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COMPARING ONLINE CONSUMERS' BRAIN IMAGES IN DIFFERENT PURCHASING-DECISION PROCESSES

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ABSTRACT

Since 1991 researchers from different disciplines have begun using functional magnetic resonance imaging (fMRI) to explore the brain which influences behavioral economics and controls positive and negative emotions that influence financial decisions. fMRI uses the blood-oxygen-level dependent (BOLD) contrast to determine different levels of neural activities. Prior studies have used fMRI to investigate the brain's neurons for predicting consumers' behavior. The results consistently show that product preference correlates with activation of the nucleus accumbens (NAcc), while the medial prefrontal cortex (MPFC) activates according to price differential. Reportedly, NAcc has involvement in producing an appropriate behavioral response in risky or disadvantageous situations. In addition, greater activity in the insula associates with non-purchases. The BOLD signal in NAcc, MPFC, and insula are, apparently, strongly predictive of the decision to purchase. In addition, prior studies of brain imaging related to brands have significant impact. Specifically, the ventromedial prefrontal cortex (VMPFC), hippocampus, dorsolateral prefrontal cortex (DLPFC), and midbrain can predict preferences for branded products. However, the location of activated neurons in different areas of the brain due to online consumers' perspectives for different brands of used products (or second-hand products, SHPs) remains unknown. Thus, the purpose of this study is to verify the activated neurons when decision-making occurs during consumers' participation in online auctions to determine perspective toward brands when purchasing second-hand products (SHPs) and new products. This study recruited 12 participants to enter the fMRI experiment which contains 80 images, including 40 SHPs and new products and 40 brand and non-branded products for making purchasing and/or non-purchasing decisions. Before the experiment, a short survey assists determining the participants' brand perspectives. As result, this study finds activation of the medial prefrontal cortex (MPFC) is significantly different when online consumers purchase SHPs as compared to purchasing new products. Further, purchasing SHPs apparently correlate with activation of the insula. Also, the consumers' dorsolateral prefrontal cortex (DLPFC) activates significantly during online purchasing of branded products. However, ventromedial prefrontal cortex (VMPFC) displayed insignificant activation due to consumers' preferences for certain brands. This study has provided both theoretical and practical implications. This study's results are also critically useful for brand management.

Keywords: Online consumer decision, brand perspectives, second-hand products (SHP), functional magnetic resonance imaging (fMRI)

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