006), knowledge contribution in e-networks (Wasko and Faraj 2005), knowledge transfer in IS implementation (Ko et al. 2005), and open-source software project development (Shah 2006). The enjoyable experiences of use effectively drive users' interest, relieve their cognitive burdens, and promote use intentions and behaviors (Li et al. 2013). In the context of e-commerce, cognitive effort is a salient factor affecting consumers' intentions to shop online (Jarvenpaa and Todd 1997). When products are complex or consumers have limited knowledge, the purchasing process becomes more challenging, leading to greater negative emotion (Garbarino and Edell 1997). Aesthetics experience has been applied by software developers in interface design (Skelly et al. 1994; Lavie and Tractinsky, 2004). Aesthetics has been linked to usability and users' skills and needs (Hummels, 2000; Laurel 2013; Overbeeke et al. 2003).

Research Model and Hypotheses

In this study, we drew on the engagement literature to identify typical concepts that could represent the engagement experience of BIS users, including perceived aesthetics, cognitive effort, and perceived enjoyment. Since the engagement literature identified that job-person fit regarding workload and regulatory compatibility between personal factors and contextual factors contributed to engagement experience, we suspect that the cognitive fit between BIS interface and tasks and the regulatory compatibility between BIS interface and users' style of processing may affect their engagement experience toward the BIS. Given that engagement experience toward BIS can promote users' cognitive flexibility and creativity, we propose that engagement experience may enhance users' intention to explore BIS. Thereby, we developed our research model, as shown in figure 1.

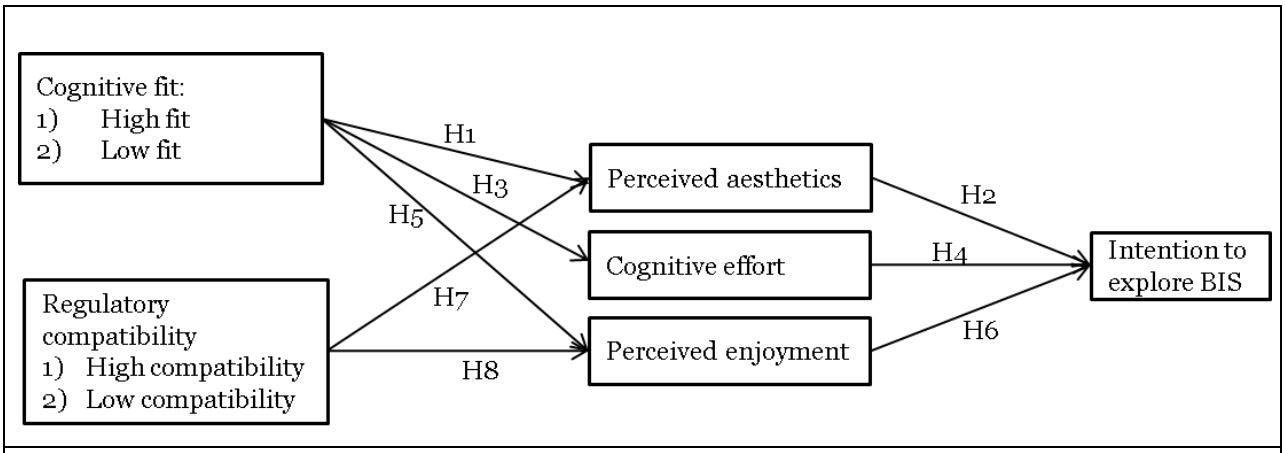

Figure 1. Research Model

Cognitive Fit → Perceived Aesthetics → Intention to Explore

We expect that cognitive fit will be positively associated with perceived aesthetics, which in turn will be positively associated with intention to explore BIS.

The BIS processes large data sets to provide information for decision makers (Chen et al. 2012), and an appropriate visualization of query system, which is similar to BIS, has been shown to improve the decision makers' efficiency and comprehension of information (Speier and Morris 2003). When a cognitive fit exits, the information emphasized in the interface facilitates the task solving activity (Vessey 1991). Thus, when conducting tasks, users may perceive that the BIS interface has a clear design with emphasis on relevant information, and thus consider the BIS interface as aesthetic (Beardsley 1982; Lavie and Tractinsky 2004). In addition, when a cognitive fit occurs, users find it simple to solve problems with the provided interface (Vessey 1991; Speier and Morris 2003). Users' simplicity evaluation of the application of BIS interface positively affects users' considerations of aesthetics (Karvonen 2000). Thus, when users experience a cognitive fit between the BIS interface and the tasks, they are likely to display higher perceived aesthetics. By contrast, when users experience cognitive mismatch, it's more complex to process the information in the BIS, since users need to adjust the cognitive mismatch (Hong et al. 2004). Thus, the first hypothesis is proposed as follows.

