# 41. Visualizing Choices: Assessing Augmented Reality's Influence on Choice Difficulty across Maximizers and Satisficers

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**Extended abstract**

**Introduction**
Retailers are increasingly turning their attention to augmented reality (AR) to provide new virtual product experiences for consumers. Despite practical and academic interest in the technology, AR's potential to reduce choice difficulty remains largely unexplored. Drawing on the direct experience spectrum (Mooy & Robben, 2002) and the Integrated Information Response Model (Smith & Swinyard, 1982), this article explores how virtual product experiences, including visually dynamic and static AR, impact choice difficulty. It examines their comparison and complementarity with more indirect product experiences like physical product swatches, and considers the role of mental imagery in this process. Moreover, it is unclear how choice difficulty affects purchase intention across different consumer segments, as individuals vary in decision-making styles (Schwartz et al., 2002). This article aims to fill these gaps through two experiments.

**Conceptual models and hypotheses**
Based on relevant previous research the following question and hypotheses are proposed for study 1 and 2 (see Figures 1-2):

- H1: Exposure to visually dynamic and static AR apps will result in less choice difficulty (a) and will elicit more mental imagery (b) than physical product swatches.
- RQ1: Is there a difference between visually dynamic and static AR regarding choice difficulty (a) and mental imagery (b)?
- H2: Mental imagery will decrease choice difficulty.
- H3: Choice difficulty will decrease choice confidence (a) and mental imagery will increase choice confidence (b).
- H4: Choice confidence will increase purchase intention.
- H5: Only for maximizers and not for satisficers, choice difficulty will decrease purchase intention.
- H6: Sequential exposure to physical product swatches and visually dynamic AR will reduce choice difficulty, compared to exposure solely to physical product swatches (a) or dynamic AR (b).

- H7: Sequential exposure to physical product swatches and visually static AR will reduce choice difficulty, compared to exposure solely to physical product swatches (a) or static AR (b).

**Figure 1.** Proposed conceptual model study 1

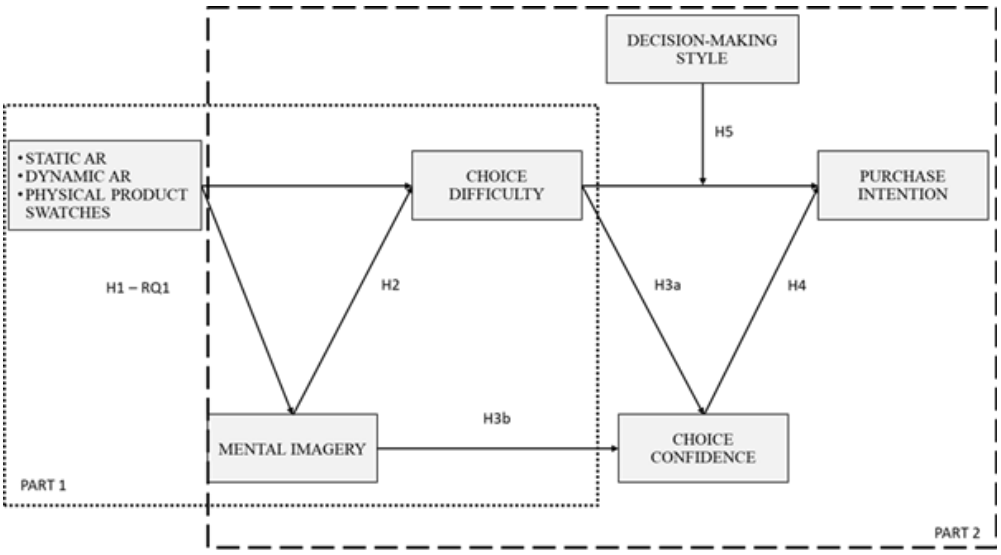
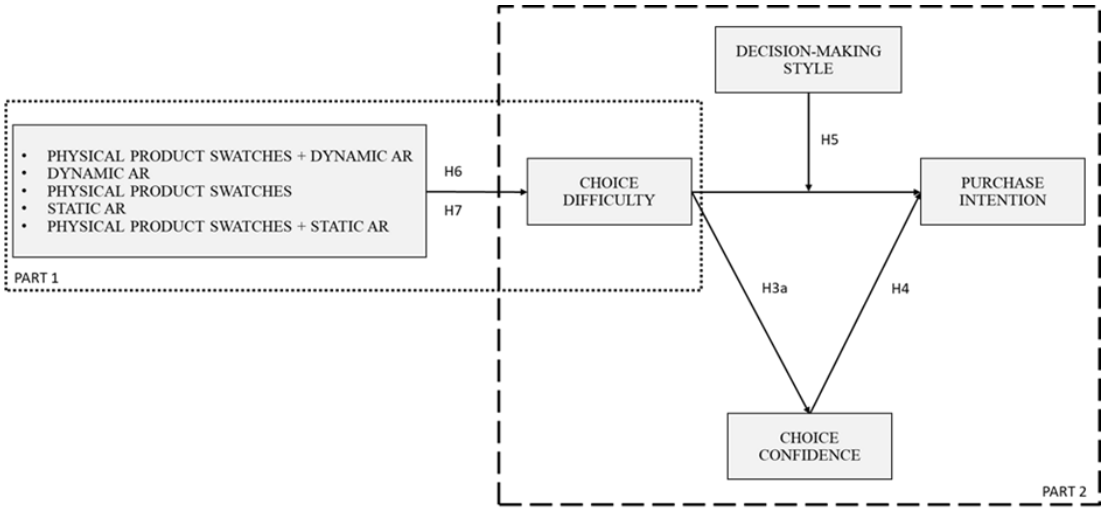



