

Effects of Artificial Intelligence on Consumer Engagement: AI-Embedded Mixed Reality Storytelling in a Retail Multiplex

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1. Introduction

The Purpose of Study 1 & 2

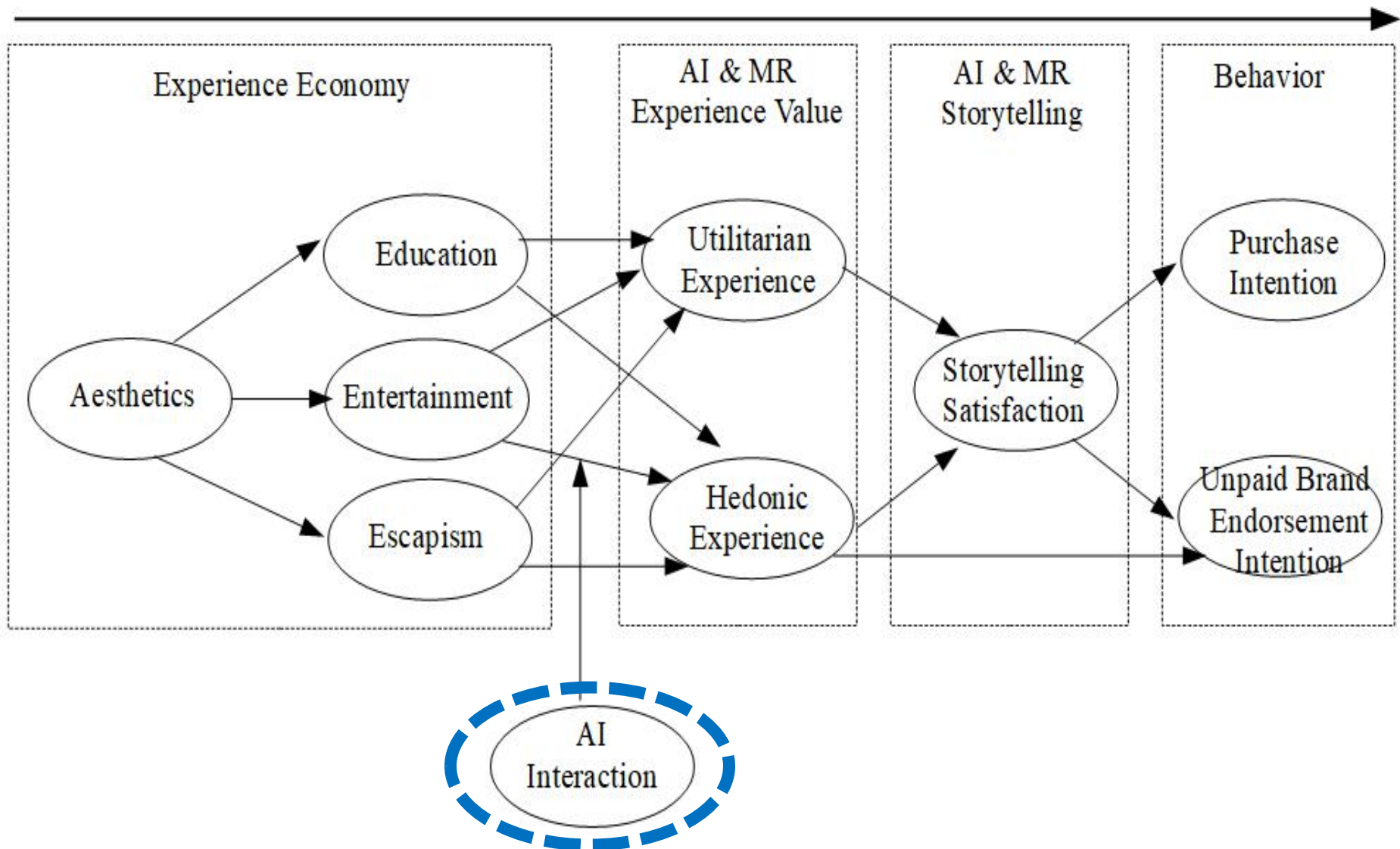
To investigate the effects of Artificial Intelligence (AI) on consumer response in the Mixed Reality (MR) retail multiplex.

