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# Effects of Positive Emotions on Enhanced IT Use

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## ABSTRACT

Recently emotions started to receive more attention from IT use researchers. However, similarly to psychology, much of the focus goes to investigation of negative emotion influence. Drawing on broaden-and-build theory and flow theory, this manuscript aims to explore how positive emotions can influence enhanced IT use. In order to test it, experiment study is proposed. Findings are expected to support influence of positive emotions on enhanced IT use via state of flow. This suggests that organizations seeking to improve individual IT use should aim to stimulate positive emotions in individual users.

## Keywords

Post-adoption, IT use, positive emotions, broaden-and-build theory.

## INTRODUCTION

Similar to psychology literature, most of the IS studies tend to focus on increasing overall user satisfaction, decreasing influence of negative emotions and investigating antecedent of negative emotions in IS use (e.g., Cockton, 2002, Hassenzahl & Tractinsky, 2006, Chea & Luo, 2008). Accordingly, we argue that further investigation of the influence of positive emotions is necessary as application of positive psychology finding may expand our understanding of enhanced IT use considering the influence of positive emotions.

Therefore, this study focuses on the influence of positive emotions on enhanced IT use. More specifically this study focuses on the influence of three positive emotions: joy, interest, and contentment.

Our study makes several contributions. First, we propose a more detailed view of positive emotions in IS literature (i.e. beyond enjoyment). Second, we contribute to the further expansion of positive emotion perspective in the context of enhanced IT use (B. Fredrickson, 2004). Finally, we offer the discussion of expected finding and contributions.

This paper is organized as follows. First, we briefly review the literature on positive emotions and enhanced IT use. Then, we introduce broaden-and-build theory of positive emotions by Fredrickson (2004) and flow theory (Csikszentmihalyi & Csikszentmihalyi, 1988). Then, we present theoretical development and hypotheses and

describe the method we propose to use in conduct of this study. Finally, we discuss our expected results.

## LITERATURE REVIEW AND THEORETICAL DEVELOPMENT

### Enhanced IT Use

The majority of the IS research is concerned about initial IS adoption and use. Post-adoption IS literature consists of three streams: continued IT use (e.g., Bhattacharjee & Premkumar, 2004; Karahanna, Straub, & Chervany, 1999; Parthasarathy & Bhattacharjee, 1998), habit formation (de Guinea & Markus, 2009; S. S. Kim & Malhotra, 2005), and enhanced IT use (e.g., Bagayogo et al., 2014; Barki, Titah, & Boffo, 2007; Sun, 2012).

Enhanced IT use is defined as “novel ways of employing IT features and has distinct forms and attributes” (Bagayogo et al., 2014, p. 362). The examples of enhanced IT use are the application of previously unused features, using IT features for supplementary tasks, and using feature extensions (Bagayogo et al., 2014).

### Positive Emotions and IT Use

Positive emotions in IS are defined as emotions resulting from “the appraisal of an upcoming event that will generate positive outcomes” (happiness/contentment) and “the appraisal of an event as being an opportunity likely to result in positive consequences and over which individuals feel they have some control” (excitement/joy) (Beaudry & Pinsonneault, 2010, pp. 697–698). Fredrickson (1998, p. 304) described *interest* as the emotion arising in the context construed as safe and offering novelty, change, and a sense of possibility or mystery (Fredrickson, 1998, p. 305). Finally, *contentment* is described as the emotion arising in situations appraised as safe with high degree of certainty and a low degree of effort (Fredrickson, 1998, p. 306).

Davis et al. (1992) discovered that enjoyment was positively associated with intention to use IS. Similarly, several studies focused on the influence of enjoyment/pleasure on intention/attitude to use IS (e.g., Chin and Gopal, 1995, Kim et al., 2004, Koufaris, 2002, Compeau & Higgins, 1995, Compeau et al., 1999). Additionally, two studies found that state of flow to be related to both attitude towards IS and IS use (Trevino & Webster, 1992, Webster et al., 1993). Further, Webster & Martocchio (1992) discovered positive association between playfulness and IS related learning.

## Broaden-and-build Theory

Traditional approaches to the emotions related research tended to pay little attention to positive emotions and attempted to forcefully fit them into general models of emotions. Fredrickson (2004) developed an alternative model for positive emotions and argued that proposed model provides a better fit with the unique characteristics of positive emotions. The author develops the broaden-and-built theory of positive emotions. The argument is that positive emotions “*broaden* momentary thought-action repertoires and *build* enduring personal resources” (B. Fredrickson, 1998, 2004, p. 1369; B. L. Fredrickson, 2001). According to the author traditional general emotion models view the outcome of (negative) emotions as relatively narrow thought-action repertoire (e.g., escape, attack or expel). On the other hand, author theorizes that positive emotions tend to broaden individual momentary thought-action repertoire, expanding the range of thoughts and actions resulting from the experienced positive emotions.

## Flow Theory

Flow theory (Csikszentmihalyi, 1975) has been suggested as a useful construct for understanding and studying creativity in the context of IT use (Webster & Martocchio, 1992).

