

Original Article

The Future of Online Beauty Retail: The Effectiveness of Augmented Reality Technology in Influencing Psychological Reaction and Behavioral Intention

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Abstract: Augmented Reality (AR) technology has been adopted by companies as a marketing tool to produce immersive experiences during a pre-purchase stage in the retail industry. This research investigates the relationships between AR experiential features and customers' WOM intention by utilizing the Stimulus-Organism-Responses (SOR) theory. This research also investigates how AR features (interactivity and aesthetic quality) may impact the affective states of the customers in inducing the emotions of pleasure and arousal based on the Pleasure-Arousal-Dominance (PAD) model, which will, in turn, drive a higher degree of WOM intention. The results of this study, which employed the PLS-SEM method, indicate the same interactivity and aesthetic quality influence pleasure and arousal positively. Pleasure and arousal are also confirmed to enhance WOM intention. This research also finds that pleasure and arousal play mediating roles in the relationships between AR features and WOM intention.

Keywords: Augmented Reality Marketing, PAD Model, WOM Intention.

I. INTRODUCTION

Accelerated by the change in the COVID-19 pandemic has caused changes in consumer purchasing habits. Online retail sales have experienced a sharp increase from US\$ 360 billion in 2021 to US\$ 431,3 billion (Baluch, 2023). The COVID-19 pandemic, which introduced partial and total lockdowns worldwide, compelled customers to opt for online shopping. Hence, more customers have shifted from conventional brick-and-mortar stores to online commerce (Pantelimon et al., 2020). This trend will also likely continue in the post-pandemic world (Shen et al., 2022). However, retailers have to create an enjoyable experience in online shopping to anticipate the possibility of decreasing the volume of online shopping as governments start to relax the restrictions. Retailers must retain their online customers by creating enjoyable experiences to retain their continuance intention to shop online (Shaw et al., 2022).

Augmented Reality (AR) has been increasingly incorporated into retailers' digital marketing strategies as a marketing tool lately. Along with Virtual Reality (VR) as part of the Extended Reality (XR) technology, AR has been proven to be able to create an immersive experience that improves the customer's shopping intention and experience (He et al., 2018; Whang et al., 2021). AR is an interactive technology which is able to create a virtual layer that adds a 3D model of an object or text to the physical environment of the user (Javornik, 2016). The user will be able to control the size, rotation, position, and the type of the objects as they desire. Unlike VR, which creates a digital environment for the users to experience, AR adds computer-generated information into the physical environment of the users, which can be accessed through devices that support AR (Wedel et al., 2020). AR can be conveniently accessed through devices that have been widely used, such as smartphones and tablets (Tredinnick, 2018).

Retailers have used AR as a marketing tool to support the pre-purchase stage of their product sales through their mobile apps, such as IKEA, Domino, Sephora, Starbucks, Zara, L'Oreal, and many more. For example, by using the IKEA AR app, customers can place IKEA's furniture at the desired location in their house through their smartphones. The customers can manipulate the size, position, and type to preview the product better before buying the product through the IKEA app. The AR app will help customers save time and energy because they do not have to go to the stores to see the products. The customers can preview how well the goods match their surroundings, so they will be more likely to buy the products without having to worry if the products will not be suitable for their needs. Besides the retail industry, AR technology has also been used in many other industries, such as tourism, education, entertainment, design, advertising, and sports (Kim & Hyun, 2016).



Giant multinational companies have invested in AR, such as Apple, Snap, Alphabet, Nintendo, and Qualcomm (DiLallo, 2022). The strategic investment is essential to answer the growing demand for AR apps. By the end of 2022, AR has been adopted by 1.07 billion users. The number is expected to grow to 1.73 billion users by 2024 (Cureton, 2023). The growing number of AR users aligns with the growing number of smartphone users. The number of smartphone users reached almost 6.6 billion users in 2022. The number of smartphone users is also expected to grow to 7.1 billion by 2024 (Taylor, 2023). Companies can take advantage of the increasing number of smartphone users and AR adopters to increase their sales by using AR-enhanced apps.