- ❖ Study 1 ($N = 242$): To examine a moderating effect of AI on storytelling marketing and consumer response by applying the Experience Economy framework
- ❖ Study 2 ($N = 322$): To investigate the antecedent effect of AI on consumer engagement and response in the S-O-R framework

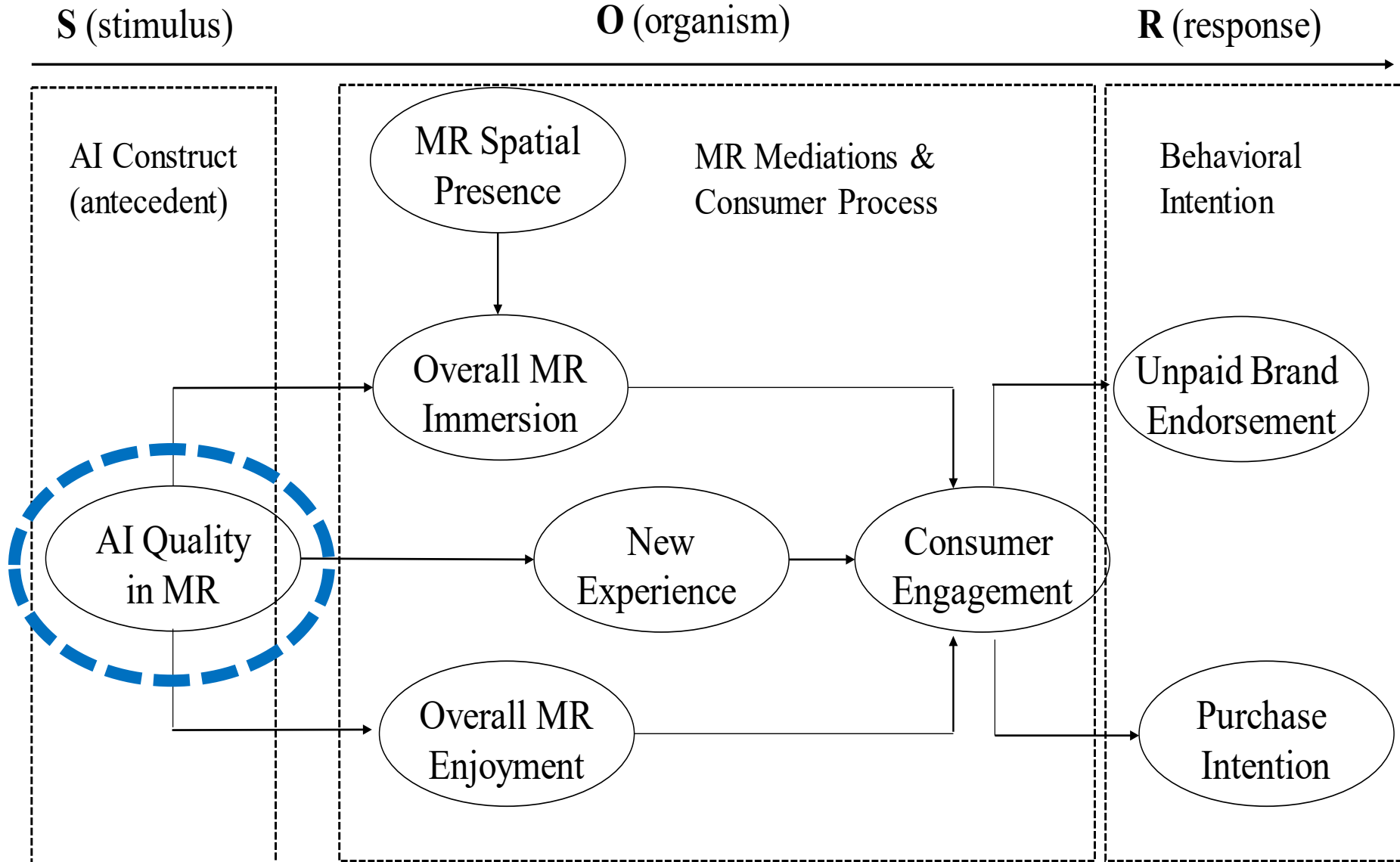
Study 1: N = 242 (AI moderation effect)

AI & Mixed Reality Experience

AI & Mixed Reality Consumer Response



Study 2: N = 322 (AI antecedent effect)



AI-Embedded MR

Once I (Christine) started speaking, the AI popped up in virtual reality (MR).