According to motivation theory of flow by Csikszentmihalyi (1975), flow experiences are characterized by optimal and enjoyable experiences in which one feels “in control of his/her actions, masters of one’s own fate ... sense of exhilaration, a deep sense of enjoyment” (Csikszentmihalyi, 1990, p. 3). Further, flow state is reached when the task at hand challenges individual enough to encourage playful, exploratory behavior, without challenging beyond one’s capacity (Webster et al., 1993). For instance, a task demanding very little effort would lead to the state of boredom, while overly demanding activity would lead to the state of anxiety (Csikszentmihalyi, 1975, 1990).

## HYPOTHESIS DEVELOPMENT

Fredrickson (2004, p. 1369) argue that positive emotions (joy, interest, and contentment) “*broaden* momentary thought-action repertoires”. Specifically, in Fredrickson and Branigan (2004), authors find that joy and contentment stimulate higher levels of breadth of the thought-action when compared to neutral and negative emotional states (e.g., fear and anger).

Moreover, Fredrickson (1998) argues that there is an association between positive emotions with the flow state described in Csikszentmihalyi (1990). Similarly, we argue that in the context of IT use it would imply the positive association between positive emotions and the state of flow. However, as in this study we attempt to focus on three dimension of positive emotions we argue that, more specifically, joy, interest, and contentment will be

positively associated with the state of flow. Accordingly, we posit:

*H1a/b/c: Joy/Interest/Contentment will be positively associated with state of flow.*

Further, Fredrickson (2004) argues that positive emotions “*broaden* momentary thought-action repertoires and *build* enduring personal resources” (B. Fredrickson, 1998, 2004, p. 1369; B. L. Fredrickson, 2001). For instance, “Joy ... creates the urge to *play, push the limits and be creative*; urges evident not only in social and physical behavior, but also in intellectual and artistic behavior.” (Barbara L. Fredrickson & others, 2004, p. 1369, emphasis added). Similarly, the author argues that interest is associated with the *urge to explore*, absorb new information and experiences, and contentment to *incorporate current settings* into overall knowledge.

Intuitively, one can argue that more creative and explorative state stimulated by positive emotions in the context of the post-adoptive IT use would result in more adoptive, creative use of provided IS. Therefore, we posit: *H2: State of flow will be positively associated with enhanced IT use.*

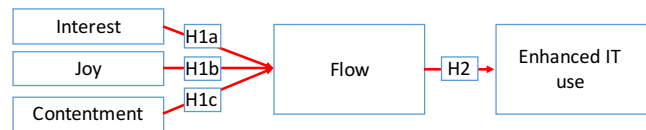


Figure 1. Research Model

## METHODOLOGY

We intend to conduct a longitudinal experimental study. The potential setting for the proposed experiment is undergraduate or graduate class introducing the use of the IS somewhat familiar to all participants (e.g., text editing software or photo editing software) that students will be required to use over the course of the semester. As a part of the course students will be required to regularly view training videos related to the software package. Students will be randomly assigned to four treatment groups: joy, interest, contentment and control. Consequently, each group will be assigned to view one of four different sets of training videos over the course of the study. Each of the four video courses will be created with separate emotional charge (e.g., more humorous in case of joy and more neutral in case of control group videos). Upon watching the videos, participants will be asked to answer a questionnaire. Furthermore, all participants will be asked to finish the task that would encourage creative use of given IT (e.g., creating a picture using only text or make a collage using photo editing software) at the very beginning of the study and at the end of the training videos.

According to the Fredrickson (1998), while most of the negative emotions may result in the immediate actions (e.g., fight or flight when experiencing fear), positive emotions might induce its influence during longer periods

of time. Therefore, we expect that longitudinal study would allow us to capture the influences of positive emotions on enhanced IT use. The state of flow in the context of IT use will be measured by adapted version of Csikszentmihalyi and Csikszentmihalyi (1988). Enhanced IT use will be measured by modified instrument by Barki, Titah, and Boffo (2007).

### EXPECTED RESULTS AND CONTRIBUTIONS

Previous research on enhanced IT use and influence of emotions on IT use has shown the importance of both phenomena on the individual performance. We expect to find the support for the proposed hypotheses from the data collection and analysis.

Results of this study will have both theoretical and practical contributions. First, this study aims to provide empirical support to the proposed theorization of the influence of positive emotions on the enhanced IT use.

Second, this study aims to expand and complement current view of emotions in post adoption IT use in several ways. More specifically, we focus on the role of positive emotions arguing that most of the existing literature focuses on negative emotions or more cognitive evaluation of IT use. Further, this study aims to provide more detailed view of positive emotions beyond joy and satisfaction.

From the perspective of practice, this study offers two contributions. First, this study identifies three specific positive emotions (joy, interest, and contentment) and their influence on enhanced IT use, which might provide suggestions towards leveraging improved task efficiency during IT use. Second, this study offers one example of stimulating positive emotions with the intention to improve enhanced IT use of individual users.

### Limitations

As it is the case with any study, it is important to acknowledge study limitations. First, as we will ask to report state of flow in the context of IT use and enhanced IT use at the end of the day, there is a chance for the presence of recall bias. The second limitation is related to the fact that our study participants will be exposed to a variety of emotions throughout the day that might be triggered by factors other than the online videos. The nature and process of post adoptive IT use will benefit from further theorization and empirical validation of our findings.

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