

Investigating the Editing's Effect of Advertising Photos on the Virtual Purchase Decision Based on the Quantitative Electroencephalogram (EEG) Parameters

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Abstract : Decision-making is an important cognitive function that can be defined as the process of choosing an option among available options to achieve a specific goal. Consumer 'need' is the main reason for purchasing decisions. Human decision-making while buying products online is subject to various factors, one of which is the quality and effect of advertising photos. Advertising photo editing can have a significant impact on people's virtual purchase decisions. This technique helps improve the quality and overall appearance of photos by adjusting various aspects such as brightness, contrast, colors, cropping, resizing, and adding filters. This study, by examining the effect of editing advertising photos on the virtual purchase decision using EEG data, tries to investigate the effect of edited images on the decision-making of customers. A group of 30 participants were asked to react to 24 edited and unedited images while their EEG was recorded. Analysis of the EEG data revealed increased alpha wave activity in the occipital regions (O1, O2) for both edited and unedited images, which is related to visual processing and attention. Additionally, there was an increase in beta wave activity in the frontal regions (FP1, FP2, F4, F8) when participants viewed edited images, suggesting involvement in cognitive processes such as decision-making and evaluating advertising content. Gamma wave activity also increased in various regions, especially the frontal and parietal regions, which are associated with higher cognitive functions, such as attention, memory, and perception, when viewing the edited images. While the visual processing reflected by alpha waves remained consistent across different visual conditions, editing advertising photos appeared to boost neural activity in frontal and parietal regions associated with decision-making processes. These Findings suggest that photo editing could potentially influence consumer perceptions during virtual shopping experiences by modulating brain activity related to product assessment and purchase decisions.

Keywords : virtual purchase decision, advertising photo, EEG parameters, decision Making

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