Prior research has been carried out in the context of AR Marketing. AR experiential features have been proven to influence consumer's purchase behavior, such as continued usage intention, tourism experience, purchase intention, loyalty, shared social experience, attitude towards virtual trends, and patronage intention (Hsu et al., 2021; He et al., 2018; Yoo, 2020; Sung, 2021; Feng & Xie 2019; Bonnin, 2020). The research was carried out in multiple countries, such as South Korea, China, and France. Most of the results have shown positive relations between the usage of AR apps and desired shopping behaviors. The products and services of the AR apps in the research varied from cosmetics, apparel, tourist attractions, and many more. This shows that AR as a digital marketing tool has gained research interest among academics and researchers, and further research to enrich the literature on AR Marketing will be important.

WOM has been widely considered as the best free advertising for a product. WOM can make products and services go viral easily and help attract new customers, especially when the positive comment is spread by a trusted or influential source. Customers are more likely to spread information about the product if they experience something new and interesting, such as using AR apps. Park et al. (2021) confirmed that WOM positively influence customer's purchase intention of a product. Marketing managers will benefit greatly from the positive WOM spread by the existing customers based on their experience using AR apps to increase sales and expand their customer base.

The innovative features of AR apps have been proven to be able to attract the interest of customers to use them to do their online shopping. However, there has been very little research that focuses on the psychological aspect of customer behavior by using the PAD (Pleasure-Arousal-Dominance) theory, particularly in its relation with WOM (word-of-mouth) intention in the context of AR Marketing. When customers use AR shopping apps, they may experience positive emotions (pleasure) and amusement (arousal) from the interesting AR features, such as vividness and interactivity. The pleasure and arousal the customers feel may compel them to spread positive information to fellow customers about the product.

Based on the arguments above, this research aims to examine the relationship between AR features and WOM intention by determining (1) whether AR apps' features influence pleasure and arousal, (2) whether pleasure and arousal influence WOM intention, and (3) whether pleasure and arousal mediate the relationship between AR apps' features and WOM intention.

II. LITERATURE REVIEW

A) *Stimulus-Organism-Response (SOR) Theory*

The SOR theory is based on behavioral psychology theory. This theory proposes that external factors (Stimulus) will cause a person to react cognitively and emotionally (Organism). The emotional and cognitive reactions will then compel the person to perform a behavioral response (Response) to the original stimulus (Mehrabian & Russell, 1974). The SOR theory is widely used in the study of consumer behavior to examine how certain marketing strategies or tools impact the consumer's internal emotional reactions, which will cause the consumer to create a desired behavioral response.

By AR Marketing research, the SOR theory has been deemed the most suitable theory to be used in the study (Loureiro et al., 2019). By using the SOR theory, AR features will serve as a Stimulus, which would trigger the consumer's psychological response represented by the Organism, resulting in the consumer's producing a Response. Previous studies have also employed the SOR theory in the context of AR and VR Marketing. Hsu et al. (2021) found AR's experiential features (Stimulus) have positive influences on hedonic value and utilitarian value (Organism). However, only hedonic value has a positive influence on continued usage intention (Response). Kumar et al. (2023) discovered that interactivity and augmentation (Stimulus) features of AR have positive influences on both hedonic and utilitarian value (Organism), which in turn influence the behavioral intention (Response) positively. In light of the research that was done by Kim et al. (2020), cognitive and affective responses (Organism) mediate the relationships between authentic experience (Stimulus) produced by VR and visit intention (Response).

However, there has not been much research that examines the Pleasure and Arousal from the PAD theory as the Organism. Pleasure and arousal have been proven to be able to significantly influence a person's behavior in other research on consumer behavior, such as loyalty, willingness to pay more, purchase intention, and continued usage intention (Bigné et al., 2005; Meng et al., 2021; Kumar & Shah, 2021). This research uses the pleasure and arousal variables from the PAD theory as the Organism as the intervening variables between AR features, namely vividness and interactivity (Stimulus) and WOM

intention (Response). By using the SOR theory, this study aims to close the gap in the literature on AR Marketing studies by examining the relationships between AR features and desired behavioral intention mediated by consumers' affective reactions.