**Figure 2.** Proposed conceptual model study 2




## Method

Study 1 adopts a 3x1 between-subjects experimental design, focusing on paint selection for a student dorm. 214 first-year bachelor students ($M_{age}$=18.94; SD=1.35; 49.5% women) were individually placed in a simulated dorm room and randomly assigned to one of three conditions: (1) choosing a color using Levis's paint swatches; (2) selecting a color using the Levis Visualizer mobile application with static AR, allowing limited adjustments solely to an image of the dorm's wall; or (3) choosing a color using the Levis Visualizer application with dynamic AR, enabling direct visualization of paint colors, live on the dorm's wall. After color selection, participants completed a survey with questions on dependent and moderating variables, and demographics.

Study 2 employs a 5x1 between-subjects experimental design, mirroring study 2. Data from study 1 (n=214) was included in this study and supplemented with additional data

(n=127). The additional 127 participants (first-year bachelor students; $M_{age}$=19.08; SD=1.60; 52.5% female) were randomly assigned to one of two conditions: choosing a color utilizing Levis's paint swatches, and subsequently, (re)selecting a color using the Levis Visualizer application (1) with static AR, or (2) with dynamic AR. Next, participants completed a survey that included dependent and moderating variables, and demographics.

**Results**

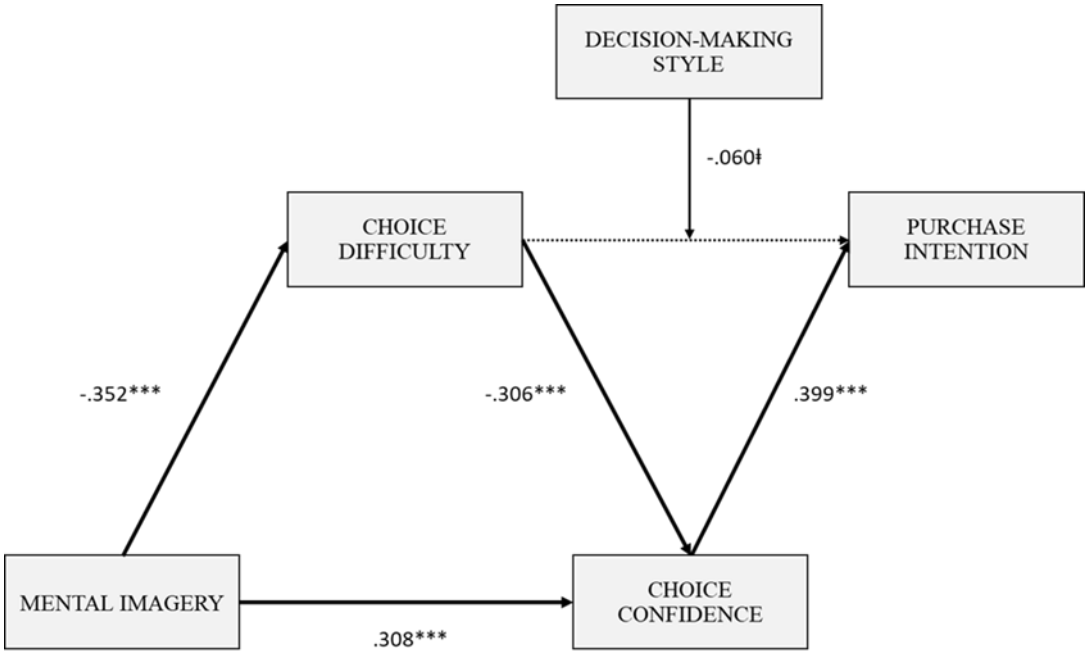
*Study 1*

MANOVA analysis (H1) showed a significant main effect (Wilks' lambda=.880; F(4,420)=6.931; p<.001). Subsequent univariate analyses showed no significant main effect of product presentation type on choice difficulty (F(2,211)=2.04; p=.133; rejecting H1a), but a significant main effect for mental imagery was observed (F(2,211)=13.555; p<.001). Post-hoc analyses revealed partial support for H1b, showing that respondents who used static AR ($M_{static}$=5.50; SD=.88) experienced more mental imagery than respondents who used swatches ($M_{swatches}$=4.70; SD=1.05) or dynamic AR ($M_{dynamic}$=4.82; SD=1.04; both p<.001). Regarding H2-H5, a customized model was calculated, making use of the SPSS PROCESS Macro (Hayes, 2022; 5000 samples; 95%CI, mean-centered variables for interaction effects) was used. Each of the paths was statistically significant, supporting all hypothesized paths and directions (see Figure 3).

