Online Decision-Making in Receiving Spam Emails Among College Students

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ABSTRACT

Decision-making in the real world has been extensively studied, whereas decision-making in the cyber world is relatively unknown. The present study investigated how email users made their decisions to read or delete spam emails, unsolicited junk emails sent indiscriminately, when they received various kinds of emails in the everyday life. An experimental survey was designed to manipulate two variables, decision-making strategy (intuitive or rational decision) and information availability (limited or detailed information), and administrated via a professional survey website PsycData to 171 college students. It was found that (a) rational decision strategy outperformed intuitive decision strategy, (b) better decision was made with detailed information than with limited information, (c) the effect size of information availability was approximately ten times as large as that of decision-making strategy, and (d) no interaction effects was present between decision-making strategy and information availability. Practical implications are discussed.

Keywords: Decision-Making Strategy, Experimental Survey, Information Availability, Internet Safety, Online Decision-Making

INTRODUCTION

Emails are particularly useful for daily communications and social interactions (Judd & Kennedy, 2010; Phillips & Reddie, 2008; Sheer & Fung, 2007) and have become one of the fastest and most convenient communicational methods (NSF, 2010). However, frequently through billions of spam emails received by email users in the world every day, emails have been found to be particularly harmful, including cyber-bullying and cyber-harassment (Beran & Li, 2005; Cassidy, Jackson, & Brown, 2009), identity theft (Lynch, 2005), and online viruses (Shih & Chiang, 2004). As the Internet version of junk mails, spam emails generally refers to various kinds of unsolicited bulk email messages sent indiscriminately to email users and account for more than 50% of total inbound email messages (M86 Security, 2011; Mehta, Atreja, & Jain, 2008). Thus, to better understand how email users should protect themselves from pervasive harmful emails while they fully enjoy using emails for beneficial communications and interactions, it is important to empirically examine how email users would make decisions

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(e.g., whether one should make a intuitively or analytic decision to read or delete an email) when they receive spam emails. More generally, given that decision-making in the real world has been extensively studied but decision-making in the cyber world is relatively unknown, theoretically, studies on email decision making will add new knowledge of online decision-making and enhance current understanding of real-world decision making. Considering the increasing challenges of Internet safety and the increasing literature on attitudes and behaviors of Internet safety, practically, this line of research will inform Internet users how to make safe decisions besides how to foster safe attitudes and perform safe behaviors.

**Decision-Making Strategy**

Human beings are generally considered to use two major types of decision-making strategies, intuitive thinking and rational thinking (De Neys, 2006; Epstein, 1994; Kahneman, 2003; Osman, 2004). Intuitive thinking is associative, involves little apparent effort and conscious deliberation, and mostly is associated with emotions and past experience (Böhm & Brun, 2008; Hogarth, 2001; Sloman, 1996). On the other hand, rational thinking is slow, effortful, rule-based, and deliberately controlled, involving logical, hierarchical, and causal-mechanical processes (Epstein, Pacini, Denes-Raj, & Heier, 1996; Evans, 2008; Sloman, 1996).

Extensive literature exists examining the nature of intuitive and rational decision, documenting inconsistent findings (Nisbett, Krantz, Jepson, & Kunda, 1983; Pachur & Hertwig, 2006; Tversky & Kahneman, 1973, 1983). Kahneman (2003) indicates that people’s tendency of using intuitive or rational thinking is determined by characteristics of both different underlying cognitive mechanisms and various events in context. In daily life, people are likely to rely on intuition rather than rational decisions (Epstein et al., 1996) since rational thinking requires more mental efforts while intuitive thinking comes to mind easily whereas rational thinking requires more effort and take a longer time (Kahneman, 2003). Due to easy accessibility, people tend to produce intuitive thinking under time pressure (Kahneman, 2003; Rice, Keller, Trafimow, & Sandry, 2010) and think analytically when they are forced to do so (Schul & Mayo, 2003). Because working memory capacity is limited, people’s cognitive functioning is disrupted by the cognitive overload when they deal with multiple tasks that require rational thinking (Kahneman, 2003). In contrast, some researchers indicate that intuitive thinking is more advantageous to deal with multiple tasks at once it requires less time and effort (Bahr & Ford, 2011; Evans, 2008; Hogarth, 2001; Kahneman, 2003). In clinical decisions involving multiple tasks, for instance, intuitive thinking is useful in order to protect patients (Naumberg, 2010). Moreover, people would be happier with their decisions when they had made them intuitively (Wilson & Schooler, 1991). For that reason, people make intuitive decisions for their private issues rather than non-personal issues (Sjoberg, 2003). Tversky and Kahneman (1974), on the other hand, suggest that intuitive thinking often relies on heuristics principles and may therefore lead people to make errors. In line with Tversky and Kahneman (1974) and Masip, Garrido, and Herrero (2006, 2009) advocate that rational thinking is more successful at making accurate decisions since people have more time to think analytically and to find more reasons to detect deception. These inconsistent findings suggest complex processes involving in using decision-making strategies and invite further empirical research.

**Information Availability**

Information availability refers to whether one has limited or detailed information for decision-making. It has been found to be influential on decision-making processes, however, inconsistent evidence exist regarding effects of information availability on intuitive and rational thinking (Gigerenzer & Brighton, 2009; Goldstein & Gigerenzer, 2002; Gigerenzer & Goldstein, 1996; Pachur & Biele, 2007; Shafir, 1993).
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