B) Pleasure-Arousal-Dominance (PAD) Model

The PAD model was first proposed by Mehrabian and Russell (1974) to evaluate an individual's emotional reactions. The PAD model has three dimensions, namely: (1) pleasure, an emotional state of being happy, joyful, delighted, and satisfied; (2) arousal, an emotional state of being energized, alert, and stimulated; and (3) dominance, an emotional state of being in control and having an autonomy.

The PAD model has three-dimensional scales, namely: (1) The Pleasure-Displeasure scale, which indicates how a person feels positively or negatively about an experience (2) The Arousal-Non-Arousal Scale, which indicates how a person feels energized or disinterested by an experience and (3) The Dominance-Submissiveness Scale, which indicates how a person feels dominant or submissive in a certain situation. For example, a person who feels happy will score high on the Pleasure-Displeasure Scale because happiness is widely accepted as a positive emotion. On the contrary, people who feel sad will score low on the Pleasure-Displeasure Scale because sadness is widely accepted as a negative emotion.

The theory has been widely used in marketing research, particularly consumer behavior studies. The theory posits that external or environmental factors can influence people emotionally. Researchers will be able to determine if certain marketing strategies or tools will cause a person to react with positive or negative emotions. Most marketing research has only used Pleasure and Arousal as the emotional dimensions from the PAD model.

The induced emotion of pleasure can cause a person to react with an approach behavior to the novel stimulus. The individual will also show more desire to be exposed to novel stimuli. Das and Varshneya (2017) found that perceived spatial crowding, co-visitor, and promotional events in a shopping mall positively impact pleasure. The feeling of pleasure from such external factors in the shopping mall consequently influences the customer's repatronage intention and positive word-of-mouth positively, which are highly desired by retailers. Similar result was also found in the research conducted by Ang et al. (1997) in the banking industry; the pleasure was found to mediate the relationships between spatial layout and approach behavior towards the banking service. In the hospitality industry, Kumar and Shah (2021) concluded that pleasure mediates the relationships between aesthetic food app design and continued usage intention. In fact, pleasure turned out to be the most significant predictor of continued usage intention.

As an affective reaction, arousal has been proven to be able to compel a person to react with an approach behavior. The person who has a high level of arousal after being exposed to a stimulating experience is more likely to be willing to interact with the novel experience in a higher degree and frequency. Meng et al. (2021) found that arousal can regulate the relationship between arousal and consumers' willingness to purchase in a positive manner. Customers with a high level of attention due to receiving celebrities' incentives will be triggered to decide on a purchase quickly. Lazaris et al. (2022) concluded that stores' offline and online atmospheric cues affect arousal significantly, which in turn affects purchase intention positively.

In the AR Marketing context, the PAD model has rarely been used to mediate the relationships between AR features and behavioral intention, particularly WOM intention. Therefore, this research aims to use pleasure and arousal as the intervening variables to mediate the relationships between AR features, namely vividness and interactivity, and WOM intention. By analysing the connections between variables using the PAD model, this study seeks to close the gap in the literature on AR marketing.

C) Hypothesis Development

This research aims to confirm the relationships between AR features (interactivity and aesthetic quality) and affective states (pleasure and arousal). Furthermore, this research investigates the relationship between the affective states and WOM intention. This research also aims to investigate the function of arousal and pleasure as mediators in the interactions between AR features and WOM intention. The research model of this research can be seen in Figure 1 below:

