

A Meta-Analysis of Emotion and Cognition in Information System

Wen-Lung Shiau, Department of Business Administration, Zhejiang University of Technology, China

Puxi Shi, Department of Business Administration, Zhejiang University of Technology, China

Ye Yuan, Department of Business Administration, Zhejiang University of Technology, China

ABSTRACT

The current research on the information systems (IS) shows that emotion and cognition can affect behavior, but their interaction with each other is not clear. This paper attempts to clarify the interaction between emotion and cognition and explain their antecedents and consequences. This research includes a meta-analysis composed of 33 papers related to emotion and cognition in high-quality IS journals. Results reveal cognition affects emotion when emotion can be changed or manipulated by an external stimulus, and emotion can be attributed to a combination of multiple cognitive appraisals. By contrast, emotion affects cognition when it involves the use of information technology and focuses on intuitive interface design features and stable personality traits. The authors contribute to the literature with a more comprehensive summary of antecedents and consequences of emotion and cognition and provide practical implications for enterprises to understand consumer behavior from the perspective of the interaction between emotion and cognition.

KEYWORDS

Cognition, Emotion, Information System, Interaction, Meta-Analysis

1. INTRODUCTION

The rapid growth of recent technologies, such as the Internet, information and communication technologies, and digital media modify consumers' interaction, behavior, and decision making (Shiau 2016 et al.; Alam et al., 2019). The massive increase in information system (IS) in enterprises also integrates and extends business processes effectively (Shiau 2016; Wei et al., 2017). Taking enterprise resource planning (ERP) for example, small and medium sized enterprises adopt ERP systems to achieve inventory reduction, data integration, and cost reduction (Shiau et al., 2009). IS researchers are also becoming increasingly interested in the studies of emotion and cognition because emotional and cognitive processes that appear frequently in IS usage experiences of individuals and enterprises. Cognitive processes underlie a person's appraisal, whereas emotions play an essential role in a person's experiences. However, cognitive models cannot contain all antecedents of information technology (IT) usage because the use of new technology is complex and multifaceted. Emotions also influence

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our beliefs and attitudes and guide our thinking, decision making, and actions (Gratch & Marsella, 2004). The importance of emotions and cognitions has been recognized in the IS field, but further concern has arisen over the cognitive-affective and affective-cognitive units. In the theory of the cognitive-affective personality system (CAPS), the affective-cognitive unit is conceived as a stable or characteristic mediating process or part of the personality system (Mischel & Shoda, 1995). When people encounter several events, complex units of cognition–emotion in the personality system will interact and ultimately determine people’s behaviors. Subsequently, the cognitive-affective-conative model has been explored and used to investigate users’ attitudes toward IS, that is, the relationship between cognition, affection, and conation (Huang et al., 2018).

Zhu et al. (2014) proposed the nomological network for emotions in IS research and presented that “cognitive processes and emotional experiences” are intertwined. Attention to the interaction between emotion and cognition has increased in recent years. Cognitive psychology demonstrates that emotion and cognition should be viewed as inherently integrated and fundamentally interactive (Karali, 2020). Considerable research has shown that cognition leads to emotion (Boracchi et al., 2001; Li et al., 2017; Roseman, 1991; Salanova et al., 2011). Other studies have shown that emotion affects cognition (Kim et al., 2010; Laumer et al., 2016; Sander et al., 2005; Stanford, 1986). The emphasis on the interaction between emotion and cognition in social neuroscience and social psychology indicates that emotion contributes to the growth of knowledge and that identifying such interconnections can be applied to the design of learning environments (Kaiser et al., 2018). Despite tremendous advances, several important issues regarding emotion and cognition interaction remain unresolved (Okon-Singer et al., 2015). Despite a theoretical basis for the interaction between cognition and emotion, the understanding of this interaction effect is limited, especially in the context of IS (Riaz et al., 2018). How emotion and cognition interact with each other remains unclear. Hence, the authors address the following research questions to address this research gap.

RQ1. How does cognition affect emotion?

RQ2. How does emotion affect cognition?

RQ3. What are the antecedents and consequences of emotion and cognition in the IS context?

For researchers, one of the most important tasks is to read articles published by other researchers in related fields (Su et al. 2009) and understand casual relations. The purpose of this paper is to clarify the causal effects of cognition and emotion by using meta-analysis. The authors collected data from high-influence journals in IS (Everard et al., 2017) and used a narrative method to analyze articles related to cognition and emotion. The authors also summarized the antecedents and consequences of cognition and emotion in the IS context. This paper has two main contributions. First, it clarifies the relationship between cognition and emotion in the IS field. Second, it addresses several opportunities for researchers to gain a deeper understanding of customer behaviors from antecedents and consequences of cognitive and emotional perspective. To achieve these objectives, the rest of this paper is organized as follows. Section 2 reviews the literature on cognition and emotion in IS. Section 3 explains the research methodology. Section 4 presents the results and discussion. Finally, conclusions are drawn and suggestions for further research are made.

2. LITERATURE REVIEW

2.1. Cognition in IS

Cognition is a psychological behavior or process that acquires knowledge and understanding through thoughts, experiences, and senses. Cognitive activity occurs in a real-world context and involves perception and action (Wilson, 2002). According to O’Regan (1992), cognition refers to action. Collectively, interpretation, judgment, reasoning, and decision making are the four important cognitive

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