

FROM MEDIA RICHNESS TO PURCHASE INTENTION: THE IMPACT OF PRODUCT VIDEOS ON MENTAL PROCESSES AND DECISION-MAKING IN E-COMMERCE

Author: Klara Hochreiner, BA | Supervisor: Michael Hollaus, BA MA

01 ABSTRACT

This study investigates how product videos in e-commerce influence purchase intentions through two cognitive mechanisms: mental imagery and perceived diagnosticity. Using a structural equation model (PLS-SEM) with data from 142 participants, the results show that media richness significantly enhances both mechanisms, but only mental imagery has a direct effect on purchase intent. Product complexity does not moderate these relationships.

02 BACKGROUND

With the growth of online shopping, the lack of physical product interaction has become a critical limitation. Rich media formats - particularly product videos - aim to compensate for this by providing visual and contextual information that supports consumers' decision-making. Previous research has highlighted the individual roles of mental imagery and diagnosticity in influencing purchase behavior. Mental imagery enhances emotional involvement and facilitates the mental simulation of product use, while diagnosticity helps consumers assess credibility and informativeness. However, these constructs have rarely been analyzed together within a single theoretical model, and the role of product complexity remains insufficiently explored.

03 OBJECTIVES

Despite their widespread use in digital retail, the psychological mechanisms behind the effectiveness of product videos are not yet fully understood. Most existing studies isolate either mental imagery or diagnosticity and fail to consider how they jointly influence consumer behavior. Moreover, it remains unclear whether perceived product complexity strengthens or weakens these effects. The objective of this research is to develop and test an integrated model that examines how media richness influences both mental imagery and diagnosticity, and how these, in turn, affect purchase intention. The study also tests whether perceived product complexity moderates these relationships.

04 RESEARCH QUESTIONS & HYPOTHESES

Central Research Question

How does media richness influence mental imagery, perceived diagnosticity, and purchase intention in e-commerce?

Sub-Question

To what extent does perceived product complexity alter these effects?

H1 Media richness positively influences mental imagery.

H2 Media richness positively influences perceived diagnosticity.

H3 Mental imagery positively influences purchase intention.

H4 Perceived diagnosticity positively influences purchase intention.

H5a The perceived complexity of a product positively moderates the effect of media richness on mental imagery.

H5b The perceived complexity of a product positively moderates the effect of media richness on perceived diagnosticity.

H5c The perceived complexity of a product positively moderates the effect of mental imagery on purchase intention.

H5d The perceived complexity of a product positively moderates the effect of perceived diagnosticity on purchase intention.

H6 Media richness directly influences purchase intention.

05 METHODOLOGY

A quantitative, stimulus-based experiment was conducted with 142 participants. Each participant completed an online questionnaire that began with a 54-second professional product video featuring the Sony WH-1000XM4 headphones. The video was selected for its high degree of media richness, combining visual, textual, and auditory cues. Following the video, participants responded to a structured set of items measuring perceived media richness, mental imagery, diagnosticity, product complexity, and purchase intention. All constructs were assessed using validated 7-point Likert scales. The questionnaire was pretested and refined to ensure clarity and reliability of the items.

06 ANALYSIS

Descriptive statistics were used to examine the sample characteristics and assess data quality. The proposed structural model was tested using Partial Least Squares Structural Equation Modeling (PLS-SEM). All latent constructs were evaluated for reliability and validity prior to model estimation. Path coefficients, effect sizes, and explained variance (R^2) were calculated to assess the strength of relationships. To test for moderating effects of perceived product complexity, interaction terms were included in the structural model. Statistical significance of all effects was determined using a bootstrapping procedure with 500 resamples.