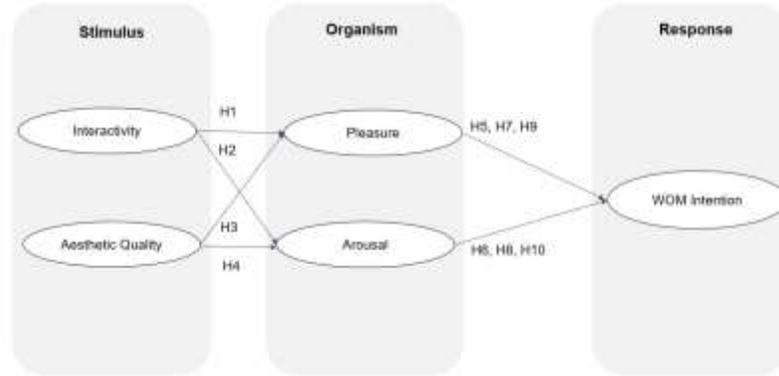


Figure 1: Research Model

D) The Relationship between Interactivity and Affective States

With AR technology, retailers can create a virtual experience that will entertain the customers at the pre-purchase stage. Customers will not only be able to preview the product, but they will also be able to have a playful interaction with it. AR features, particularly interactivity, have been proven to give hedonic benefits to the users, which are related to positive emotions, such as enjoyment and pleasure (Hsu et al., 2021). Users who feel happy after interacting with the digital product by using AR will have an overall positive shopping experience. Interactivity, which is connected to how much users can interact with the AR’s digital content, will also induce mental stimulation, which keeps the users engaged and immersed in the experience while actively interacting with the digital product (Arghashi & Yuksel, 2022). Thus, this research believes that interactivity is able to positively influence pleasure and arousal as an affective reaction to technology. Based on the explanation above, the research hypotheses are as follows:

H1: AR app’s interactivity positively influences pleasure

H2: AR app’s interactivity positively influences arousal

E) The Relationship between Aesthetic Quality and Affective States

Appearance plays an important role in attracting customers. Visually pleasant appearance of a product has been confirmed to evoke positive emotions (Chang et al., 2014). In using AR, the degree of realism and vividness of the 3D product improves the user’s experience. Customers will be more satisfied when they are able to view the digital product more clearly from their smartphone devices. In AR Marketing research, aesthetic quality has also been confirmed to positively influence enjoyment as a positive emotion (Pantano et al., 2017). Besides generating positive emotions such as pleasure and enjoyment, the aesthetic quality of the product is also able to help the users to stay engaged and interested in using the product. The sensory enjoyment produced by AR products will be able to keep the users entertained while trying the product digitally. By employing the PAD model, previous studies have also found that aesthetic quality is positively related to pleasure and arousal (Chang et al., 2014; Kumar & Shah, 2021). This research posits that aesthetic quality can positively influence both pleasure and arousal as an affective reaction when using AR while shopping online. Customers will be more attracted and immersed in trying the digital product when the AR app offers a high visual quality. Thus, they will find their shopping experience more enjoyable. In light of the preceding explanation, the research hypotheses are as follows:

H3: AR app’s aesthetic quality positively influences pleasure

H4: AR app’s aesthetic quality positively influences arousal

F) The Relationship between Affective States and WOM Intention

In consumer behavior studies, the affective states, particularly pleasure and arousal, have been confirmed to influence behavioral actions and intentions (Das and Varshneya, 2017; Bigné et al., 2005). Lazaris et al. (2022) found that pleasure and arousal positively influence purchase intention. Meng et al. (2021) also confirmed that pleasure and arousal positively influence and increase purchase behavior, willingness to pay more, and product searches. Pleasure and arousal have also been found to positively influence continued usage intention (Kumar & Shah, 2021). Hasan and Neela (2021) also discovered that tourist experiences in water-based adventure activities directly influence WOM intention. To fill the gap of the previous research, this research suggests that excitement and delight positively influence the WOM intention of the users of AR apps as the desired behavioral intention. Customers will be more likely to spread positive information about the apps and products after experiencing pleasure and arousal at the pre-purchase stage. Positive WOM is important for retailers to market their products more effectively. Therefore, retailers will expect that the usage of AR will be able to increase customer’s WOM intention. The following are the research hypotheses that follow the clarification above:

H5: Pleasure positively influences WOM's intention

H6: Arousal positively influences WOM intention

G) Affective States Mediating the Relationship between AR Features and WOM Intention

