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Converging Neuroscience and Technology: A Review of Neuromarketing Trends and Challenges

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Abstract

This review seeks to examine how converging field technologies have influenced the practice of neuromarketing and, especially, its usefulness in understanding and improving marketing. Using an extensive literature review and keyword cluster mapping, this study aims to map important trends, challenges, and growth areas in marketing. The article includes an analysis over the last 5 years of publications, countries and keyword groups that discuss the application of EEG, fMRI, AI and machine learning technologies. The results point to the emerging use of neuroscience in marketing applications and further indicate that emotions and cognitive processes influence consumer decision making. The analysis of these groups also revealed that neuroimaging, AI and behavioral integration have gradually transformed marketing practices. Countries with significant neuromarketing publications were noted, in addition to the increase in positions between 2020 and 2023. Some of the main current concerns also emerged, especially those referring to the impact of AI and neuroimaging tools on ethical and privacy issues. In conclusion, neuromarketing is undoubtedly one of the most advanced and promising approaches to better understand consumer needs and tailor such marketing communications to our benefit.

Keywords: advertising; consumer insights; decision-making; EEG (electroencephalography); machine learning