HYPOTHESIS 1 (H1): BIS users who experience a high cognitive fit will display higher perceived aesthetics than those who experience a low cognitive fit.

Aesthetics corresponds to the orderly, clear, clean and symmetrical design of a system or visual richness, diversity, and complexity of the system (Lavie and Tractinsky 2004). Users feel aroused for the aesthetic system, and are likely to approach to the system (Deng and Poole 2010). Aesthetic system has the potential to enhance creativity and innovative exploration of the system (Fishwick 2002, 2003). In the BIS context, the aesthetics of BIS interface is critical due to the rich contents of data analytics (Chen et al. 2012). If the BIS interface design is disordered, unclear and monotonous, users may get bored and disengaged with the BIS, and thus are less interested in explore the system (O'Brien and Toms 2008). When users consider the BIS interface as aesthetic, they tend to approach the system and find innovative approaches to explore the BIS. Thus, hypothesis 2 is formalized as follows:

HYPOTHESIS 2 (H2): Perceived aesthetics is positively related to users' intention to explore BIS.

Cognitive Fit → Cognitive Effort → Intention to Explore

We expect that cognitive fit will be negatively associated with cognitive effort, which in turn will be negatively associated with intention to explore BIS.

When users experience a cognitive fit, the interface presents the information on which their problem solving is based (Vessey 1991). Prior studies showed that users who experienced a cognitive fit spent less

effort to process the task information in the context of query system (e.g., Speier and Morris 2003) and online shopping (e.g., Hong et al. 2004). However, when users experience a cognitive mismatch between the interface and tasks, the interface presents irrelevant information for the problem solving (Vessey 1991). Thus, users consume more efforts to accommodate their mental representations to solve the tasks (Hong et al. 2004). Similarly, in the BIS context, when users experience a fit between BIS interface and tasks, they are likely to spend less effort to perform the tasks, since the BIS interface facilitates the problem-solving process with relevant information. On the other hand, when users experience a mismatch between BIS interface and tasks, they may spend more effort to accommodate their mental representations with irrelevant information. Thereby, hypothesis 3 is proposed as follows.

HYPOTHESIS 3 (H3): Users who experience a high cognitive fit will consume less cognitive effort than those who experience a low cognitive fit

Humans have limited cognitive resources and allocate them cautiously (e.g., Payne 1982; Russo and Dosher 1983). In the e-commerce context, cognitive effort is a salient factor affecting consumers' intentions to shop online (Jarvenpaa and Todd 1997). When products are complex or consumers have limited knowledge, the purchasing process becomes more challenging, leading to greater negative emotion (Garbarino and Edell 1997). Similarly, in the BIS context, when users perform tasks that are challenging and requiring much cognitive effort, they tend to have negative feelings toward the BIS, and are less willing to use it. Furthermore, due to limited resources of information processing (Kahneman 1973; Lee et al. 2012; Sweller 1988; Zakay 1989), users remain fewer cognitive resources to find novel ways of using the BIS. Since cognitive resources are essential for technology exploration (Ahuja and Thatcher 2005), users who spend more cognitive effort to use the BIS are less likely to further explore the BIS. Considering the rich functionality and complexity of the BIS (Chen et al. 2012), cognitive resources are more critical for users' intention to explore the BIS. Thus, hypothesis 4 is formulated as follows.

HYPOTHESIS 4 (H4): Cognitive effort is negatively related to users' intention to explore BIS.

Cognitive Fit → Perceived Enjoyment → Intention to Explore

We expect that cognitive fit will be positively associated with perceived enjoyment, which in turn will be positively associated with intention to explore BIS.

Prior studies on consumer behaviors found that when experiencing a cognitive fit between website interface and tasks (e.g, shopping), consumers will display a more positive attitude toward the website, and consider the interaction with the website as pleasant and joyful (e.g., Hong et al. 2004; Kamis et al. 2008; Koufaris 2002). The fit between interface presentation and task can facilitate information processing, which has been shown to increase enjoyment in the website setting (Tung et al. 2006). Similarly, in the BIS context, when the fit between the BIS interface and the tasks occurs, users' information processing is facilitated, and thus they may consider the interaction with the BIS as enjoyable. By contrast, when users experience a mismatch between the BIS interface and the tasks, their information processing is hindered and thus users may experience less enjoyment. Thus, hypothesis 5 is proposed as follows.