Emotions have been known to influence the decision-making process of an individual in responding to external stimuli. Certain emotional reactions may enhance the possibility of the particular individual to take desirable actions, particularly in consumer behavior studies. As affective states, pleasure and arousal have been demonstrated to facilitate the connection between marketing or promotional features and behavioral actions, emotions, and intentions (Loureiro et al., 2021; Meng et al., 2021). Lazaris et al. (2022) concluded that the affective states mediate purchase intention when exposed to additive omnichannel stimuli. Kumar and Shah (2021) also found that both pleasure and arousal play a mediating role in continued usage intentions in research conducted on the consumers of food delivery apps. Similarly, in AR Marketing, pleasure and arousal are also believed to be able to mediate the relationship between AR features and desired behavioral actions. AR experiential features will be able to produce pleasure and arousal, which in turn enhance the individual's desire to respond positively to AR promotional features. Thus, this research seeks to determine the significance of pleasure and arousal in arbitrating the connections between AR features (interactivity and aesthetic quality) and WOM intention. The research hypotheses are as follows:

H7: Pleasure mediates the relationship between interactivity and WOM intention

H8: Arousal mediates the relationship between interactivity and WOM intention

H9: Pleasure mediates the relationship between aesthetic quality and WOM intention

H10: Arousal mediates the relationship between aesthetic quality and WOM intention

III. RESULTS AND DISCUSSION

A) Measurement Items

This research has five variables derived from existing literature, namely interactivity, aesthetic quality, pleasure, arousal, and WOM intention. The items in this research have been slightly modified from the original source (Table 1). To measure all the variables, this research uses the 5-point Likert scale, with the range of 1 “strongly disagree” to 5 “strongly agree”. The objects of measurement and constructs of this research are presented in Table 1 below.

Table 1: Measurement Items

Construct	Measurement Item	Source
Interactivity (INT)		
INT1	I was in control of my navigation throughout the usage of this AR app.	Hsu et al. (2021),
INT2	The interactive features of this AR app help me to choose the cosmetics.	Nikhashemi et al.
INT3	The AR app can respond to my needs quickly.	(2021)
INT4	I can control the content of this AR app according to my needs.	
Aesthetic Quality (AQ)		
AQ1	The AR app's features look interesting.	Pantano et al.
AQ2	The AR app's features are designed beautifully.	(2017), Hsieh et al.
AQ3	The AR app's design pleases me.	(2021)
AQ4	The AR app's features are designed professionally.	
Pleasure (PL)		
PL1	I feel happy when I am using this AR app	Das and Varshneya
PL2	I feel satisfied when I am using this AR app.	(2017), Kumar &
PL3	I enjoy using this AR app.	Shah (2021)
PL4	I feel entertained when I am using this AR app.	
Arousal (ARS)		
ARS1	I feel enthusiastic when I am using this AR app	Das and Varshneya
ARS2	This AR app stimulates me to try cosmetics.	(2017), Kumar &
ARS3	I feel interested in using this AR app.	Shah (2021)
ARS4	I feel wide awake when I am using this AR app.	
WOM Intention (WOM)		
WOM1	I will recommend the makeup products and AR app to other people.	Tyrvainen et al.
WOM2	I will spread positive comments on the makeup products and AR app.	(2020), Park et al.
WOM3	I will tell you my positive experience about the makeup products and AR app.	(2021)
WOM4	I will invite my friends and relatives to use the makeup products and AR app.	

B) Demographic Profile

This research has five variables derived from existing literature, namely interactivity, aesthetic quality, pleasure, arousal, and WOM intention. The items in this research have been slightly modified from the original source (Table 1). To measure all the variables, this research uses the 5-point Likert scale with the range of 1 “strongly disagree” to 5 “strongly agree”. The objects of measurement and constructs of this research are presented in Table 1 below.