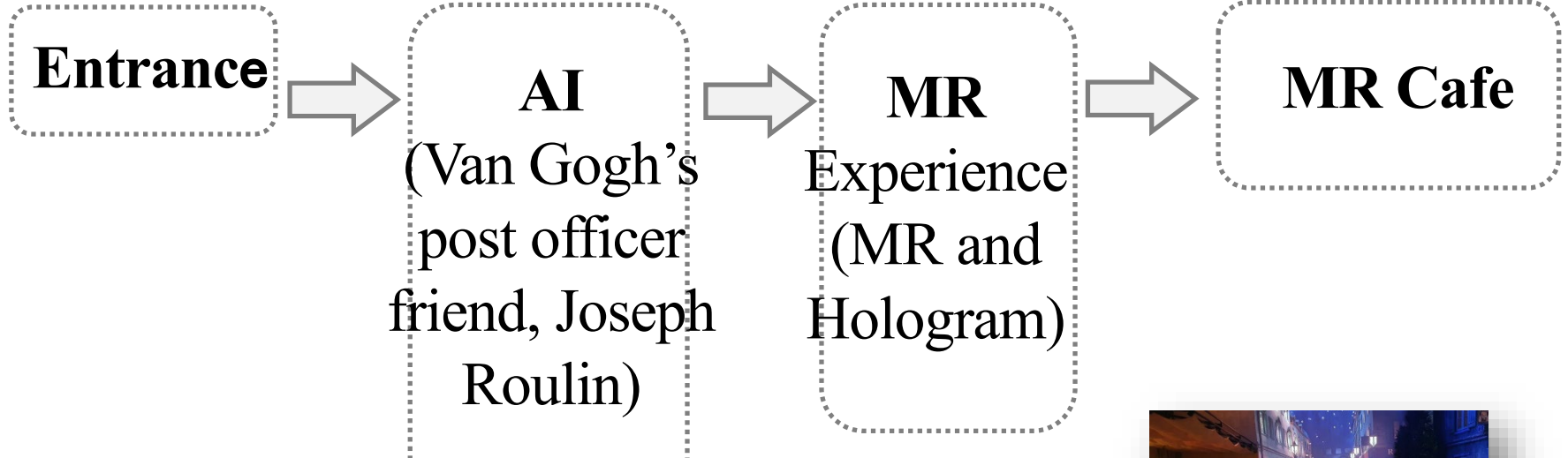
AI Decoded what I said →
Synthesized it and responded it to consumers.

2D becomes 3D.

→ Play the video

Antecedent: AI

Mixed Reality in L'atelier



Antecedent: Spatial Presence

Feeling of being in a different place





2. Literature Review

- ❑ AI: Artificial Intelligence
- ❑ MR: Mixed Reality (*Augmented and Virtual Realities*)
- ❑ Experience Economy Theory
- ❑ Storytelling Marketing

Theories

❖ Experience Economy Theory

Four experience elements: 1) entertainment, 2) education, 3) esthetics, and 4) escapism experiences (Pine & Gilmore, 1988)

❖ AI (Artificial Intelligence): “Algorithms, systems, and machines that demonstrate intelligence” (Shankar 2018, p.vi)

❖ MR (Mixed Reality):

❑ A melded technology between virtual reality and augmented reality (Chuah 2019).

❑ A seamless connection between the digital virtual world and the real world (Farshid et al. 2018; Flavián, Ibáñez-Sánchez, and Orús 2019)

❖ Storytelling Marketing: Narrating a story can trigger cognitive and emotional processes (Holt and Thompson 2004).



