Balancing Presence and Load: Perceived Spatial Presence and Extraneous Cognitive Load in AR Advertising

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This study investigates how augmented reality (AR) advertising affects brand attitude through perceived spatial presence and extraneous cognitive load (ECL). In a between-subjects online experiment (N = 132), participants viewed an advertisement for a fictitious furniture brand either in AR or as a conventional 2D video. AR increased perceived spatial presence and ECL relative to 2D. Higher spatial presence was associated with more favorable brand attitudes and mediated a positive indirect effect of AR on brand attitude. In contrast, ECL did not predict brand attitude, and its indirect pathway was not significant. Overall, brand attitude did not differ between AR and 2D, suggesting that presence-related benefits were offset by technology-related frictions. The findings extend Breves' (2023) four-step model by jointly testing presence and ECL in an AR advertising context and highlight the importance of maximizing presence while minimizing avoidable cognitive demands in AR ad design.

Keywords: AR, spatial presence, ECL