Table 2: Respondents’ Demographic Profile

	Frequency	Percentage
Gender		
Male	3	1%
Female	280	99%
Education		
High School and below	65	22%
Undergraduate	180	64%
Graduate	33	12%
Others	5	2%
Job		
Employees	199	70%
Students	33	12%
Self-Employed	23	8%
Entrepreneurs	20	7%
Others	8	3%
Frequency of Purchasing Makeup Products Online		
<2 times	9	3%
2-4 times	98	35%
5-7 times	127	45%
More than 7 times	49	17%

C) Reliability-Validity Testing

This research tests the reliability and validity of the constructs. As shown in Table 3, the Cronbach Alpha values for the 5 constructs exceed the acceptable threshold of 0.70. The testing result finds the Composite Reliability values of the 5 constructs exceed 0.70, ranging from 0.812 to 0.864. The values above indicate that the conditions of reliability testing have been satisfied.

This research also assesses the convergent validity of the constructs. To meet the requirement of the convergent validity testing, all the loading factors must exceed 0.70. As presented in Table 3, the factor loadings exceed 0.70, ranging from 0.704 to 0.809. Furthermore, all of the Average Variance Extracted values have to exceed 0.50. As shown in Table 3, the Average Variance Extracted values of the latent variables of this research exceed 0.50, ranging from 0.520 to 0.615. These results mean that the conditions of convergent validity have been satisfied.

This research also assesses the discriminant validity. Table 4 illustrates that every construct's cross-loading value has exceeded 0.7. The values of each construct are also larger compared to the other constructs in the research. Therefore, the discriminant validity’s conditions have been satisfied and deemed acceptable.

Table 3: Reliability-Validity Test Result

Variable	Factor Loadings	Cronbach’s Alpha	Composite Reliability	Average Variance Extracted
Interactivity		0.762	0.848	0.584
INT1	0.762			
INT2	0.709			
INT3	0.807			
INT4	0.775			
Aesthetic Quality		0.745	0.840	0.567
AQ1	0.739			
AQ2	0.772			
AQ3	0.719			
AQ4	0.781			
Pleasure		0.768	0.851	0.589
PL1	0.791			

PL2	0.719			
PL3	0.778			
PL4	0.780			
Arousal		0.700	0.812	0.520
ARS1	0.731			
ARS2	0.736			
ARS3	0.713			
ARS4	0.704			
WOM Intention		0.791	0.864	0.615
WOM1	0.756			
WOM2	0.776			
WOM3	0.794			
WOM4	0.809			

Table 4: Cross Loadings Test Result

Variable	Aesthetic Quality	Arousal	Interactivity	Pleasure	WOM Intention
AQ1	0.739	0.345	0.623	0.625	0.541
AQ2	0.772	0.458	0.612	0.617	0.665
AQ3	0.719	0.368	0.513	0.577	0.468
AQ4	0.781	0.395	0.620	0.676	0.508
ARS1	0.357	0.731	0.382	0.383	0.415
ARS2	0.357	0.736	0.382	0.393	0.430
ARS3	0.282	0.713	0.266	0.283	0.302
ARS4	0.456	0.704	0.419	0.417	0.582
INT1	0.614	0.414	0.762	0.586	0.487
INT2	0.550	0.330	0.709	0.546	0.472
INT3	0.601	0.407	0.807	0.695	0.610
INT4	0.641	0.425	0.775	0.611	0.656
PL1	0.683	0.431	0.680	0.791	0.629
PL2	0.551	0.344	0.532	0.719	0.463
PL3	0.658	0.413	0.622	0.778	0.548
PL4	0.644	0.417	0.613	0.780	0.607
WOM1	0.567	0.478	0.516	0.538	0.756
WOM2	0.514	0.492	0.533	0.506	0.776
WOM3	0.588	0.488	0.616	0.654	0.794
WOM4	0.602	0.511	0.623	0.602	0.809

D) Hypothesis Testing

To test the hypotheses, this research uses the PLS-SEM with the SmartPLS 3.2.9. software. The hypothesis testing result is shown in Table 5 below.