3. Method

Method

❖ Study 1 & Study 2

❑ Collected data at L'atelier, a \$17 million **MR retail multiplex**, Seoul, South Korea

❑ The multiplex **offers:**

- Advanced technology entertainment (e.g., AI, MR, hologram) for retail shopping (**street food/snacks**, vintage market, **boutique shop**),

including

- Impressionist paintings and art,
- MR musical and hologram talk show,
- MR Media art show, and
- Virtual and physical with **MR** 19th-century European cities/cafés where famous artists used to live and eat.



Method

- ❑ Collected data at L'atelier, a \$17 million **MR retail multiplex**, Seoul, South Korea
- ❑ Collected by a marketing research company with the cooperation of the multiplex staff & employees

Study 1 | Study 2

- ❑ 206 out of 242 participants usable | 251 of out of 322
- ❑ 68% female | 66.5% female
- ❑ Age range between 19 and 64 years (M = 32 years) |
Age percentage: 20s (47%), 30s (39%)
- ❑ 68% current university student, univ. degree | 72%



Data Analysis

PLS-SEM

PLS-SEM Approach (partial least squares-structural equation modeling)

1) when the analysis is testing a **theoretical framework** from a prediction perspective (complex model)

❖ **Acceptable sample size**

“10 times the largest number of structural paths [should be] directed at a particular construct in the structural model “

(Hair et al., 2017, p. 24)

Measurement & PLS-SEM model fits

Convergent and discriminant validities: Table (Next page)

❖ Convergent validity

All factor loadings & CRs ($> .90$)

Each indicator fell into each expected latent construct and factor-loadings ($p < .05$) (Anderson & Gerbing, 1988)

❖ Discriminant validity

-AVE: between .729 and .980 indicating that all constructs were *greater than squared correlations between constructs* (Fornell & Larcker, 1981)

-Heterotrait-monotrait (HTMT) less than .85 (cut-off)

❖ PLS-SEM model fit

SRMR = .049 (Study 1) to .061 (Study 2) (cut-off = .08)

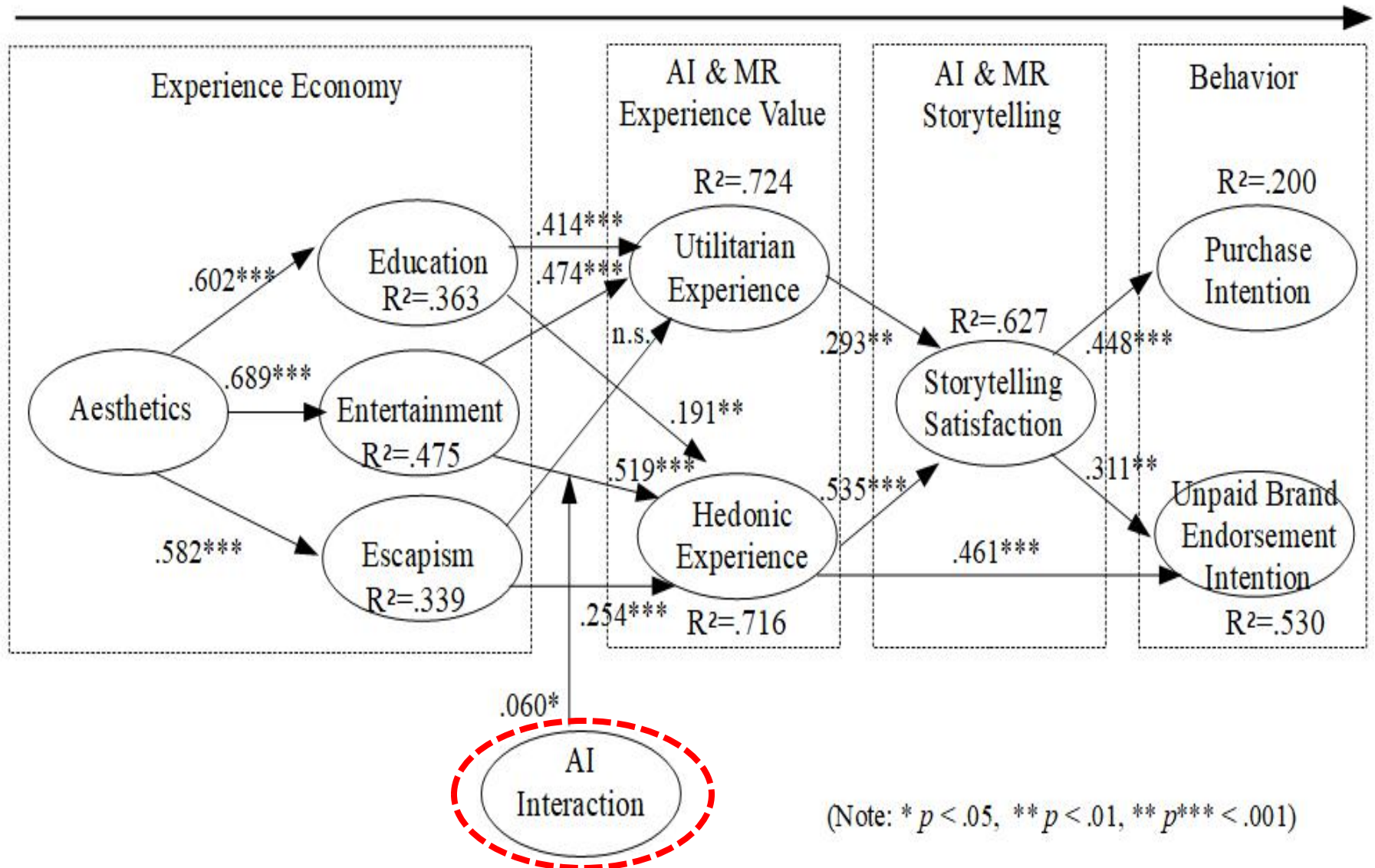
❖ Bootstrapping: 5,000 re-samples to estimate the model