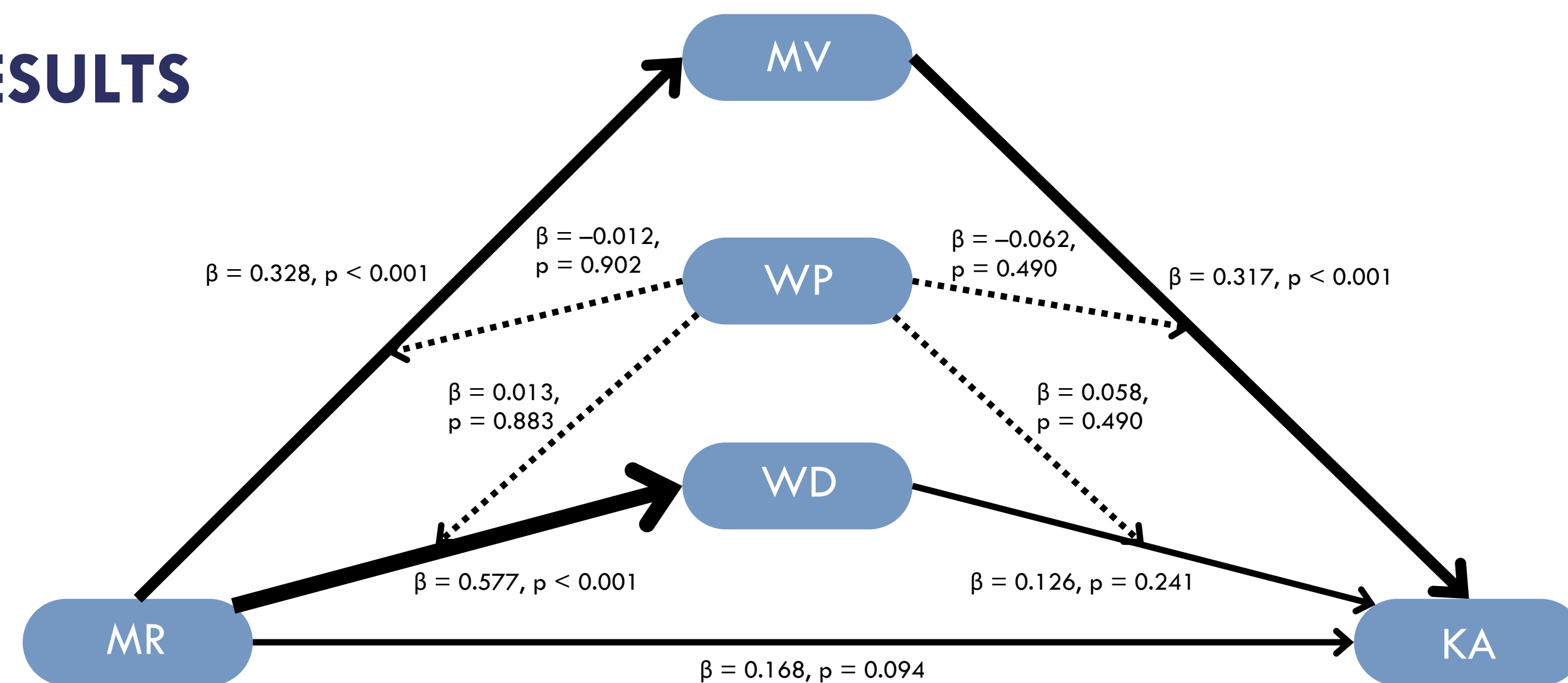
Questionnaire Development

Online Survey

Data Processing & Cleaning

Statistical Analysis (PLS-SEM)

07 RESULTS



All latent constructs demonstrated acceptable levels of reliability and validity. Indicator loadings exceeded 0.70 for the majority of items, composite reliability values ranged from 0.84 to 0.93, and average variance extracted (AVE) values were above the 0.50 threshold, supporting convergent validity. These results indicate that the measurement model was robust and suitable for structural analysis.

The structural model confirmed several hypothesized relationships. Media richness significantly increased mental imagery ($\beta = 0.328, p < 0.001$) and perceived diagnosticity ($\beta = 0.577, p < 0.001$). Mental imagery in turn had a significant positive effect on purchase intention ($\beta = 0.317, p < 0.001$), whereas diagnosticity did not significantly influence purchase decisions ($\beta = 0.126, p = 0.241$). The direct effect of media richness on purchase intention was not statistically significant ($\beta = 0.168, p = 0.094$).

Moderation hypotheses (H5a–H5d) were not supported. None of the interaction terms involving perceived product complexity showed significant effects (e.g., $WP \times MR \rightarrow MV: \beta = -0.012, p = 0.902$).

Explained variance was moderate: $R^2 = 0.134$ for mental imagery, $R^2 = 0.378$ for diagnosticity, and $R^2 = 0.253$ for purchase intention, indicating the model accounts for a relevant share of variance in the key outcome variables.

08 DISCUSSION & IMPLICATIONS

This study confirms that media richness in product videos enhances mental imagery and diagnosticity, but only mental imagery significantly drives purchase intention. This suggests that rich media content is most effective when it stimulates consumers' imagination, allowing them to mentally simulate product use. Merely providing factual or diagnostic information, even if perceived as credible, does not suffice to influence purchase behavior. Theoretically, the findings support key assumptions of Media Richness Theory and Dual Coding Theory, but also reveal an asymmetry: Imagery-based processing has a stronger behavioral impact than cognitive evaluation alone. This highlights the importance of emotional and experiential cognition in digital consumer decision-making. Practically, e-commerce platforms and marketers should focus on designing product videos that emphasize usage scenarios, emotional engagement, and visual storytelling—rather than overloading viewers with factual data. Features that enhance visualization (e.g., 3D views, contextual demonstrations) are likely to increase effectiveness, especially for high-involvement products. Contrary to expectations, product complexity did not moderate any effects, suggesting that rich media benefits are robust across product types. Thus, investing in high-quality video content appears useful regardless of how complex a product is perceived.

09 CONCLUSION

This study confirms that mental imagery is a key mechanism linking media-rich product videos to purchase intention. While media richness significantly increases both mental imagery and diagnosticity, only mental imagery has a behavioral impact. This suggests that product videos are most effective when they stimulate internal visualization, rather than just conveying information. No significant moderating effect of perceived product complexity was found, indicating that these effects are robust across product types. However, the findings must be interpreted with caution. The study used a single product video stimulus and a non-random sample of 142 participants, which limits generalizability. All constructs were measured via self-report in a cross-sectional design, increasing the risk of common method bias. Moreover, the stimulus lacked variation in narrative or sensory intensity, which may have constrained the observed effects.

CONTACT

Klara Hochreiner, BA
Polgarweg 1a/12
4030 Linz

klarahochreiner@gmail.com
+43 660 7076047

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