Table 5: Hypothesis Test Result

Hypothesis	Original Sample	Standard Deviation	T-Stats	P-Values	Result
Interactivity-> Pleasure (H1)	0.390	0.045	8.665	0.000	Supported
Interactivity-> Arousal (H2)	0.281	0.089	3.173	0.002	Supported
Aesthetic Quality -> Pleasure (H3)	0.523	0.046	11.277	0.000	Supported
Aesthetic Quality -> Arousal (H4)	0.300	0.079	3.806	0.000	Supported
Pleasure -> WOM Intention (H5)	0.563	0.052	10.851	0.000	Supported
Arousal -> WOM Intention (H6)	0.332	0.050	6.590	0.000	Supported
Interactivity -> Pleasure -> WOM Intention (H7)	0.220	0.033	6.661	0.000	Supported
Interactivity -> Arousal -> WOM Intention (H8)	0.093	0.032	2.907	0.004	Supported
Aesthetic Quality -> Pleasure -> WOM Intention (H9)	0.294	0.039	7.577	0.000	Supported
Aesthetic Quality -> Arousal -> WOM Intention (H10)	0.099	0.030	3.284	0.001	Supported

Based on the hypothesis testing result in Table 5, interactivity features positively and significantly influence both pleasure (p-value $0.000 < 0.05$) and arousal (p-value $0.002 < 0.05$), meaning that H1 and H2 are accepted. Similar to interactivity, aesthetic quality influences both pleasure (p-value $0.000 < 0.05$) and arousal (p-value $0.000 < 0.05$) positively and significantly, indicating that H3 and H4 are accepted. Both pleasure and arousal influence WOM intention (p-value $0.000 < 0.05$) positively and significantly. Thus, H5 and H6 are accepted.

Furthermore, this research also tests the mediating effects of affective states (pleasure and arousal) on the connection between AR features (interactivity and aesthetic quality) and WOM intention. The results presented in Table 5 show that pleasure mediates the relationships between both AR features and WOM intention. Arousal was well found to regulate the connections between interactivity, aesthetic quality, and WOM intention. Thus, H7, H8, H9, and H10 are accepted.

In addition, this research also assessed the R2 value of the constructs. The R2 value of 0.624 indicates that the explanatory variables exhibit statistical significance. According to Hair et al. (2011), the R2 score of this research can be classified as moderate. As shown in Table 6, this result indicates that the model can explain a 62.4% variance in WOM intention.

Table 6: R² Values

Variable	R ²
Arousal	0.302
Pleasure	0.746
WOM Intention	0.624

E) Discussion

The findings of this research conclude that H1, H2, H3, H4, H5, and H6 are accepted. AR experiential features can influence the emotions of pleasure and arousal, which in turn influence desirable WOM intention in a positive and significant manner. Interactivity, which involves a high level of engagement in using the AR app, can evoke feelings of pleasure and arousal from being and being able to interact with the content digitally. Similarly, the aesthetic quality of the app, which is signified by the quality of design and vividness of the AR app, can enhance pleasure and arousal in using the AR app to select cosmetic products. The affective states of pleasure and arousal that the users feel while using the app will be able to enhance their intention to spread positive reviews and stories about the cosmetic products and the AR app to their friends and family. Such positive behavioral reactions will be able to improve the sales of the products through the free advertising nature of word-of-mouth.

Additionally, this research also confirms the mediating roles of both pleasure and arousal on the relationship between AR features and WOM intention with the acceptance of H7, H8, H9 and H10. The interactivity and aesthetic quality features of the AR app can elicit positive emotions, particularly pleasure. Consumers with a higher level of pleasure from using the AR experiential features are more likely to spread positive news and comments about the products to others. In a similar fashion, arousal, which is positively associated with interactivity and aesthetic quality, leads to consumers' higher drive to spread positive word-of-mouth. Marketers should highly consider benefiting from such positive associations to promote their products more effectively.