HYPOTHESIS 5 (H5): Users who experience a high cognitive fit will display higher perceived enjoyment than those who experience a low cognitive fit.

Enjoyment makes users "underestimate" the difficulties associated with using IS, since they enjoy the process of interacting with IS (Venkatesh 2000). Enjoyment creates a lower cognitive burden because the users are experiencing pleasure from the IS and are willing to expend more effort (Agarwal and Karahanna 2000; Deci 1975). As cognitive resources are essential for technology exploration (Ahuja and Thatcher 2005), users who feel enjoyable for integrating with the BIS are more likely to have enough cognitive resources for exploration, and thus may display higher intention to explore. In addition, perceived enjoyment is a type of positive affect that has been found to promote desire for exploration (Kashdan et al. 2004; Lyubomirsky et al. 2005). The enjoyment experienced when interacting with BIS contributes to cognitive flexibility that fuels explorative ideas for using the BIS (Li et al. 2013). Thereby, we propose hypothesis 6.

HYPOTHESIS 6 (H6): Perceived enjoyment is positively related to users' intention to explore BIS.

Regulatory Compatibility → Perceived Aesthetics/Perceived Enjoyment→ Intention to Explore

We expect that regulatory compatibility will be positively associated with perceived aesthetics and perceived enjoyment, which in turn will be positively associated with intention to explore BIS.

A regulatory compatibility refers to the match between personal and environmental factors (Keller and Bless 2008). In the context of our study, we narrow down the environmental factor as the BIS interface, and the personal factor as the users' style of processing, which is an important personal characteristic that influences information processing (Childers et al. 1985). When users experience a high regulatory compatibility between the BIS interface (e.g., visual design) and their style of processing (e.g., visual style of processing), they are likely to focus their attention on the interface and appreciate the visual richness of the interface, and thus may perceive the BIS as aesthetic (Lavie and Tractinsky 2004). By contrast, when users experience a low regulatory compatibility between BIS interface (e.g., visual design) and their style of processing (e.g., verbal style of processing), they are less likely to appreciate the visual appearance of the BIS interface, and may consider the BIS as unbalanced or inharmonious. Thus, hypothesis 7 is formulated as follows.

HYPOTHESIS 7 (H7): Users who experience a high regulatory compatibility will display higher perceived aesthetics than those who experience a low regulatory compatibility.

Individuals enjoy regulatory compatibility experiences, are willing to spend additional time experiencing a state of regulatory compatibility, and are intrinsically motivated to engage in such behavioral episodes (Keller and Bless 2008). In the context of BIS, when users experience a compatibility between the BIS interface (e.g., visual design) and their style of processing (e.g., visual style of processing), they tend to consider this experience as enjoyable. In contrast, when a low regulatory compatibility occurs, users are less likely to enjoy the activity and engage in it (Nakamura and Csikszentmihalyi 2009). Thus, hypothesis 8 is proposed as follows.

HYPOTHESIS 8 (H8): Users who experience a high regulatory compatibility will display higher perceived enjoyment than those who experience a low regulatory compatibility.

Methodology

We recently finished collecting data to test the hypotheses and the model. We will perform the analyses and will be able to present the preliminary results from our study at ICIS in December. A 2×2 lab experiment was conducted to examine the hypotheses. Subjects were recruited from undergraduate students, and received McDonalds' coupons after completing the experiment. The two independent variables were cognitive fit and regulatory compatibility. The extent of cognitive fit was manipulated by the interaction of the BIS interface and the tasks. All subjects viewed the same BIS interface, but one group of subjects conducted tasks that matched the BIS interface while the other group of subjects performed tasks that didn't match the BIS interface. This BIS interface was adapted from a dashboard from MicroStrategy Desk Analytics with rich visualization, since it was close to the BIS used in organizations. The extent of regulatory compatibility was measured as the match between subjects' style of processing and BIS interface in the experiment, and will be separated into two groups in the analysis. Specifically, subjects answered survey questions of style of processing, and will be clustered into subjects who preferred visual style of processing and those who preferred verbal style of processing during the stage of analysis. Since the BIS interface used in our experiment was highly visualized, subjects who preferred visual style of processing were expected to experience high regulatory compatibility, whereas subjects who preferred verbal style of processing were expected to experience low regulatory compatibility. As for control variables, we measured demographics as well as perceived innovativeness of IT which has been shown to be associated with exploration (e.g., Hirschman 1980; Rogers 2003).