*Study 2*

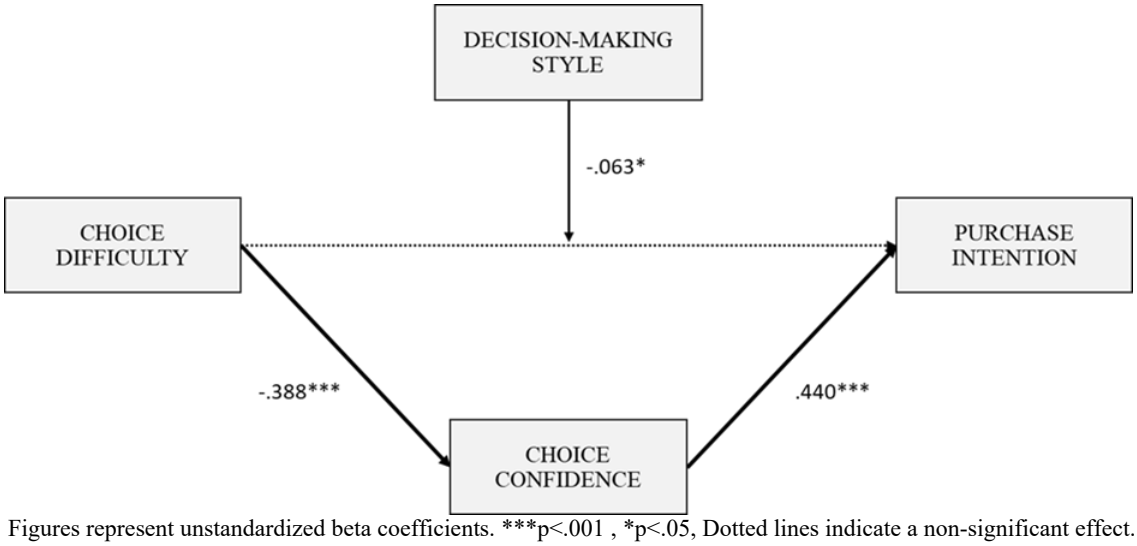
ANOVA analysis (H6 & H7) showed a significant main effect of product presentation type on choice difficulty (F(4,336)=2.691; p=.031). Concerning H6, subsequent LSD post-hoc analyses unveiled a difference in choice difficulty between swatches + dynamic AR versus only swatches (p=.067, supporting H6a), but no difference between swatches + dynamic AR compared to only dynamic AR (p=.566, not supporting H6b). Regarding H7, LSD post-hoc analyses showed a significant difference in choice difficulty between swatches + static AR and only swatches (p=.002), supporting H7a. However, there was no significant difference in choice difficulty between swatches + static AR and only static AR (p=.196), not supporting H7b. H3a, H4 & H5 were measured similar to study 1. In line with the results of study 1, each of the paths was statistically significant, supporting all hypothesized paths and directions (see Figure 4).

**Figure 3.** Results study 1




*Note*: Figures represent unstandardized beta coefficients. ***p<.001 , ł p=.100, Dotted lines indicate a non-significant effect. Arrows in bold indicate mediation.

**Figure 4.** Results study 2




Figures represent unstandardized beta coefficients. ***p<.001 , *p<.05, Dotted lines indicate a non-significant effect. Arrows in bold indicate mediation.

**Originality**

Across the two studies, we contribute to AR-focused marketing research in multiple ways:

- To our knowledge, this article is the first to empirically test the effect of AR applications on choice difficulty.
- We provide empirical evidence that mental imagery is key in reducing choice difficulty. Doing so, this study provides previous studies' conceptual conjectures (Barta et al., 2023).
- The need to investigate additional consumer characteristics in AR-research has been raised (Hilken et al., 2022). Therefore, we consider decision-making style and provide evidence for a moderating effect on the extent that choice difficulty reduces purchase intention.
- We compared multiple virtual product experiences, specifically distinguishing between static and dynamic AR, highlighting that not all types of AR have the same effect on decision-making.

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