F) Theoretical Contribution

This research produces three contributions to the digital marketing literature. First, this research combines the usage of SOR theory and the PAD model, extending their applications in the context of AR Marketing. The research confirms the significant and positive relationships between AR features (interactivity and aesthetic quality), affective states (pleasure and arousal), and behavioral action (WOM intention). Research combining the theory and model with the variables above has never been conducted in the past. This research also confirms the parts that arousal and pleasure play as mediators from the PAD model in the connections between AR features and WOM intention. Thus, this research added a fresh research paradigm to the extant consumer behavior and AR Marketing literature.

Second, this research is conducted in Indonesia, particularly in Jakarta. Indonesia is a fast-growing country expected to become one of the biggest economies in the world. The potential of the application of AR Marketing is highly promising; however, research in the context of AR Marketing by using widely available-to-download apps has rarely been done in Indonesia. Most of the research has been focused on the creation of a new AR app. Thus, this research enriches the literature on AR Marketing conducted in a particular country with a widely available and downloadable commercial app.

Third, this research fills the research gap by finding correlations in relationships of the variables that have never been investigated in previous research. This research investigates the relationships between interactivity and aesthetic quality as AR features and pleasure and arousal from the PAD model as emotional states. Furthermore, this research also investigates the

relationships between emotional states and WOM intention, which were found to be significant and positive manner. This research also validates how emotional states mediate the interaction between AR features and WOM intention.

G) Practical Contribution

This research provides two practical contributions to the marketing sector. First, this research aids marketers in understanding how customers respond positively to the experience provided by the AR app, which prompts them to spread positive information about the cosmetic app and products. Marketers will benefit greatly from the free advertising gained from the increased WOM intention. This research explores the psychological aspect of emotions in enhancing WOM intention. It suggests the importance of creating positive and compelling emotions, particularly pleasure and arousal, in driving customer's willingness to advertise the app and products to their friends and relatives.

Second, this research helps marketers to identify the important aspects of AR features that will evoke the emotions of pleasure and arousal, namely interactivity and aesthetic quality. In developing an AR app, marketers should focus on creating interactive features to create an immersive experience positively associated with pleasure and arousal. In designing an AR app, marketers must also emphasise the importance of creating a beautiful and pleasing design, as an aesthetically pleasing design has been confirmed to trigger pleasure and arousal, which will drive the customers to spread positive information about the app and products.

Third, this research conducted in Indonesia brings awareness to marketers and companies to start utilizing AR-based technology in their marketing strategy. While the penetration of AR/VR usage in Indonesia remains low, the usage is gradually increasing from year to year. Based on the research findings, which confirm the positive relationship between AR usage and WOM intention in Indonesia, marketers and companies in Indonesia may take advantage by using AR technology in their marketing of various types of products, particularly in the retail industry.

H) Limitations and Future Research

There are a few issues with this study that could be resolved in the next investigations. First, this research only studies the samples from Jakarta, the capital city of Indonesia. Future research may expand the samples by including other prominent cities in Indonesia. Second, this research only uses online questionnaires as the instrument to collect the data. Future research may employ a more experimental approach to improve the scope of the research. Third, this research only investigates the connections between behavioural traits and AR characteristics intention in the retail industry, particularly for cosmetic products. Future research may consider expanding to other types of products or industries, such as tourism, education, and many more.

IV. CONCLUSION

This research studies the relationships between AR features, emotional states, and WOM intention using the SOR theory and PAD model in the retail industry. This research focuses on the online commerce of cosmetic products and the psychological reactions of the customers in using the shopping app, which utilizes AR-based technology with virtual try-on features of the cosmetic products. This research confirms that AR features, namely interactivity and aesthetic quality, influence the affective states (pleasure and arousal) of the users in a positive and significant manner. Higher levels of pleasure and arousal are also confirmed to lead to customers' higher motivation to spread positive information about the app and products. This study further demonstrates that the links between AR sensory qualities and WOM intention are mediated by both pleasure and arousal. To sum up, the results of this study add fresh theoretical insights to the body of existing research in AR Marketing and customer behavior studies. This research also provides practical suggestions to marketers and companies seeking to increase their customers' positive word-of-mouth. Researchers may consider expanding the samples, locations, and variables in the AR Marketing study for future research.

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