Measurement items for style of processing were adapted from Childers et al. (1985). A sample item would be "I enjoy doing work that requires the use of words". Items for intention to explore BIS were adapted from Maruping and Magni (2015) and Nambisan et al. (1999) for our investigative context. A sample item would be "I intend to spend time and effort in exploring BIS functions for potential applications in my work". Items for personal innovativeness of IT were adapted from Agarwal and Prasad (1998). A sample item would be "If I heard about a new information technology, I would look for ways to experiment with

it". Items for perceived aesthetics were adapted from Lavie and Tractinsky (2004). A sample item would be "the interface of business intelligence system is clear". Items for perceived enjoyment were adapted from Agarwal and Karahanna (2000), and a sample item would be "Conducting tasks with business intelligence system was enjoyable". Items for cognitive effort were adapted from Hong et al. (2004), and a sample item would be "It takes much effort to use the BIS to complete the task".

The experiment was conducted in a computer lab with ten seats. Because of the room-size limitation, the experiment was divided into multiple sessions. Each session was administrated by the same experimenters, and followed the standardized protocol. The experimental procedures were as follows.

Step 1: Subjects firstly conducted a survey on lab computers to rate their style of processing, personal innovativeness of IT

Step 2: A cover story was provided for the subjects. A good cover story can strengthen the influence of experimental manipulation, and offer rational for data collection (Harmon-Jones et al. 2007). From the cover story, subjects learned that they would use the BIS in the experiment and they would act as system analysts. A video clip was briefly displayed to introduce the BIS interface to alleviate the novelty effect of BIS, if any. Therefore, subjects had a preliminary understanding of the essential functions of BIS when performing the tasks.

Step 3: The lab computer randomly assigned a type of treatment to the subject. Randomization of treatment assignments serves to control for possible confounding effects. This experiment ensured that a similar number of subjects were assigned to each treatment. One group of subjects was assigned to the low cognitive fit group, whereas the other group was assigned to the high cognitive fit group. Both groups used the same BIS interface to ensure that they received the same information from the interface.

Step 4: After completing the task, the subjects answered the questions of manipulation check on cognitive fit and regulatory compatibility. They also assessed survey questions about their perceived aesthetics, perceived enjoyment, cognitive effort and intention to explore BIS.

Conclusion

This study investigates the effect of engagement experience on users' intention to explore BIS functions. To the best of our knowledge, this is among the first in IS research that investigates the impact of engagement experience on users' intention to explore BIS. Users' intention to explore BIS functions is a crucial predictor for BIS exploration behavior which can lead to successful system implementation and realization of organizational business value (Maruping and Magni 2015; Nambisan et al. 1999). In general, this research offers several major theoretical contributions. *Firstly*, this research contributes to the IS use literature on exploration. Prior research on exploration intentions has called for research to examine antecedents that promote its development (e.g., Magni et al. 2010; Maruping and Magni 2015; Nambisan et al. 1999). This study suggests that the engagement experience, including perceived aesthetics, cognitive effort, and perceived enjoyment, can influence users' intention to explore BIS functions. *Next*, this study further examines antecedents of engagement experience from the fit perspective. Particularly, the cognitive fit between BIS interface and tasks may increase users' perceived enjoyment and aesthetics, but decrease their cognitive effort. The regulatory compatibility between BIS interface and users' style of information processing may enhance users' perceived enjoyment and aesthetics. To our knowledge, this is first study that introduces regulatory compatibility into IS context. *Finally*, this study responds to the call for investigating BIS related issues (e.g., Chen et al. 2012). The empirical studies on BIS use have received limited attention (e.g., Chen et al. 2012). This study has critical implications concerning the direction of BIS implementation and BIS user experience. This paper suggests that BIS users show stronger intentions to explore when they experience high levels of engagement.

Regarding potential practical implications, this study implies that organizations that implement BIS could enhance users' engagement experience to promote their explorative intention, which in turn may lead to actual exploration behaviors. For BIS designers, they may take into account the cognitive fit and the regulatory compatibility to establish more engaging user experience.

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