Final Items	Factor Loading	CR	AVE
Esthetics			
The L'atelier design was very attractive.	.837		
The L'atelier design was very lively.	.842	.923	.749
The L'atelier design was good.	.920		
I felt a real sense of harmony from the L'atelier design.	.862		
Education	.915		
I learned something new about the content (e.g., impressionists, Paints) during the L'atelier experience.	.944	.946	.813
The L'atelier experience made me more knowledgeable about the content (e.g., impressionists, paints).	.922		
The L'atelier experience helped me learn about the content (e.g., impressionists, paints).	.822		
The L'atelier experience stimulated my curiosity to learn the content (e.g., impressionists, paints).	.914		
	.949	.963	.867
Entertainment	.937		
The L'atelier experience was amusing.	.925		
The L'atelier experience was entertaining.			
The L'atelier experience was fun.	.915		
The L'atelier experience was interesting.	.840		

Results of Study 1

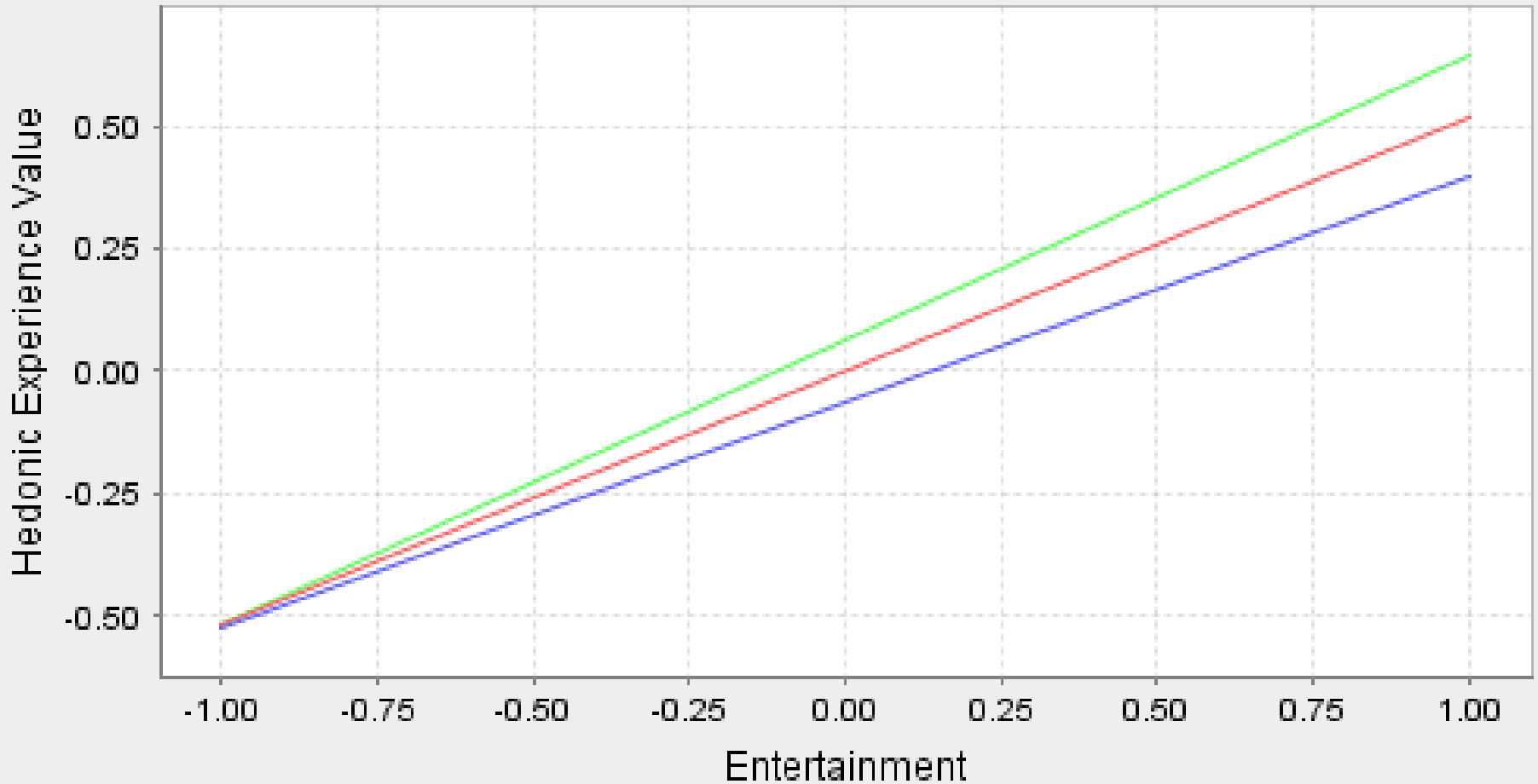
AI & Mixed Reality Experience

AI & Mixed Reality Consumer Response



AI Moderating Results in Detail

Moderating Effect



— AI at -1 SD — AI at Mean — AI at +1 SD

Managerial Implication 1

Study 1: AI opens up avenues for personalized and immersive retail experiences.

- ❖ **Marketers** can apply this technology for providing hedonic or fun experience for consumer engagement.
- ❖ **AI moderation:** Consumers who have high AI interaction perceive retailing experience as high hedonic value compared to consumers in the low AI interaction in the further analysis.

Study 2: AI quality does matter for consumer response in the AI-embedded MR multiplex environment.

- ❖ **AI Antecedent:** Marketers need to make a continuous effort to improve quality of AI speech recognition and synthesis.

Conclusion: The **entertaining** purpose of **AI can eventually** generate purchase and unpaid brand endorsement intentions.

Managerial Implication 2

Study 1:

- Esthetics element before the rest of three elements of Experience Economy
- The education experience affects both utilitarian and hedonic *experience* values; learning (e.g., obtaining product info.) can also be enjoyable.
- AI-embedded MR systems are suitable as an entertaining intervention to satisfy utilitarian and hedonic needs leading storytelling satisfaction.

Practitioners designing for education experiences (*e.g., brand education*) need to consider 1) both utilitarian and hedonic factors to help consumers enjoy learning; 2) a purpose-driven design in retail environments.

Study 2: MR immersion in the retail multiplex is influenced by AI quality and spatial presence leading to consumer engagement.

Acknowledgement

Study 1:

Funded by Montana State University (USA) with additional funding generously provided by L'atelier (company)

Study 2:

Funded by KyungHee University, Korea

Question: The Coffee Zoom Room is open between
3:15 PM – 4:15 PM

<https://conferences.fuqua.duke.edu/isms/saturday-coffee-chats/>

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